Varazdin Development and Entrepreneurship Agency and **University North**
in cooperation with
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Faculty of Management University of Warsaw
Faculty of Law, Economics and Social Sciences Sale - Mohammed V University in Rabat
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Altay Ismayilov, Khatai Aliyev, Manuel Benazic

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Altay Ismayilov, Azerbaijan State University of Economics, Azerbaijan
Khatai Aliyev, Azerbaijan State University of Economics, Azerbaijan
Manuel Benazic, University of Pula, Croatia

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Mehriban Samadova
Associate Professor at
Azerbaijan State University of Economics (UNEC), Azerbaijan
mehriban.samedova@inbox.ru; mehriban_samadova@unec.edu.az

Galina Grinenko
Belgorod State University of Technology, V.G. Shukhov, Russia
galagrin@mail.ru

Alexander Troshin
Belgorod State University of Technology, V.G. Shukhov, Russia
as_troshin@inbox.ru

Svetlana Ykimchuk
Belgorod National Research University, Russia

ABSTRACT

Transport is one of the largest basic sectors of the economy, an important part of the production and social infrastructure. Transport communications are *the material basis for state's integration into the global economic system. Transport infrastructure and transport services should meet the needs of providing countries, regions and industries with economic links, best responding to the priorities of social and economic development. The emergence of new communication routes, seaports, airports, and improved transport technologies opens up new opportunities for the development of the world economy. In the development of world transport system, it is necessary to consider the influence many different factors. The unification of the international legal framework of transport activities; the increasing concentration of the transportation and processing of cargoes in the system of international transport corridors and portals. They form a single global transport infrastructure; high level of standardization of transport equipment and technologies; integration of various types of transport, development of intermodal transport; creation of multidisciplinary international transport integration transport holdings business. It is possible to become one of the leaders of the global economy only by switching to an intensive, innovative type of development. This path requires new strategic decisions to develop the transport sector in the long term. The transport strategy determines the state's position on creating conditions for social and economic development. An important task is to improve the quality of transport services, reduce the total costs of society that depend on transport, increase the competitiveness of the domestic transport system, and strengthen the innovative, social and environmental orientation of the transport industry. Increasing the competitiveness of the transport complex, developing the export of transport services and realizing the transit potential contribute to strengthening state's position in the global transport system. In the first part of the article, the logistics features of the formation of transport macro systems and international transport corridors are considered. The second part is devoted to the analysis of the main trends in the development of the world transport and logistics system. In the third part, the influence of transport infrastructure development on the economy of the region, as a whole, is shown on the example of a single country.*

Keywords: *international transport corridors, the transport infrastructure, the transport services, the transport complex, the transport communications, the transport strategy*

1. INTRODUCTION

Transport is an important sector of the economy, an integral part of the production and social infrastructure. Transport communications form the material basis of the state 's integration into the global economic system. Transport infrastructure and transport services should meet the needs of providing countries, regions and industries with economic links, best responding to the priorities of social and economic development. The emergence of new communication routes, seaports, airports, and improved transport technologies opens up new opportunities for the development of the world economy. The global transport infrastructure is formed on the basis of integration of services of various types of transport, development of intermodal transport, cargo processing in the system of international transport corridors, creation of multi-profile international transport holdings, integration of the transport business [1]. The development of the world transport system is influenced by such factors as: international unification of the legal framework for transport activities; high level of standardization of transport equipment and technologies; creation of new international transport corridors. Transportation is how a product is sold and purchased, i.e. it acts as a commodity and has a consumer value. The movement of goods and people can be considered as a product of transport, but it has its own characteristics:

1) transport Products do not have a material form, but they are material in nature, since material resources are spent during the movement: rolling stock and maintenance equipment are worn out, transport workers ' labor;
2) transport, as a product, must have reserves of capacity and carrying capacity in transportation under any conditions. This feature of transport logistics corresponds to the logistics function-warehousing;
3) transport products are additional transport costs that are associated with the movement of goods, and related to the cost of circulation;
4) the cost of transport products is included in the final cost of transported products;
5) production of transport products takes place outside the transport company.

Transport should be used in such a way that the transport costs are the lowest, all other things being equal, and the mode of transport used for transportation is the one that is most efficient for this type of product and distance. Transport support covers the sphere of production, circulation and consumption of products. For foreign trade, transport services are necessary in order to fulfill an international contract of carriage with appropriate quality and certain economic efficiency. Efficiency of transport services is determined by minimizing transport and forwarding costs when considering various transport options. The quality of transportation is determined by such indicators as: delivery time, cargo safety, cargo mass in transit, etc. All large companies, and in the first place, transnational corporations participate in business outside their own country. Logistics is used to move goods produced in one country for sale to another country in order to make a profit. Logistics becomes international when the supply chain crosses national borders. Global logistics is used for integrated operations carried out internationally. The role of commercial logistics in modern competition is growing [2]. The world transport and logistics system, is a complex of vehicles and companies, as well as communication routes between countries, which is an element of the modern global economy. Within the framework of regional economic integration, regional transport systems are being formed. Regional transport systems are created with the aim of overcoming the technological and legal differences between the national transport systems of countries belonging to the regional association. Examples of regional integration associations are the — Customs Union within the framework of the Eurasian Economic Union; North American Free Trade Area - NAFTA (North America Free Trade Agreement between Canada, Mexico and the USA.); European Union.

Within the framework of regional transport systems, steps are being taken to create transport corridors to ensure the unhindered transportation of large volumes of goods in the main areas of trade within the framework of the association; legal, technological and organizational barriers are removed when vehicles cross national borders; uniform standards of national transport systems, etc. are adopted. An international transport corridor is a corridor that connects two or more neighboring states, and passes through several transit states. Examples of international transport corridors:

- system of transport corridors of the European Union - TEN-T network (Transeuropean Network - Transport);
- Pan-European system of transport corridors - covers mainly the region of Central and Eastern Europe;
- The international transport corridor "TRACECA" - the transport corridor Europe - Caucasus - Asia.

2. ANALYSIS OF THE MAIN TRENDS OF DEVELOPMENT OF THE WORLD TRANSPORT AND LOGISTICS SYSTEM

The state and development trends of the global transport system directly depends on international trade. The larger the volumes of exports and imports of individual states, the more important is the development of transport infrastructure.

2.1. The current state of world trade

World trade is in slow mode. After a quick recovery from 1.3% growth in 2016 to 4.5% in 2017, the average growth in world exports and imports slowed to 2.8% in 2018. In 2019, growth will slow down even more, and this indicator turned out to be 2.6 percent lower than the WTO forecast. The slowdown in trade growth is often associated with increased technological tension between China and the United States, with disruptions caused by this confrontation [3]. The global economy has slowed, developing countries produce 60% of world GDP due to the growth of East Asia, China and India. Inequality in income distribution is growing, contradictions are accumulating, which are expressed in the form of complex inter-regional trade agreements. By the end of 2020, according to IMF economists, world trade will stop growing, having lost almost 700 billion dollars, or 0.8% of world GDP. Speaking in numbers, they expected growth of world GDP in the amount of 97 trillion. USD, and received only 90 trillion. USD. However, not even its size is important here, but growth and speed (Figure 1).

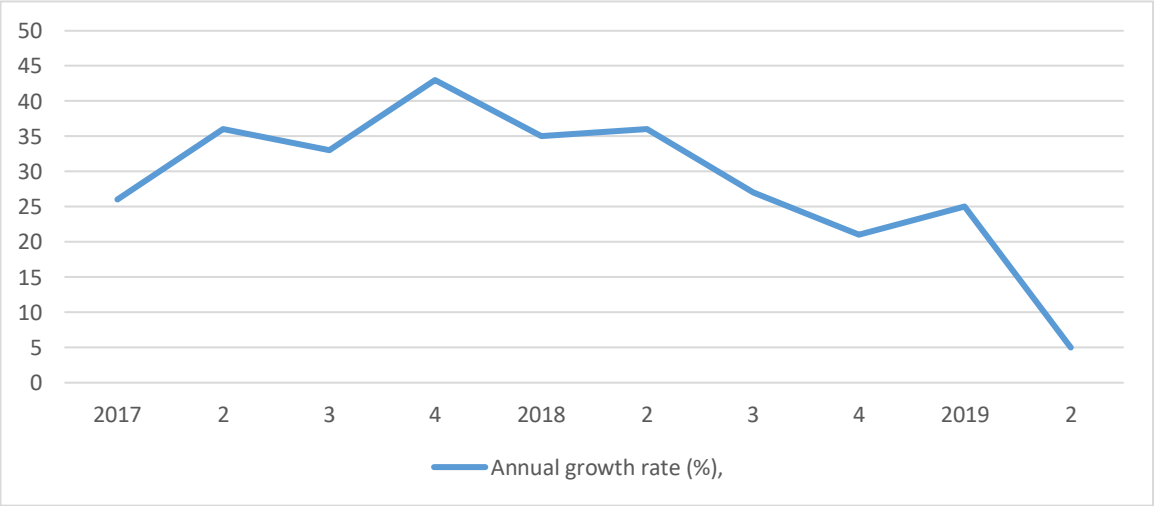

Figure 1: Total, Annual growth rate of world trade (%), 01.2017 – 02.2019 [4]

Deutsche Bank analysts have found yet another confirmation of the impending crisis. An alarm for German bankers was the decline in the shares of the American logistics company FedEx. The value of these shares has traditionally been seen as a leading indicator of a slowdown or decline in world trade. FedEx net profit fell at the beginning of 2020 by almost 21.6%. The reason was the weak performance of the delivery service. The fact is that FedEx has a large geographical coverage, and the revenues of this American company are largely dependent on the transportation of expensive goods. The trade and technological war between the United States and China affected the carrier's profits. Global container shipments are expected to decline. A report by the International Monetary Fund (IMF) identifies risks to global supply chains: further increase in tariffs between the US and China; an increase in US tariffs in the automotive industry and BREXIT without agreement. These factors will weaken investment, cause disruptions in global supply chains and seriously slow down global growth [4]. In 2020, the global economy can show almost zero growth. This conclusion was reached by experts from the Institute of International Finance (IIF). Experts explain their assessment by the large-scale spread of coronavirus, which led to a drop in trade and production in the world. There is a high likelihood of an economic downturn in the United States, Japan, and Eurozone countries. As a result of the pandemic, there is an outflow of capital from financial markets, the volumes of industrial production and trade, passenger and freight transportation are reduced. There is a violation of economic relations and demand both within countries and in the international arena [5].

2.2. Development trends of the global transport system as a service sector

The global market for services is a sphere of exchange of services between countries and is an integral part of international economic relations. One of the most important laws of economic development around the world is the relationship of economic growth and the increasing role of services in the national economy. The service sector has grown into the largest sector of the economy: it accounts for 62-74% of global GDP, as well as 63-75% of the total number of employees, in addition, it contributes to the growth of technical equipment of labor, the introduction of more advanced technologies. According to the World Bank, commodity exports over 10 years, from 2006 to 2016, increased by 32% and currently stands at 16 trillion. dollars, over the same period, world exports of services grew by 64% and reached 4.77 trillion. dollars. After strong growth of 7.9 percent in 2017 and 7.7 percent in 2018, growth in global trade in services slowed by 2.7 percent in 2019. In 2018, global trade in services was estimated at $ 5.8 trillion, representing a quarter of total exports and 7 percent of global GDP. In 2019, it reached 6.0 trillion US dollars. [6]

Service category	**Exports Value (Billions of US$)**		**Annual growth rate %**	**Imports Value (Billions of US$)**		**Annual growth rate %**	**Balance Value (Billions of US$)**	
	2013	**2018**		**2013**	**2018**		**2013**	**2018**
Total services	1 394	1 738	9.3	1745	2118	8.1	352	380
Transport	306	346	8.4	573	579	9.6	267	232
Travel	473	559	7.2	423	648	6.7	50	89
Others	615	833	11.1	749	892	8.1	135	59

Table 1: Trade in services by service category (Developing economies)

Service category	Exports Value (Billions of US$)		Annual growth rate 2018 %	Imports Value (Billions of US$)		Annual growth rate 2018 %	Balance Value (Billions of US$)	
	2013	2018		2013	2018		2013	2018
Total services	3310	3970	6.8	2787	3327	7.0	523	642
Transport	590	624	6.4	571	606	8.1	19	18
Travel	693	844	7.0	605	701	7.7	89	144
Others	2026	2501	6.8	1612	2021	6.4	415	480

Table 2: Trade in services by service category (Developed economies)

In 2018, international sales of services accounted for more than 10 percent of GDP in many countries in Europe, Central America, the Caribbean, and Southeast Asia. In contrast, in much of South America, West and Central Africa, and West and East Asia, service exports accounted for less than 3 percent of GDP. Transport and tourism services dominate the export of services from developing countries. The role of transport in the service sector is constantly increasing. For many products traded in global value chains, a one-day delay is equivalent to a 1 percent tariff increase. Improving customs clearance procedures and border controls, increasing competition in the field of transport and logistics services, improving the structure of ports and managing them can reduce trade costs associated with time and uncertainty factors and mitigate the impact of adverse factors due to geographical remoteness. The expansion of trade between Asian countries as a result of the transfer of low-cost industries from China to other neighboring countries in East and South Asia could help increase shipping. As China moves to more sophisticated manufacturing operations within global value chains, new trade opportunities open up for other countries [7]. Participation in agreements providing for deep integration can give an impetus to institutional and economic policy reforms, especially if these measures are complemented by technical and financial assistance. According to Johnson and Noguera 2017, preferential trade agreements concluded by the European Union and other similar agreements, especially deep ones, play an important role in reducing the ratio of bilateral value added to gross exports, which indicates an increase in global decentralization of production [8]. Entering markets through trade liberalization helps countries expand their markets and gain access to the resources needed for production. So, for example, a large-scale reduction of tariffs carried out unilaterally in Peru in the 2000s is associated with accelerated productivity growth, increased volumes and diversification of exports within the framework of the GSCC [9, 10]. As the relationship between the economy of goods and the economy of services is becoming closer, it is necessary that the reform of the service policy — transport, and a number of business services — be an integral part of the SSCP promotion strategy. [11] Liberalization of domestic and foreign trade can solve the problem of the narrowness of the domestic market, freeing companies and farms from limited domestic demand and domestic resources. Improving the transport and communications infrastructure, as well as introducing competition in these sectors, can eliminate the difficulties associated with geographical remoteness [12]. In many countries, improved transport connectivity through improved transport infrastructure linking manufacturing or agriculture to global markets could contribute to economic growth and increased trade. These changes have a beneficial effect on the transport of containerized and dry bulk cargo. At the same time, expanding land transportation between China and Europe, which are already actively used for the delivery of expensive express cargoes that were previously transported by sea, can lead to a reorientation of some cargo flows from sea transport to rail. Pipelines built as part of the One Belt, One Way Initiative can also inhibit the growth of maritime transport of related goods (Hellenic Shipping News, 2017) [7].

One of the main risks in the field of trade policy is associated with an increase in protectionism. In this regard, United States decisions to withdraw from the Trans-Pacific Partnership Agreement, revise the North American Free Trade Agreement, and reevaluate other existing trade agreements can be noted.[14]

3. PARTICIPATION OF RUSSIA IN THE INTERNATIONAL TRANSPORT AND INFRASTRUCTURE PROJECTS

The intensification of global competition, which covers the markets for goods, services, and capital, has led to the restructuring of the world economy. The balance between economic centers is changing, and the role of regional economic unions is growing. This entails a change in national and world freight flows, increases the requirements for the quality of transport services. Russia seeks to become one of the leaders of the global economy, due to the transition to an intensive, innovative type of development. This path requires the adoption of new strategic decisions for the development of the transport complex for the long term. The main directions of development of the transport and logistics system of Russia are defined in the Federal Target Program "Development of the Transport System of Russia" and in the Transport Strategy of the Russian Federation for the period until 2030. [15] Implementation of the measures outlined in the Program ensures the development of a modern and efficient transport infrastructure, increasing the competitiveness of the Russian transport system and realizing the country's transit potential; increasing the competitiveness of international transport corridors. As a result of the implementation of the Program: the volume of export of transport services will reach 16.8 billion US dollars. The volume of transit traffic will reach 2 million tons per year; cargo transshipment in seaports will reach 966.1; the proportion of the length of sections of the railway network, where there are restrictions on throughput and transport capacity, will be reduced to 12 percent; the proportion of the length of public roads of federal importance that meet regulatory requirements will increase to 85.3 percent [16]. Currently, 40 major road construction projects are underway, with a total value of 2767.5 billion rubles. The largest of them: the international highway "Meridian" (Shanghai - Hamburg). The transport corridor with a length of more than 8.4 thousand km Europe - Western China should pass through the territories of Germany, Poland, Belarus, Russia, Kazakhstan, China and be built by 2023. The need for its construction is caused by an increase in trade between the EU countries and China, which reached 467 billion euros. Currently, freight traffic between the EU and China is carried out through the Suez Canal. (Figure 2).

Figure 2: «Meridian» Motorway (Shanghai - Hamburg)

The length of the sea route is 24 thousand km, and the delivery time takes 40-50 days. The new land route will take on some of the goods that are delivered today via the Suez Canal and the

Northern Sea Route, as well as via the Trans-Siberian Railway. Thanks to the international «Meridian» project, it will be possible to reduce the speed of delivery of goods from Europe to Asia by almost 5 times - up to 11 days and ensure a high level of security. The road will meet the characteristics of the highest technical category with 4-lane traffic. Throughout its entire length, it is planned to install electric lighting lines. The track will be fully paid. In 2015, a very large project began of a radical reconstruction of the A-181 Scandinavia federal highway, as a result of which this road connecting St. Petersburg with the border with Finland should receive instead of the current two at once from 4 to 6 lanes with a dividing lane as well as multi-level interchanges. The estimated cost of the project is 100 billion rubles. The deadline for the project is 2022. The cargo turnover of the ports of the Far East basin is about 26.37% of the total cargo turnover of the ports of Russia. All the main ports of the Far Eastern basin demonstrate an increase in transshipment. The process of modernization of many ports is being carried out, which will increase their throughput and increase cargo turnover. Currently, 85% of export and 45% of import freight traffic is carried out by sea transport of the Far East, by rail (respectively) - 13% and 45%, by river - 2% and 5%. The most important priority in the development of transport infrastructure at the moment, is the establishment of communication between the territories of the Far East and northeast of China. The most important Far Eastern project was the creation of the international transport corridors Primorye-1 and Primorye-2. The Primorye-1 corridor connects the Chinese Harbin with the Russian ports of Vladivostok, Nakhodka and Vostochny in the Primorsky Territory. Primorye-2 is a route from the border Chinese city of Hunchun to the nearby Russian ports of Posyet and Zarubino. It is estimated that by 2030 the freight turnover of the Primorye-1 and Primorye-2 corridors could reach 45 million tons. The construction of the Hyperloop superfast transport system between the port of Zarubino and the PRC border has begun. The investment project "The Big Port of Zarubino" with a total value of 154 billion rubles involves the expansion of the existing port in Trinity Bay in the Primorsky Territory, 18 km from the border with China. It is planned that grain, containers, bulk cargo, rolling (ro-ro) and others will be loaded through the port. Up to 60% of the cargo turnover will be in transit traffic from the northern provinces of the China to the southern ones. [1]

Large transport projects	**Number of projects**	**Project cost billion rubles**
Highways Projects	40	2767,5
Railways	20	1154,4
The largest bridges	5	269,2
Seaports	7	428,1
Airports	7	244,3
Pipelines	3	1850,0
Total:		6713,5

Table 3: Large transport and logistics projects in Russia

The Northern Sea Route is the shortest sea route between the European part of Russia and the Far East. The legislation of the Russian Federation defines it as “the historically established national unified transport communication of Russia in the Arctic”. The length of the Northern Sea Route, from the Kara Gate to Providence Bay, is about 5600 km. An alternative to the Northern Sea Route - transport arteries passing through the Suez or Panama Canals are 12,840 nautical miles. The development of a basic transport network is envisaged on the principles of national transport corridors that are interfaced with European and Asian transport systems. The introduction of a logistics approach to the implementation of the strategy will ensure the acceleration and continuity of the movement of material flows, a 30% reduction in distribution costs, and the compliance of the logistics service with international standards.

4. CONCLUSION

The main trends that determine further prospects for the development of transport infrastructure and transport services:

- Uncertainty of demand has a negative impact on the implementation of transport infrastructure projects and the volume of transportation. This is due to the widespread risks of a geopolitical and economic nature, the COVID-19 pandemic pursued by trade policy, as well as some structural changes.
- The autarkic policies of many states and increasing protectionist sentiments can undermine global economic growth, limit trade flows and change their direction.[5]
- There is a deterioration in the market for shipping. The reason is the strengthening of the consolidation process in linear shipping in the form of mergers and alliances. Low demand for transportation and excess supply of tonnage in a market dominated by mega containers.
- The participation of developing countries in global value chains has played a role in increasing their share in global freight transport.
- By 2023, the aggregate average annual growth rate of dry bulk cargo transportation will amount to 4.9%, and container cargo - 6%, in particular due to an increase in the import of metal ores and a steady increase in transportation on non-main routes.
- The expansion of trade between Asian countries as a result of the transfer of low-cost industries from China to other neighboring countries of East and South Asia can also increase shipping. As China moves into more sophisticated manufacturing operations within global supply chains, new trade opportunities open up for other countries.
- More than 100 major transport projects are currently being implemented in Russia. These are projects in the field of construction of roads and railways, construction of seaports and airports, bridges and pipelines
- The intensification of global competition in the markets for goods, services, and capital has led to the restructuring of the world economy. The balance between economic centers is changing, and the role of regional economic unions is growing. This entails a change in national and world freight flows, increases the requirements for the quality of transport services.

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HUMAN RESOURCES IN DIGITAL ECONOMY

Anna Volkova
Novosibirsk State University of Economics and Management
Novosibirsk, Russia
a.s.volkova@edu.nsuem.ru

Dina Konstantinova
Novosibirsk State University of Economics and Management
Novosibirsk, Russia
d.s.konstantinova@nsuem.ru

Marina Kudaeva
Novosibirsk State University of Economics and Management
Novosibirsk, Russia
m.m.kudaeva@edu.nsuem.ru

Yulia Masalova
Novosibirsk State University of Economics and Management
Novosibirsk, Russia
y.a.masalova@edu.nsuem.ru

ABSTRACT
In modern conditions of global scientific and technological progress and the formation of the digital economy, labour relations are being transformed due to the changing nature and content of labour, as well as the requirements for professional skills of workers. Under the influence of digital technologies, business processes are being modified, leading, among other things, to change in the use of human capital. The spread of digital technology, due to the development of the internet, has led to a change in the nature and type of labour relations in different countries. Remote and flexible work environment, which allows performing many types of work outside of stationary workplaces, is becoming increasingly widespread. In the context of the digital economy from the point of view of the efficient use of human resources in many countries, requirements for flexibility in the organization of labour are a major priority. At the same time, the level of automation of business processes varies in the global context; therefore, the degree of reduction of manual and mechanized labour has a high differentiation. The digitalization era requires employees not only to have traditional business and personal skills for the job, but also to acquire skills that allow the efficient use of digital technologies and «soft skills», allowing establishing effective communications.
Keywords: *Digital economy, Human resources, Labour automation, Labour relations*

1. INTRODUCTION

Under the current conditions of digital economy the digital transformation of working with human resources is particularly important and timely. This research involves determining the role of human resources in the digital economy, which transforms business processes and makes changes in the content of work. In this regard, the features of employment and labour organization in the new conditions were considered, and factors affecting the emergence of new approaches to the use of human resources in the economy were studied. The main trends in the formation of human capital at the level of organizations are analyzed, which allowed us to justify the possibility of using human resources in new conditions.

2. HUMAN RESOURCES IN THE DIGITAL ECONOMY

In this study, we understand human resources as a set of qualities of people, primarily, their intellectual abilities, knowledge and skills, as well as education, health, etc., which determine their ability to create tangible and intangible benefits [8]. Almost all scientists who monitor the current state of the world labour market agree that the widespread use of information and communication technologies in the economy creates serious challenges in terms of their impact on employment. The prospects for the today's labour market are seen in systemic transformations, which involve the creation of new jobs using digital technologies and the replacement of human labour with robots, mainly in production processes. It should be noted that earlier transitions from one economic model to another were also accompanied by changes in the professional structure of society, the educational profiles of employees and the specialization of companies. However, the digital economy has created new competitive factors: communication networks, cognitive skills, research and development, complex goods and services, new forms of education, and labour characteristics. At the same time, it is characterized by a steady decline in the direct participation of human labour in the economy and, and along with it, an increase in the demand for jobs that encourage the development, introduction and use of digital technologies that booster the productivity of jobs directly or indirectly related to them. Thus, technological changes taking place today contribute, on the one hand, to increasing labour productivity, creating conditions for economic growth, and, on the other, lead to irreversible shifts in the structure of employment of the population [2, 7, 9, 13, 14, etc.].

3. APPROACHES TO THE USE OF THE ORGANIZATION'S HUMAN RESOURCES

3.1. Applying flexible working hours and telework in the digital economy

Currently, an analysis of employment conditions affecting the ability to attract human resources to the world economy is required. It should be noted that the conditions are formed under the influence of a number of factors: changes in the size of the labour force; international outsourcing of competencies; aging of the labour force; technological changes; constant development of labour competencies [13, p. 11]. Digital platforms today allow using more flexible employment mechanisms, including telework, which help to keep the work-life balance, reduce cultural barriers, and equalize the professional opportunities for men and women. However, in the future, this means abandoning the traditional employment model, which supposes employment with salary payment and social security for employees [7, p.8], and switching to non-standard forms of self-employment, such as partial, short-term self-employment, freelancing, and other types. Thus, self-employment is identified as a separate segment of the labour market, which is widely spread in the world economy and is considered as a form of receiving payment directly from the customer. In the EU, the share of solo-self-employed in the total number of self-employed does not fall below 50% with an average of 70% [2, p.26]. And in the US, experts estimate that only a quarter of the working-age population currently has a full-time job with social guarantees and compensation. At the same time, for some specialists, such employment is an opportunity to earn extra money, while for others it provides stable and good income along with autonomy and possibility of teleworking, and which requires a variety of competencies, which are not always professionally oriented. The introduction of a tax on professional income in Russia will facilitate the transition of individual participants in the labour market, including individual entrepreneurs, to the status of self-employed in order to optimize their tax deductions. At the same time, foreign experience shows that individual entrepreneurs with a university degree have other employment more often than their less educated colleagues [2, p.28]. The share of people with a university degree in Russia has been steadily increasing over the past two decades, so we can assume that this category of employees tend to combine employment and self-employment.

Thus, the binary division into employed — self-employed does not fully consider the fact the emerging labour force flows in opposite directions, which allows us to distinguish a special group of self-employed people who occupy an intermediate position between employment and self-employment. This group in the world practice is called hybrid solo-self-employment, in which self-employment is only a source of additional earnings for the employee, and education has a significant impact on some aspects of hybrid self-employment, as mentioned above [2, p.23]. It should be noted that this form is quite widespread in Russia. However, the results of the study conducted by foreign experts show that only 10% of employees today are ready to fully rely on projects related to flexible employment, and the percentage of generation Y with full employment has increased sharply from 45% in 2016 to 66% in 2018 [6]. These data show that stability, job and income security, as well as additional benefits received from the employer, are still valuable for the population. At the same time, an increasing number of specialists are ready to telework, which is facilitated by the introduction of digital technologies. The analysis of scientific publications and expert opinions also makes it possible to highlight another trend caused by technological progress in developed countries - the polarization of the labour market. It means employment growth at opposite ends of the professional qualification spectrum. Thus, at the same time, the need for highly paid specialists with a high level of education, who are able to solve abstract tasks, and for low-skilled workers in low-paid jobs performing manual operations is growing simultaneously [14, p. 39]. At the same time, those jobs that require an average level of skills and routine operations that robots can perform are disappearing. Therefore, a person will have to adapt to these conditions in the future and choose the most suitable niche for themselves.

3.2. Changing the nature and content of work in terms of its organization in the digital economy

The introduction of digital technologies in the activities of enterprises leads to the need for a significant transformation of the majority of business processes, thereby radically changing the nature and content of employees' work. Manual and machine-manual labour processes are replaced by automated ones, while the person just controls and manages them. On the one hand, this trend allows the employee to perform more complex/creative tasks that require non-standard thinking and impose higher requirements on their qualifications. On the other hand, it can lead to the replacement of some routine operations with others that involve performing non-creative work on the maintenance of automated workplaces. As a result, in the conditions of digitalization we can divide employees into two types: creators - those engaged in creative work and technicians, who perform the functions of servicing new-generation systems. The significant reduction in the number of jobs predicted by the world community due to the robotization of labour processes is another trend in the field of labour organization due to digitalization. So at the beginning of 2016, the World Economic Forum (WEF) report [16] made a forecast that by 2020, 5 million jobs will be cut due to the development of robotics and artificial intelligence. According to the results of a study by K. Frey and M. Osborn, 47% of jobs in the United States will be made redundant due to automation by 2033, while the World Bank forecasts a reduction of 77% of jobs for China [19]. At the same time, robots can replace not only workers engaged in heavy physical labour, but also take on a number of managerial functions. The results of surveys in different countries show that majority of the surveyed share the opinion of international experts. In Russia, 55% of respondents are confident that robots will soon replace people in most jobs, at the same time, in their opinion, robots can replace mainly low-skilled workers, sales and service personnel [1, p.38-39]. And in foreign countries, from 31% (Great Britain) up to 55% (Romania, Croatia) of the population believe that their work can be fully or partially performed by robots [1, p.40]. The impact of the digital economy not only changes the technological and functional division of labour described above, but it also

significantly changes the professional structure of employees. For example, according to the study of Boston Consulting Group (BCG) from 9 to 50% of all existing jobs will have disappeared by 2025. And the Atlas of new professions compiled by the Agency For Strategic Initiatives and the SKOLKOVO Business School predicts the emergence of 186 new jobs by 2030 and the disappearance of 57 outdated ones. At the same time, a number of new jobs will be created at the intersection of different professional activities that previously did not overlap in the pre-digital era (IT-medic, robotics Concierge, etc.). The jobs remaining in the labour market will change inevitably as well. For example, a study by McKinsey in 2019 found that the robotization of enterprises is impossible without retraining their employees, since they lack the appropriate skills. PricewaterhouseCoopers (PWS) estimated that 39% of international companies analyze the impact of artificial intelligence on the future demand for skills and competencies [10, p.155]. Accordingly, the requirements for employees are changing, and there is a need to master their new digital competencies.

3.3. Changing requirements for employee competencies in the digital economy

The digital economy imposes special requirements on the personnel competences. Many scientists and research groups offer different approaches to the set of competencies relevant to Industry 4.0. BCG presented the results of their Russia-2025: From Personnel To Talent study [12]. Based on the methodologies of Sberbank, the Higher School of Economics, The Lominger Competency Library, RosExpert, WorldSkills Russia, and Global Education Futures, a target model of universal competencies was designed. The model facilitates the achievement of efficiency in the modern world. The presented model includes cognitive, social-behavioural, and digital skills. WEF analysts identified 10 key skills needed for the efficient performance in Industry 4.0: integrated problem solving, critical thinking, creativity, people management, coordination, interaction skills, emotional intelligence, judgment and speed of decision-making, service orientation, ability to negotiate, and cognitive flexibility [15]. Burning Glass Technologies developed the New Foundational Skills of the Digital Economy model: Human Skills, Domain Knowledge, Digital Building Block Skills and Business Enabler Skills [17]. Thus, the list of competitive personnel competencies and skills in the digital economy is quite diverse and extensive. Personnel competencies which cannot be automated and robotized will be highly demanded under the conditions of the digital economy. Therefore, all existing competence models emphasise the importance of soft skills, which will determine the competitiveness of personnel. Soft skills are the core of universal competencies in the digital economy. To ensure a high level of employee competitiveness, it is necessary to regularly monitor the professional environment and maintain competencies at a high level. Thus, lifelong learning and the formation of an environment conducive to such development become the key to success in ensuring the competitiveness. Most households around the world have internet access (99% in Korea and Japan, 94% in Germany, 77% in Russia). People use the internet almost every day. Accordingly, in many countries the environment conducive to the development of staff competencies is sufficiently favourable. Key competencies of the digital economy can be freely formed and developed in open educational courses and other online platforms. But in 2018, only 3% of the Russians used the internet for distance learning, while in the US this figure was 20%, 14% in the UK, 9% in Japan, and 6% in France [1, p.28]. The developed digital environment, which contributes to the development of professional competencies, is still not used to its full potential to increase competitiveness. One of the objective reasons is the lack of digital skills. For example, among the Russian population that does not use the Internet regularly, 31.7% say that they do not have enough skills to work in the global network. In comparison with European countries, Russians have the lowest level of basic digital skills. For example, in Russia, the skill of working with spreadsheets is 19% less developed than in Germany and France, and is 30% less developed than in Sweden and Finland

[1, p.24-25]. The challenges of the digital economy emphasise the importance of investment into the development of universal personnel competencies and the motivation for their development. Hence, organizations will create a unique competitive advantage that digitalization cannot provide.

3.4. HR analytics in the digital economy

In today's world, the company's success is determined by continuous innovation. According to John Sullivan, the strategic shift towards innovation is challenging for most companies because most HR functions are based on 20th-century principles: efficiency, risk avoidance, compliance with rules, and guesswork-based solutions [3]. Most HR decisions are still made intuitively. Thus, according to a study conducted by TalentCode in 2016, 2/3 of companies formed competencies using expert analysis of interviews with managers [4]. As a result, decisions are often flawed and inefficient. The transition to HR management based on HR analytics enables informed decision-making, when the decisions are based on statistical and mathematical analysis. This is extremely important, because all actions taken by the company are ultimately the actions of certain people. A successful business is one in which the best, well-informed management decisions are made with respect to personnel. The use of HR analytics increases business confidence in HR specialists. HR services are increasingly involved in making strategic decisions for business. The reasoning for such decisions is based on the use of predictive analytics. Predictive analytics can be widely used in the transition from traditional formalized data collection and processing systems to more flexible and adaptive ones. According to a study conducted by the Rabota.ru website in Russia, only 56% of respondents said that they use HR analytics in their work. Only 7% of companies have a position of an HR analyst [11]. SHL Russia experts believe that "analytics is implemented and applied not because the organization needs to find a solution to any current problem, but only as a fashion statement; or because the IT systems used in the organization have the appropriate features." According to a study conducted by SHL Russia, every third company in Russia meets internal resistance when introducing HR analytics methods. The development of HR analytics in Russia is hindered by the following obstacles:

- insufficient integration of complex platforms for personnel management (TMS) into IT systems;
- lack of objective data, only 3% of respondents do not experience problems with data collection and processing;
- lack of the necessary analytical skills of HR managers who are engaged in analytics, and the experience of working with data in the organization [18].

According to experts PwC Russia, the following steps will contribute to the introduction of artificial intelligence and HR analytics [5]:

1. Widespread use of artificial intelligence in routine processes in order to reduce time and financial costs.
2. A new approach to professional development. The acquired knowledge must be quickly applied in practice in order to turn it into real skills.
3. Risk management and responsible use of artificial intelligence. It is important not only to benefit from the use of artificial intelligence technology, but also to demonstrate a responsible approach to its use.
4. Integrating artificial intelligence into operational activities.
5. Changing the business model. The introduction of artificial intelligence technology is usually not the most difficult moment. For most companies, the difficulties relate to business and human resources aspects. This is why it is important for senior managers to support artificial intelligence initiatives.

4. CONCLUSION

The study confirmed the hypothesis that the transition to the digital economy has made significant changes in the system of using human resources, developed in the era of the industrial economy. Labour is increasingly moving away from standardization and unification, and to make management decisions, there is a need to process a large amount of information, which makes it advisable to implement HR analytics methods in human resource management. The active deployment of digital technologies leads to a reduction in manual and mechanized labour, significantly reduces the time for certain operations, increases the efficiency of decision-making, and thus significantly changes the content of labour organization elements. At the same time, there is a significant transformation of the labour market: an increasing number of the working-age population begins to move from standard employment to its non-standard forms: freelancing, home-based employment or teleworking, agency employment, etc. These forms of employment require high-quality digital competencies, developed soft skills, which will allow employees to be competitive in the new conditions.

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ROBUST HOMEOSTASIS PARAMETERIZATION - THE REGULATOR OF THE ECONOMIC SYSTEM OPERATING ACTIVITY

Mikhail Alekseev
Novosibirsk State University of Economics and Management, Russia
m.a.alekseev@nsuem.ru

Elizaveta Freydina
Novosibirsk State University of Economics and Management, Russia
e.v.frejdina@edu.nsuem.ru

Lyudmila Rudi
Novosibirsk State University of Economics and Management, Russia
l.y.rudi@edu.nsuem.ru

Tatyana Vladimirova
Siberian Transport University,
Novosibirsk State University of Economics and Management, Russia
vladimirovatat@yandex.ru

Nataliya Kravchenko
Institute of Economics and Industrial Engineering of the Siberian Branch of the RAS,
Novosibirsk State University of Economics and Management, Russia
natakravchenko20@mail.ru

Nadezda Ulanova
Novosibirsk State University of Economics and Management, Russia
n.k.ulanova@edu.nsuem.ru

ABSTRACT

An approach to the construction of robust homeostasis, an information structure that closes the homeostatic space, including the operational activities of the economic system, is described. Methodological aspects of synthesis of parameters-indicators of operational activity for construction of robust homeostasis are covered. Operating activities are represented by a set of horizontal cycles consisting of interrelated processes and financial, material and information flows that cover all the processes. Horizontal cycles determine their discreteness and are referred to as operating activity cycles that are equal in their duration to the corresponding working capital cycles. The principles of representation are formulated and the composition of indicator parameters as operational activity regulators included into robust homeostasis is presented. The formula of the information granule that makes up the robust limit is presented. It is shown that the process of forming homeostases in the context of robust management fully corresponds to the general principles of constructing information structures: mobility in time and by filling them with data carriers, the possession of each indicator parameter with a certain degree of freedom set by the robust limit.

Keywords: *Indicator parameters, Operating cycle, Parameterization, Robust homeostasis, Robust management mechanism*

1. INTRODUCTION

The development of the theory of robust open complex systems management, which include economic systems (any economic activity), is based on three hypotheses. The first hypothesis

is that the existence and development of an economic system is largely determined by its ability to adapt under the conditions of uncertainty and chaos. The second is the creation of adaptation options, leading to the changes in the system intervention into sustainable operation and the system development. And the third is that the influence of aggregate effects on the economic system is limited by damping them with a robust management mechanism. Robust management is performed in a built-up homeostatic space, with an adaptive homeostasis created initially, and a robust one at the closing stage [1, 3]. Homeostases are special information structures which parameters are accompanied by a procedure for updating data over time periods ($t \in T$) based on monitoring the dynamics of situational changes in the external and internal environment. The time factor is introduced into the notion of adaptive (*AT*) and robust (*RT*) homeostases and defines the inevitability of changes in time of quantitative and qualitative estimates of the parameters that make up their information granules. The concept of robust management mechanism is based on the disclosure of its functions, which are characteristic of configurator, an information tool designed by V. A. Lefebvre [14]. With a certain continuity to the V. Lefebvre's definition of a configurator we have defined the robust management mechanism: a configurator inscribed into the homeostatic space, synthesizing various ideas about the strategic, tactical and operational actions of the management system and making their reasonable selection to build a "floating equilibrium" that ensures the robust stability of the economic system functioning and development. "Floating equilibrium" is a temporary equilibrium state (time attractor) of a system in a built-up homeostatic space, which ensures the adaptation of the economic system to the surrounding external and internal environment, characterized by chaos and uncertainty [1, 3]. The design of a robust management mechanism begins with the creation of *AT*- homeostasis – an information structure based on indicator parameters of the state of the external environment and the economic system, and setting the limits for each of them for possible changes, in which the robust stability of the economic system is provided through flexible adaptation. The technology of *AT*- homeostasis design and development of adaptation scenarios based on it is described in the articles by M. A. Alekseyev and co-authors [1, 3]. The configurator is focused on achieving results of the economic system activity, synthesized into an information structure –*RT*- homeostasis. The numerical values should stay within the boundaries of the robust limits, as a certain reasonable norm of changes in indicators that do not cause lossesin the system efficiency thanks to preventive adaptation options. The management in the resulting homeostatic space is focused on operating activities, which represent a complete set of interrelated processes for converting input resources into products (or services), the implementation of which requires investment of certain funds. Indicators that characterize the results of operating activities can be decomposed into those that are determined directly on the basis of measuring the results of a processes set (basic) and those that are calculated based on them. At construction of RT homeostasis priority is given to indicators of operational activity, defined directly by measurement of results of functioning of a complex of processes (basic) and calculated, received on their basis [16]. The task of the article is to determine the composition of indicator parameters with an understandable meaning of their values (numbers), choosing them from a set of indicators that characterize the financial viability of the economic system and to digitize the information structure –*RT*-homeostasis.

2. KEY ASPECTS OF THE SYNTHESIS OF INDICATORS PARAMETERS OF OPERATIONAL ACTIVITY IN THE SPACE OF ROBUST HOMEOSTASIS

Robust homeostasis, as the information structure of the robust management mechanism, closes the formed homeostatic digitized space and acts as a regulator of output (endogenous) parameters of the economic system activity by introducing robust limits for each parameter and forming feedback. Robust management is primarily focused on operational activities as the basic level of finished products manufacturing, which is performed through a chain of

interrelated processes: procurement, technological, servicing, auxiliary and managerial. The implementation of the basic principle of adaptation in the context of robust management is inreaching the system's floating equilibrium (a certain time attractor) trajectory, in which its robust stability is preserved. In accordance with the principle of Stafford Beer: "the criterion of an enterprise's performance is determined not by one single variable, but by a certain set of variables with the help of which the management determines the goals of the enterprise." Based on the generalised approaches to management parametric assessment, the principle of parametric research is formulated, which consists of the following. Parameters that characterize the efficiency and quality of management are formed by two subsets – management results and characteristics of the management organization. The first subset allows us to make a conclusion about the viability of the organization as a whole, about the efficiency of its operating activities and about its position in the external environment. The second subset of indicators is called "parameters of the management organization". These include: the capacity for knowledge and skill level demonstrated through the implemented management model, the rationality of the organizational structure, efficient use of human resources, the level of informatization and computerization, and the costs of management system maintenance. Finding dependencies between the selected sets of parameters establishing the influence of the management organization on the efficiency growth of economic systems (firms) is a separate and distinct issue of a parametric study of the economic system management. An important aspect of robust homeostasis parameterization is to fix the conditions under which the system under study functions, namely:

1. general parameters – production capacity and turnover, number of personnel, cost of fixed assets;
2. stage of the organization's life cycle.

These conditions, according to the economy of scale and organization life cycle laws, determine the space and level of action of the economic system, and, in this regard, the opportunities and limitations in achieving certain indicators and properties of the system's functioning. The relationship between the parameters of the selected groups in the form of a conceptual model is shown in Figure 1.

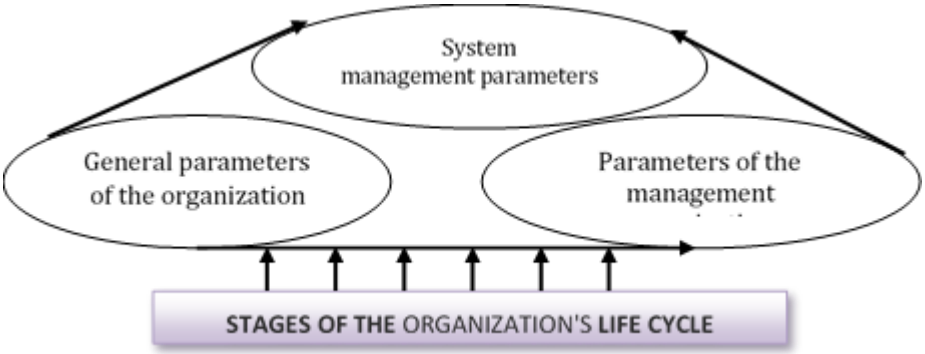


Figure 1: Conceptual model of the parametric research of economic system management

General parameters of an organization are conservative values that vary discretely depending on the organization's life cycle. Therefore, henceforth we accept the hypothesis that parameterization of robust homeostasis is carried out in some given physical and temporal space, bounded by general parameters. From the conceptual model shown on Fig. 1 it is clear that system parameters as management results are influenced by a variety of internal factors (management system structure) and the intensity of economic system development. Therefore, the *RT*-homeostasis adjustment in conjunction with the system adaptation to complex reality

becomes a regulatory function of management activities for a certain period of time. The following rules introduced in the parameterization of *RT*-homeostasis should be considered. *First*, priority is given to indicators expressed not by coefficients, but by directly measured values, which is reflected in the operating plans, clearly perceived by operational managers. The validity of this approach is also determined by a well-known feature of the numerical ratio of quantities: there are five possible combinations of the numerator and denominator values to increase their ratio, three combinations to decrease them, and in one case the ratio remains the same [16]. For example, both revenue and cost are reducing in the same proportion, but the profitability of the main activity remains unchanged and does not serve as a fact that determines the problem situation. *Second*, as any economic object is an ordered system and its activities are set by the plan based on the optimal balance of all kinds of resources on the periods of time, eventually the underlying attractor of equilibrium or asymptotically stable state of the managed system is built up. Experience has shown that when implementing a monthly plan, as part of an annual plan, a procedure for correcting the plan is introduced on the second or third day, the first aim is to try to bring it closer to the original attractor, and if it fails, then the best solution is sought in the current situation. In the latter case, the modified plan is developed. In essence, the system switches to a floating equilibrium built in the operational mode. With robust management, the planned manoeuvrability of the system is developed, i.e. adaptive actions that reduce or eliminate the loss of its efficiency. Based on the above, the robust limit for indicator parameters will be determined by the expression:

$$X_{pl} - \alpha\sigma_x \le X_{\mathrm{i}} \le X_{pl} + \alpha\sigma_x \qquad (1)$$

where X_{pl} – the planned value of the indicator parameter; σ_x – the root-mean-square deviation of the controlled variable X_i; *a* –the coefficient of compression of the variable spread X_i, *a <1*.

3. JUSTIFICATION OF INDICATOR PARAMETERS FOR THE ROBUST HOMEOSTASIS FORMATION

To assess the economic efficiency of any business entity, a multi-stage or multi-level framework of indicators based on the theory of financial analysis and accounting has been created. To guide the operating manager in the created complex framework of indicators, we need vectors that permeate the created arrays of indicators and collect data that should evaluate the performance of the system at a particular level of management. As such vectors, the goals of the economic system and indicators that characterize the fulfilment of the goals are taken to justify the parameters of *RT*- homeostasis. The goals of the economic system aimed at increasing competitiveness and its market attractiveness, focused on achieving the following results, are considered as the key goals:

1) commercial efficiency;
2) operational performance efficiency;
3) financial viability;
4) availability of resources and maximum use of them.

The set goals determine what is achieved in the process of activity, as well as the tasks and functions for their implementation. It should be noted that the selected goals are in accordance with the goals which the balanced scorecard (*BSC*) developed by Robert S. Kaplan and David P. Norton is focused on [12]. So, according to BSC: customer perspective – commercial efficiency, internal business perspective – operational efficiency, financial perspective – financial viability, innovation and learning perspective – availability of resources and their

maximum use. To achieve the results it is necessary to develop a set of calendar plans, starting from strategic planning and ending with operational planning for all types of activities. The developed mechanism of robust management is focused on operational activities. The choice of operational activity indicators parameters from the position of its robust stability and introducing them into *RT* -homeostasis is based on the following provisions:

- *first,* defining the operating space;
- *second,* the provision of a rationale for the composition of indicator parameters from a set of indicators for evaluating the functioning of the economic system, the meaning of the values of which is perceived by managers, direct performers of operational processes;
- *third,* setting up the limits through information granules, within which changes in the indicator values occur without violating the robust stability by manoeuvring planned options for adapting operational activities at the stages of strategic and tactical planning;.

The space of operating activities is traditionally determined by the duration of the cash turnover cycle, which is calculated using several options:

- the complex of processes from "the moment the money was paid by the consumer of the finished products to the moment it was received" is referred to as the operating cycle [18, p. 35];
- the cycle of the cash circulation, which begins "with placing an order for raw materials to receiving customers' money for finished products" is referred to as the conversion cycle or working capital cycle" [4, c. 19];
- the number of days required to turn the received inventory resources into finished products and accounts receivable into cash is called the operating cycle (the process of placing an order for raw materials and its delivery to the manufacturer is excluded) [4, c. 17].

It is obvious that in both versions of the operating activity assessment, the object is the same. In the converted cycle the crediting period of the purchasing process is indentified (placing an order for raw resources, paying for the order). Operating activity management begins with the processes of ordering and purchasing (which is considered to be one of the main processes for product quality management) and ends with the payment of consumers for the delivered finished products, which determines the operating space. To avoid an ambiguous definition of the financial chain of operating activities for products manufacturing, we will focus on the concept of working capital cycle, which defines the space of operating activities. One of the options to improve the operating efficiency of the production system is a comprehensive approach to managing the cycle of activities described by the model of money-goods-money for the result *(M– G– M').* This approach ensures links to financial, operational, provisional, servicing, auxiliary and managerial processes. The beginning of the promotion of an integrated approach to operational management has been underway since the 70s of the last century. The concept formulated by A. Feigenbaum [8], presents a new for that time methodological aspect: management of continuous working (operational) processes "require what could be called the horizontal (buyer-buyer) completion of managerial thinking". The first buyer is the manufacturer of the finished product, and the second buyer is the direct buyer of the finished product. Horizontal cycle by A. Feigenbaum starts from ordering resources from the supplier, then paying its cost, delivering to the "input" of the system (logistics), converting resources to get the finished product (production cycles), selling, shipping the finished product (logistics), and receiving money (the final stage of the financial and material flow) for the completed result. For the company, real money is generated within the framework of the horizontal operating cycle *(M - G - M')*. The cycle model *(M - G - M')* can be represented as a certain ring structure: the cycle is formally closed by comparing *M and M'*. One of the instruments, implementing this approach is the Japanese Kaizen system, the main tools of which are: process-based

management with individual responsibility (Fig. 2), visible management, cross-functional management that eliminates the narrowness of the decision-making horizon due to departmentization and territoriality, and the Demining cycle. In general, governance in the Kaizen system follows the concept of "gradual improvement affecting everyone"[13, p. 62]. Each operating process of the horizontal operating cycle is material, and is a carrier of products (*P*), has a cost (*M*), is estimated by the time of execution (t), is characterized by fixing information about it (*I*), its formula being (*PMIt*). A product is any result of a transformative process action. The formula prescribes that the management of the horizontal cycle should be based on a systematic consideration of the interconnections between material, financial and information flows that go through the entire technological and logistics chains, equipped with technical resources. The operating activity of an economic system is cyclical and is represented by a set of synthesized "horizontal" cycles, which we refer to as operating activity cycles (*OAC*). The duration of *OAC* coincides with the working capital cycle (*WCC)*. Let us select the indicators that determine the achievement of the set goals. *The commercial goals* of the economic system are to achieve optimal compliance of the product volume, range and quality with the market requirements. The main parameter that determines the result of commercial activity should include: productivity of commercial activities (*PCA)* – the number, range and quality of products which the society needs. In practice, the *PCA* indicator is defined as the ratio of products sold to the volume of their production. Management of the parameters such as the quantity of goods produced, their range and quality is carried out in conjunction with the structure and dynamics of their demand, the product lifecycle on the market, the duration of *OAC*, which includes the production cycle and supply chains of raw materials and finished products, financial and information processes that serve the constructed operating system. *The volume of production of total finished products (Production volume, PV)* is taken as the basic value for inclusion into *RT*- homeostasis, which does not exclude its differentiation by product groups, for example, identification of product groups "A", "B" and "C", and *revenue from the sale of finished products (S)*. *Operating performance efficiency* is defined as an indicator that determines the conversion of production costs into revenue. To determine the operational performance of the company, *P. Drucker* formulated the concept of activity-based costing [6]. The main message of this management accounting concept is that product manufacturing is a complete set of interrelated processes; the implementation of each of them will require from the company the investment of certain funds. According to this concept, managers of the business should see the overall interconnectedness of the technological, financial, servicing and providing processes that form the operating system in order to manage costs. Let us highlight two factors that oblige businesses to manage their costs:

- "for the market, the only thing that matters is the economic reality – the cost of the entire process, but not who owns what" [6, p. 16];
- switching from cost-lead pricing to price - lead costing, when the price the customer is willing to pay determines the acceptable costs of the supplier and forces the company to organize cost accounting for the operating system (4C marketing concept).

To justify the measurement of the operational performance (indicator parameters), we will consider the following factors. The results of cost management are reflected in the cost of finished products, the amount most tracked by operational managers. Therefore, *the operating cost of finished products (OC)* is considered as a homeostatic parameter of operating activity, which is equal to the ratio of the total cost of all processes to the production volume of finished products within *the managed OAC*. The robust limit of acceptable changes in operating cost will depend on the expected profit, the price of raw materials for production, and fixed costs. When calculating the operating cost of finished products, there arises the issue of the cost of each process in accordance with the structural model of its management (Fig. 2).

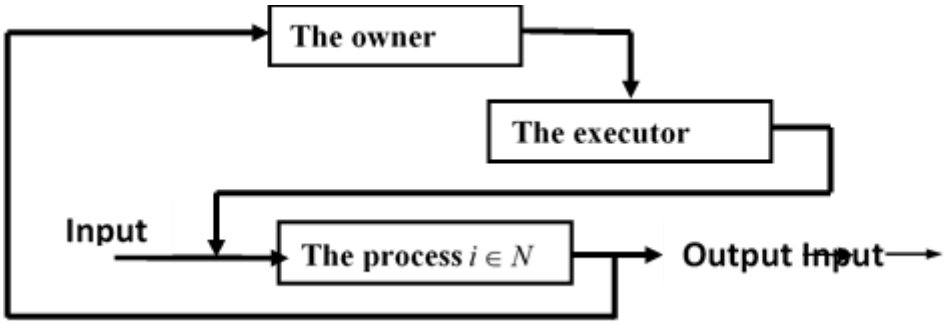


Figure 2: Structural model of the process management

The owner of the process is defined as the type of activity that sets out the process's action plan and operational management. Performers are employees implementing, correcting and restoring the process. In management accounting, the transition to information technology will allow calculating the operating cost for each OAC_i, $i \in N$ and its duration. The use of this information allows us to differentiate the $OAC_i, i \in N$ by the value of the production cost, by the market demand, to estimate the correlation between the operating cost and such a parameter as the duration of *OAC*, which are directly correlated. It is a fact that operating cost and duration of the $OAC_i, i \in N$ are variables. Each process of the complex operational chain of production is measured by the result and duration. Both the result and the duration of any process belong to the category of random variables [9,11]. Numerous scientific developments in the sphere of technological processes and material and monetary resource management have been made to overcome the variability of the operational process results and bring them into a "sustainable mode". In all cases, to ensure the stability of the processes it is required to set the limits that determine the range of permissible fluctuations of the measured value, which do not result in losses to the company. A similar approach applies to the management of the operating cycle time, (*OCT*). We introduce the *OCT* parameter into robust homeostasis when setting the limits of acceptable deviation related to its planned value for product groups or for the aggregate product as a whole. The financial viability of operating activities is estimated by the indicators included into the "business activity" group [7, p. 506-507]. The parameter that affects the efficiency of the capital turnover, altering its duration, primarily refers to the amount of accounts receivable (AR), which increases along with the increase of its repayment duration and taking into account the time value of money. There is a direct relationship between these indicators. Marketing, sales departments, logistics (timely and safe delivery) and finance departments are in charge of the amount of AR. The damage from accounts receivable to the business economy is well understood by managers and the introduction of the amount of accounts receivable into the *RT*-homeostasis for a $t \in T$ periodwithin the robust limit can be considered as a regulator of relations with consumers in order to maintain the revenue at the required level. The assessment of the accounts receivable for the $t \in T$ periodis based on the detailed information about the amount and time of debt for each consumer for the operational management of finished product deliveries. The lack of required funds resulting from the accumulation of the accounts receivable is compensated by the accounts payable (*AP*). The company's creditors are suppliers of goods, works, services, landlords and employees, the budget and extra-budgetary funds, and buyers in case of advance payments for the upcoming deliveries. The structure of accounts payable comprises short-term loans, own funds, delayed payment for the supplied material resources, tax payments and wages, advance payments by consumers for the upcoming product deliveries. As a result, a certain amount of debt with a complex structure is accumulated, and its repayment is an optimization task for the financial management and within its competence.

The financial structure of a business establishes and monitors the ratio between accounts receivable and accounts payable. The *AR-AP* ratio is a constantly changing value, so its value should be closely monitored and diagnosed in a timely manner and optimization decisions on changing the structure of accounts payable and receivables should be made. Decision making is assigned to the financial or special analytical department. Based on the regulated connectivity between *AR* and *AP*, the *AR* values introduced into *RT* - homeostasis for the $t \in T$ periodshould be periodically updated. A number of publications [5, 17] consider the amount of coverage*(AC)* obtained directly from the sales revenue *(S)* and the cost of the initial resources (variable costs —costs that are transferred to the finished product in full, *VC*) as a controlling parameter of the financial stability of operating activities. It follows that the amount of coverage depends on the parameters (*S*, *VC*), which can be influenced directly by the management.
The expression for calculating the coverage amount is:

$$AC = S\text{-}VC = FC + OP, \tag{2}$$

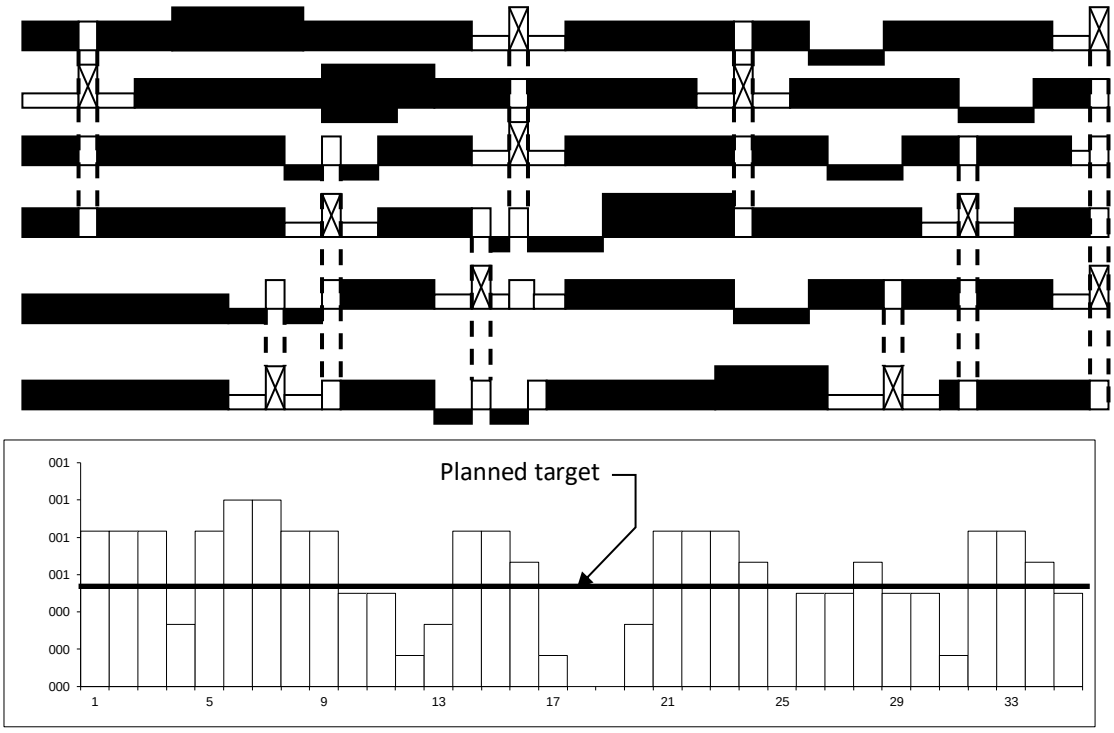
where *FC*is fixed costs, the type of costs that an enterprise incurs within *OAC* and which are accepted as costs that are typical for all production cycles of a particular product group;*OP*is operating profit.

From the expression (2), it follows that the calculation of the coverage amount allows us to determine how much money an enterprise earns by producing and selling products in order to cover fixed costs and make a profit. The variable values of the coverage amount are revenue (sales volume and product price) and variable costs, which are a function of the production volume and initial resources prices. The introduction of the amount of coverage expressed in RUB into the *RT*- homeostasis does not disclose the extent of its impact on the performance of operating activities. Therefore, for an operational management response to all components of the coverage amount, it is proposed to introduce not the amount of coverage into *RT* - homeostasis for the period $t \in T$, but the coverage ratio (AC_R), which determines the share of the coverage amount in the revenue from the sale of total products or by its product groups. The introduction of the ratio as an indicator parameter is justified by the fact that the determining value of the coverage amount – revenue is determined by the *RT* - homeostasis information granule. It is obvious that the higher the coverage ratio, the greater the increase in operating profit. The operating profit (*OP*), obtained from the results of the main activity, allows us to evaluate the effectiveness of supply and inventory management, technology, sales of finished products, logistics, marketing, and other *OAC*. The *OP* value is determined by subtracting operating overhead costs (rent payments, depreciation charges, fuel, electricity, etc.) from the gross (or trading) profit.Operating profit allows us to distance from the influence of factors such as the tax regime and interest rates on loans, the management of which is within the competence of financial services and the economic system management, and is, as stated in [5, p.26-27], an indicator that can be explained by the example of specific actions of managers and incurred expenses. An increase in the operating profit indicates that the company's revenue exceeds costs and is achieved by the management decisions, aimed, at least, at reducing variable costs, not excluding fixed costs. The consequence of these provisions is the inclusion of operating profit in a robust homeostasis.

4. THE GOAL OF "SECURING RESOURCES AND MAXIMIZING THEIR USE"

The production of any product is based on a specific technology, implemented by a complex of interconnected equipment and various machinery, usually operating in an automated mode. Each technical element of cyclical and conveyor technologies is periodically stopped for maintenance according to the standards of planned preventive repairs (*PPR*).

The discreteness of the equipment operation determines the variability of the total production capacity. If we adhere strictly to the production standards and the time of equipment repair, established by the types of planned preventive repairs, i.e. without managing this process, we will get an operating system which is highly unstably equipped with workabletechnical resources. For example Fig. 3a presents the distribution in time of the technological equipment withdrawals from productive operation in accordance with the PPR plan and other operations causing its shutdown. Fig. 3b shows the graph, describing the total capacity of the company's operating system for the raw materials production, using six independently operating complexes [10].



Symbols: - periods between repair; - the duration of PPR;
- time to prepare for repairs; – unplanned downtime

Figure 3: A fragment of the capacity distribution of a complex of working equipment in time, built according to the PPR standards, and a graph of the total capacity (b)

From the graph in Fig. 3b it follows that without introducing a management effect into the performance of the equipment PPR, the total capacity of the working equipment is characterized by high variability regarding the planned task. The objective of the management is to evenly distribute the total capacity of the equipment put into operation, which is achieved through the flexibility of the maintenance and repair schedule and the use of backup equipment (adaptive solutions). Based on the set objectives, the solution to the problem initially stays within the limitsof the permissible change in the capacity of a complex of functional equipment with respect to the planned capacity as the average value of potential capacity per unit of time (Q_{pl}), which provides robust stability of the system regarding technical resources:

$$Q_{pl} - \alpha\sigma_Q \le Q_i \le Q_{pl} + \alpha\sigma_Q, \qquad (3)$$

where σ_Q is a standard deviation of the total performance of the equipment complex, determined when scheduling its shutdown on the *PPR* (Fig.3b); *a* isan indicator of variable spread compression, *a <1.*

The visual availability of information on the technical capacity and volume of finished products*OAC* allows us to determine the efficiency of the technical resources usage by comparing them. The introduction of the information granule into the robust homeostasis, determining the limit of permissible change in the working equipment total capacity, meets the goal of operating equipment that provides basic, robust stability of the system. Let's summarize the selected parameters-indicators - fillers of RT homeostasis of the economic system in the table, give information pellets, in which it is acceptable to change them due to the adaptive capabilities of the system, and note their balance with the parameters of the indicators of adaptive homeostasis (AT homeostasis) [1]. Output of the indicator beyond the limit of its change established for the period means in some cases that the decision is taken as a "flight from the negative", in others - "movement to the positive". The interconnection between *AT*-homeostasis and *RT*-homeostasis is executed through a specific technology of decision-making in a chain consisting of modules of strategic, tactical and operational planning and their coordination based on direct and feedback links [1,3]. Modules of the robust management mechanism are constantly being rebuilt and assembled, starting with a converged strategy developed in the scenario planning environment, with the subsequent establishment of a floating equilibrium of the economic system functioning in the digitized homeostatic space as a territory facilitating the adaption of the economic system to the conditions of uncertainty of the external and internal environment.

Indicator parameter *RT*-homeostasis	**Information granule formula**	**Indicator parameter *AT*-homeostasis**
The volume of finished products	$PV_{pl} - \alpha\sigma_{PV} \le PV_{\text{i}} \le PV_{pl} + \alpha\sigma_{PV}$	Volume of production, capacity and market share with expected and acceptable variability
Revenue from finished products sales	$S_{pl} - \alpha\sigma_S \le S_{\text{i}} \le S_{pl} + \alpha\sigma_S$	The price of finished products capacity and market share with the expected variability
Operating cost of production	$OC_{pl} - \alpha\sigma_{OC} \le OC_{\text{i}} \le OC_{pl} + \alpha\sigma_{OC}$	Price of finished products and material and technical resources with expected variability, product quality
The duration of *OAC*	$OCT_{pl} - \alpha\sigma_{OCT} \le OCT_{\text{i}} \le OCT_{pl} + \alpha\sigma_{OCT}$	The volume of production and the amount of investment with expected variability
Accounts receivable	$AR_{пл} - \alpha\sigma_{AR} \le AR_{\text{i}} \le AR_{пл} + \alpha\sigma_{AR}$	Market share and capacity with expected variability
The amount of coverage	$AC_{pl} - \alpha\sigma_{AC} \le AC_{\text{i}} \le AC_{pl} + \alpha\sigma_{AC}$	Price of finished products and material and technical resources with expected variability
Operating profit	$\text{OPr}_{pl} - \alpha\sigma_{\text{OPr}} \le \text{OPr}_{\text{i}} \le \text{OPr}_{pl} + \alpha\sigma_{\text{OPr}}$	Net profit with acceptable variability
The working capacity of technical resources	$Q_{pl} - \alpha\sigma_Q \le Q_{\text{i}} \le Q_{pl} + \alpha\sigma_Q$	Volume of production, capacity and market share with acceptable variability

Table 1: Formula of the information granule of RT-homeostasis indicator parameters and their balance with AT-homeostasis

Parameters-indicators of operating activity, a variant of which is shown in the table, are associated with certain direct and inverse relationships, and each of them has a different impact on the operating profit. The calculated limits of their permissible change form a certain numerical space determined through the methods of mathematical statistics, optimization, and analytical models. Definition of limits of admissible changes of parameters-indicators at which value the system is capable to adaptation and robustness, acts as a new task of financial management. It should be noted that the created homeostases in robust management are considered as special information structures, the formation of which fully corresponds to the general principles of the information structures designing:

1) *fixing*, i.e. determining the data carrier, in case of economic system management – these are parameters-indicators;
2) 2*)displacement* of competing parameters, which may occur periodically depending on the strategic orientation and status of the economic system (continuation of the fixation process);
3) *sliding*, when each parameter has internal degrees of freedom, which in the introduced homeostases are determined by the limit of permissible fluctuations and under which the adaptation of the economic system is adjusted;
4) *space*– the ability of an information structure to interact with the "external world" by generating some space, i.e., judging by the definition of homeostasis, is inherent in the definition of its construction and taken as a basis from the fundamental work of academician I. Prangishvili [15, p. 113]
5) *self-similarity*– the ability to multiply, whichdetermines the development dynamics of both the information structure and the synthesis of new structures – a set of homeostases for the stages of the economic system life cycle and functional subsystems.

5. CONCLUSION

The presentation of the mechanism of robust control as a configurator, inscribed in the homeostatic space, synthesizing knowledge of strategic, tactical and operational actions of the control system and producing their reasonable selection for the construction of "floating equilibrium" – a temporary attractor of operational activity, justified approach to its design as an information structure that closes the homeostatic space of the economic system. Operational activity carried out in the homeostatic space is reduced to the connectivity of technological, providing, servicing, auxiliary and managerial processes, combining them into a horizontal cycle (*M - G - M'*) through financial, material and information flows, with a duration equal to the cycle of capital turnover. In accordance with the principle that the criterion of the economic system activity is determined not by one variable, but by a set of them, characterizing the results of key objectives, the parameters-indicators of operational activity, which are part of the information structure of RT homeostasis, are justified. Priority is given to the indicators defined directly by measuring the results of operating activity. Each indicator of RT homeostasis is represented by the formula of its information granule, which determines the internal degrees of freedom, which are limited by the limits of permissible fluctuations and for which the adaptation of the economic system is adjusted. Output of the parameter's value beyond the limits is a challenge to making decisions about new maneuvering of the economic system in turbulent and chaotic environment.

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DIGITAL BANK CONCEPT

Yuriy Shvetsov
Novosibirsk State University of Economics and Management, Russia
yu.shvetsov@mail.ru

Galina Tarasova
Novosibirsk State University of Economics and Management, Russia
n.g.protas@nsuem.ru

Vladimir Balikoev
Novosibirsk State University of Economics and Management, Russia
balikoev1941@yandex.ru

Alexandra Shmyreva
Novosibirsk State University of Economics and Management, Russia
a.i.shmyreva@edu.nsuem.ru

ABSTRACT
The article examines the basic trends and the content of transition period in the development of the banking services, which undergo substantial changes in the conditions of digital economy ecosystem formation. The need for the essential adjustments in the theory of banking is justified, the promising trends in the shift of lending institutions into the cyberspace are indicated, a characteristic of the new bank products, emerging within the decentralized management system, is given. The most important aspects of the design of a digital bank model and the key elements of its entrepreneurial activity strategy are revealed.
Keywords: *Artificial intelligence, Banks, Blockchain, Digital assets, Digital economy, Cryptocurrency, Electronic banking, Lending, Loans, Virtual assistants*

1. INTRODUCTION

The rapid emergence and development of the digital economy in the world makes it imperative for all market participants to make the necessary adjustments in their activities. Naturally, commercial banks, being one of the most active participants in the formation of the society's material basis, have also been involved into this effort. Banking in its traditional sense is a thing of the past. The lending institution's functions of a financial intermediary, providing a link between the population's monetary savings and business, and regulating the volume and structure of funds in various segments of the stock, currency and capital markets, have become an anachronism and prevent a key commercial institution from adapting to the changing conditions of economics, which is rapidly shifting into the virtual space. Cash turnover, extensive branch networks, in-house services with an emphasis on the human factor, banking products that involve face-to-face communication with the borrower, a huge number of employees, monitoring all the stages of the loan history from its issuing to repayment, are in sharp contradiction with the requirements of the emerging digital society, the key objectives of which are the swiftness and mobility of transactions, the substitution of labour with artificial intelligence and the electronic format of financial assets. A new economic era is coming, the priority of which is the highest quality of banking services, based on two main pillars, the first of which is the physical distance of customers from the lending institution and their non-contact business cooperation with each other, and the second is the complex robotization of banks based on unattended technologies.

2. FINANCIAL SERVICES

Under the present conditions, banks tend to move away from the traditional scheme of managing money resources and try to build their financial services on a decentralized management system. Its main types are the following.

2.1. Electronic banking

As digital technologies are confidently entering the lives of people all over the world, almost the entire range of banking services is shifting into the internet, and credit transactions and payments are made in the electronic banking mode. The advantages of the latter over the traditional banking are undeniable, since there is a multiple reduction in the cost of transactions (according to analysts' estimates from 2 to 16 times) and operating costs for the maintenance of offices and equipment, security, payment of wages to employees, collection, etc. Online banking allows to maximize the customer base and at the same time eradicate queues, significantly reduce the cost of purchasing and renting premises, communications, hardware and software. In these conditions, an extensive branch network and a large number of ATMs for lending institutions lose its relevance, and this is also a strong argument in favour of the emerging contemporary ecosystem. The profitability of a lending institution reaches a huge multiplier effect also due to a dramatic reduction in the cost of services while increasing the volume of its sales. Comfortable service technologies significantly increase the demand for them, the level of users' trust to the bank, and thus have a great impact on increasing the sales of other commercial bank products: loans, credit cards, insurance policies, etc. The main cost of the bank, which activities are reoriented to adapt to new economic conditions, is investment into the development of software for the smooth functioning of digital products and its continuous modernization. Leading lending institutions, such as Sberbank, establish special divisions in their structure that are exclusively engaged in the research of IT services and electronic technologies of the future. This allows leading banks, despite significant expenditures on innovation, to increase the growth rate of virtual business, expand the range of digital services for customers and stay ahead of the competition, allowing them to control the market situation in their favour. Commercial banks are heterogeneous in the level of internet banking service and there are three categories: the outsiders, which are satisfied with a minimum set of electronic services (information about the size of funds and their movement on bank accounts); those in the middle, which allow customers to make payments and transfers in roubles, to pay utility expenditures, to support the online activities of internet service providers; and the leaders, who created the necessary software products enabling their customers to repay outstanding loans and taxes, manage personal finance through the expenses categorisation module, to create a set of functions for establishing limits on card transactions, transfer money between cards via the phones, social media account or e-mail. The latter have great future, since such credit institutions have already passed the period of "digitization" of traditional banking operations and are working closely on creating a comprehensive virtual banking terminal, operated by AI. An important advantage of the online service is that the access to it is free for customers, the vast majority of operations are inexpensive, and the rates are even lower than when visiting the bank's offices. This service allows bank customers to have round-the-clock access to their accounts, constantly monitor the movement of funds and make necessary payments promptly. All of them are carried out within one banking day and have multi-level protection.

2.2. Remote biometric identification system

The EU Directive on payment services PSD2 (Revised Directive on Payment Services) has helped accelerate the development of internet banking, which has dramatically reduced the cost of payment services for the end user. It initiated the development of two types of services:

intermediaries for making payments between the consumer and the source of financing, and account information service providers (AISP), accumulating information about the client's existing accounts in all banks. Providers of customer account management services are banks that are required to provide, with their customers consent, all available information to financial intermediaries without entering into a special agreement. As a result of this innovation, payment organizations that do not have the status of a lending institution have free access to all information about transactions of the bank clients. The latter no longer monopolise this market, now they have only the function of data storage and managing the customers' accounts. The changes in the economic environment bring to the fore the problem of users recognition within KYC/AML ("know your customer"/"anti money laundering") policy. To solve it a remote biometric authentication should be established to increase the security of customer data, and simplify their interaction with the bank. The project implementation plan for the development of a National biometric platform was approved in July 2017, according to which a unified state system was created; it includes such methods of users' recognition as by fingerprints, face, voice, and movement. The information stored in the unified system of identification and authentication of customer data allows to increase the customers' comfort and security of satisfying their financial needs. From now on, the user does not need to duplicate their actions in several lending institutions: they just need to contact one bank to be able to remotely open accounts and receive money services in any other. And which is more, progress in the digital sphere forgers ahead. Today, you can solve the problem of identification in various trading operations almost free of charge by using blockchain through peer-to-peer technologies (P2P), and tomorrow there will probably be other equally attractive opportunities in other areas of commerce.

2.3. Generating interfaces for close interaction of cryptocurrencies with both traditional and emerging financial markets

For example, Ripple Labs through the Ripple payment network, allows banks to transfer funds and perform currency exchange directly without intermediaries, develops its own platform and language for smart contracts — Codius, and provides funding through the innovative fund of the Spanish Bank Bankinter in Coinfieine so that users are able to buy and sell bitcoins directly, bypassing exchanges. Kraken cryptocurrency exchange in close cooperation with partner banks provides its clients with the necessary financial services using bitcoin. Tag Exchange launched the first bitcoin swap exchange, through which investors buy contracts in bitcoin on the exchange's online trading platforms. Buttercoin, a company that specializes in financial analysis, requires its clients to pay in bitcoins.

2.4. Crowdfunding

Earlier a centralized service, eg. Kickstarter, Indiegogo, was required for this funding model, but with the advent of crowdfunding platforms based on blockchain technology, the need for an intermediary is completely eliminated. Swarm is pioneer of startups in the field of digital currencies, the company, which created its own Swarmcoin cryptocurrency, and provides an opportunity for investors to receive dividends from the implemented startups. The Lighthouse mobile app allows you to make financial investments and enter into crowdfunding contracts using bitcoin wallets directly. In Japan, bitFlyer, bitcoin crowdfunding site was created.

2.5. Robotic services and Robo-advising services

High-frequency trading, born in the late 1990s, has now received a second life due to a significant reduction of securities trading deals, now completed within milliseconds and microseconds, which requires a powerful and mobile software and network support. Artificial intelligence is also involved into the complex process of optimizing the banks' investment

portfolio and managing the trust capital of their clients. Robot consultants allow you to sharply reduce the high commission rates for providing this type of service. Russian lending institutions are trying to keep up with American banks equipped with cutting-edge Wealthfront and Betterment robot consultants. Many of them already use the "financial autopilot" developed by the FinEx investment company.

3. CONCLUSION

Business cooperation between IT companies and banks creates a new economy and the core of it being digital technology, which makes all types of traditional credit activities outdated and requires a more complex intellectual content of emerging business projects. Today's business activities are impossible without a powerful computer and proper software. Digitization of banking operations, which involves their execution in cryptocurrency, i.e. virtual money using computers and the internet. Leading lending institutions clearly realized that the era of cryptocurrency ubiquity is approaching and began to actively work in this direction, making settlements in bitcoin, Ethereum, etc. and creating their own digital currency. So far, this work is being carried out in a test mode, but there is no doubt that in the future it will gain the necessary momentum and become a priority for banks, especially since the next generation of computers, quantum computers, is on the way. Banks are trying to carry out all their operational activities within the framework of financial processing, which is a digital processing of the entire database and comprehensive automation of the entire range of services provided to clients. An important role in this system is assigned to the API (Application Programming Interface) technology – a set of procedures and functions of applications or operating system, used in external software products. All software components interact with each other via the API based on a hierarchy: when transmitting data, each subsequent level uses the functionality of the previous level, which allows banks to bring their personal product to the client. Each financial product of a modern lending institution is an automatically configurable component with a personal code that allows the user to upload it to their application. The availability of banking technologies for any user in combination with cloud services, the Big data information processing mechanism, and the API platform will lead to the integration of the internet space, mobile applications, and social networks in the future. A striking example of this trend is the Deutsche Bank Autobahn app store. Any client of the bank can freely choose a suitable banking product with a set of financial management tools. So in the monetary sphere, an extensive structure of value exchange is developing. Within this structure banks use constantly improving financial technology developed both in-house and by IT companies, inherent in the digital environment, and acquire an important status of its coordinator, which is more than the status of a money broker, characteristic of lending institutions in the model of traditional market structure. Developing the concept of a digital bank is an extremely complex task, which involves considering many factors that affect the efficiency of its financial activities when moving into the virtual space. It is advisable for a lending institution to focus on the following main aspects of digital modelling:

- development of ecosystems around online platforms, including financial services;
- a complex of banking operations using artificial intelligence in the provision of services and their shift into the internet space, which have the greatest commercial potential and the highest level of profitability as an ecosystem of digital banking;
- strategy for the development of banking products based on cryptocurrency payments;
- structure of the loan portfolio with its division into traditional and digital operations, as well as payments based on fiat currencies and cryptocurrency;
- a system of managed demurrage of currency and cryptocurrency, which allows it to be automatically "reset", i.e. periodically redistribute funds between the bank network nodes and encourage holders of financial funds to spend them within a specified period of time;

- methodology for optimizing electronic financial flows between the bank and its clients on the internet banking platform in accordance with its algorithm of development;
- mechanism for integrating internet banking with social networks;
- financial processing model as an integrated system of bank interaction with clients, in which any financial product becomes an automatically configurable component having its own personal code, uploaded by the user to the application;
- system of risk insurance of electronic payments, turnover of virtual derivatives, operations with cryptocurrencies and digital property;
- the model of financing startups through crowdfunding;
- algorithm for high-frequency trading, which allows the bank to obtain arbitrage profit by spotting the slightest price fluctuations in financial markets;
- functioning mechanism of the system of payment initiation services (PISP) and financial information aggregation services (AISP) and their interaction on creating clients and their transactions database (storage);
- built-in video support system for online and mobile terminals in real time to create personalized interactive services;
- organizational system for reliable remote authentication of bank clients protecting their personal data and a set of special office applications for distributed work – a software providing users with the entire set of banking services " blockchain as a service»;
- the bank's digital asset liquidity mechanism and its reserve system;
- a method, establishing a framework for collective security of a bank and large companies and state organizations based on cloud technologies in the form of a centralized archive with dossiers on the most aggressive criminals and suspicious individuals to prevent cybernetic excesses.

Those banks that manage to implement all the above-mentioned adaptations to the realities of the digital economy, rather than trying to act selectively, avoiding the inevitable difficulties, will create the most stable and free from weaknesses platform for their business.

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INFORMATION AS AN OBJECT OF CIVIL RIGHTS

Elena Kholmova
Novosibirsk State University of Economics and Management, Russia
e.g.holmova@edu.nsuem.ru

ABSTRACT
The article raises questions about the legal nature of information, its place among the objects of civil rights, including taking into account the legislation of various States; and the feasibility of returning to Art. 128 of the civil code of the mention of information as a full-fledged object, as well as offers solutions to the issues.
Keywords: *Information, Object of law*

1. INTRODUCTION

Information occupies an increasingly significant place in the life of society in General and in business in particular, and its significance became even more obvious during the pandemic, when physical contacts between business partners were reduced to a minimum. This fact makes us think about the legal nature of information, whether it is possible to establish any rights to it, and therefore whether it is included in the system of objects of rights. This article offers conclusions related primarily to Russian law, but the applied methods of comparative law, as well as the generality of trends that have caused interest in this topic, allow us to hope that the article will be useful for readers from different countries of the world. This research only concerns the private legal side of the issue, since public law in this case is less interesting for business. In addition, the volume of work does not allow us to consider the criminal and administrative components of the issue.

2. ABOUT THE LEGAL NATURE OF INFORMATION

2.1. History of the issue

The list of objects of rights, it would seem, is of a deep doctrinal nature and should not be subject to frequent changes. But article 128 of the Civil Code of the Russian Federation containing such a list was not lucky. On October 1, 2013, the Federal Law No. 142-FZ of July 2, 2013, the penultimate version of Art. 128 of the Civil Code of the Russian Federation, which was designed to bring a glance at the objects of rights into a single coherent system. A harmonious system did not work, and a new version of the same article was introduced this year. And even earlier, back in 2006, an amazing event took place in Russian legislation that did not give a serious resonance in the scientific literature, but which had and has influenced doctrinal positions in one of the most important areas of both civil law and legal theory. We are talking about reducing the list of civil rights - the exclusion of information from it. Until January 1, 2008, information was indicated in Article 128 of the Civil Code of the Russian Federation as one of the objects of civil rights. But from the indicated date by the law of December 18, 2006 No. 231-ФЗ the word “information” was excluded from this article. In the current edition of Art. 128 of the Civil Code of the Russian Federation and in the wording that came into force on October 1, 2019, information is not mentioned. Given that the list of objects in this article was and is exhaustive, it should be concluded that, in accordance with the current version of the Civil Code of the Russian Federation, information is not subject to civil law. The exhaustive nature of the list of objects of civil rights is evidenced by the absence of an indication of the possibility of other objects. The presence of a clause on “other property” does not change the situation, since this “other” must be property in order to be an object of law. In other words, “other property” is in the circle outlined by the content of Art. 128 of the Civil Code of the Russian Federation, and in no way goes beyond it.

By the way, in foreign legislation such an exhaustive list is not always found. So, German civil law is limited to the mention of individual objects, not reducing them into a single system.

2.2. Information features

Considering information as a possible (or impossible) object of rights, it is necessary to proceed, firstly, from the importance of information for society, and secondly, their characteristics of its receipt, transmission and dissemination. The first (significance) will be discussed later. Features of receiving, transmitting and disseminating information, i.e. in fact - its turnover is reduced to the following:

- information can be obtained both from third parties, and independently, without any participation;
- the transfer of information in most cases does not mean "loss" of this information by the person who transmitted it;
- the dissemination of information is an irreversible phenomenon; if information is disseminated, then in the future its “removal” becomes impossible in fact and legally.

The foregoing allows us to conclude that the circulation of information differs significantly in the circulation of things as traditional objects of civil rights. In modern conditions, information is the most important factor in the life of the whole society, each person and any subject of law. Doing business outside of information without receiving and transmitting information is impossible. And the legal environment of business, of course, includes the regulation of relations regarding information. The legislation on information not only continues to exist, but is constantly being improved and supplemented, and the regulation of relations related to information is not at all limited to the public law sphere. A dilemma has arisen in Russian legislation: on the one hand, based on a literal interpretation of the law (namely, Article 128 of the Civil Code of the Russian Federation), we must conclude that such an object as information does not exist at all, on the other hand, there is a relationship regarding information relate to the sphere of legal regulation and are regulated, inter alia, by civil law. It is necessary to mention that in accordance with Art. 3 of the Civil Code of the Russian Federation, the norms of civil law contained in other laws must comply with the Civil Code.

2.3. Information as an object of rights

To resolve the dilemma, it is necessary to turn to the very concept of the object of civil rights. The appeal to the concept formulated by V. Lapach [2] seems to be the most correct: it is necessary to distinguish two levels of objects of civil rights. The first level, or objects of the first order is the actions of the subjects of law, it is precisely on them that the legal regulation as a whole and the private law regulation are directed. Nothing but the actions of the subjects can be resolved. Here, on the first level, there is no place not only information, but also the most traditional objects - things. The second level, or objects of the second order are those fragments of reality that the actions of the subjects are directed to. The law cannot regulate external fragments of reality: a land plot, a reputation, a picture, a banknote, a poem remain all the same, regardless of changing legal norms. The law can regulate the behavior of people relating to a particular fragment of reality, and regulation will inevitably be different, depending on whether the behavior is directed to a land plot, a bill or a poem. It is the objects of the second order listed in Art. 128 of the Civil Code of the Russian Federation. At the same time, there are reasonable doubts that this listing is complete and exhaustive, doubts related not only to the exclusion of information from the article. In this work, we will not consider the problem of the absence of virtual objects in the legislatively established list of objects of civil rights that arose more than ten years ago. This is a topic for a separate study. It seems necessary only one remark: it is likely that virtual objects are a kind of information.

Abstracting for a while from the content of Art. 128 of the Civil Code of the Russian Federation, let's try to find the answer to the question of whether in theory information can be classified as objects of law in general and civil law in particular. Of course, information in itself is not an action, so it cannot relate to first-order objects. But the law regulates the behavior of people aimed at information (transmission of information, its protection, etc.), in other words, it regulates relations regarding information, and regulation of such relations is carried out by the norms of various branches of law, including civil law. Thus, the information should logically be attributed to the number of objects of rights - objects of the second order, which also include things, and the results of intellectual activity, and intangible benefits and much more.

3. THE IMPERFECTION OF THE LEGAL REGULATION OF INFORMATION

3.1. Meaning of the lack of information in the list of legal objects

There is clearly a bewildering disagreement in the law. Art. 5 of the Federal Law "On Information, Information Technologies and the Protection of Information" dated July 27, 2006 N 149-ФЗ states: "Information may be the subject of public, civil and other legal relations." Meanwhile, the priority of the Civil Code of the Russian Federation in the regulation of civil law relations is undeniable. Should this be understood in such a way that, in accordance with Russian law, from January 1, 2008, information can only be the subject of civil rights, but it is not? In scientific works written after 2006, it was not possible to find any satisfactory answer to this question: works devoted to information as an object of rights either ignore the fact of its exclusion from the list of objects or are generally written outdated (at the time of writing the corresponding work) legislation. So that the last statement does not look like an unfounded accusation, as an example, see the article by Bozieva Yu.G. in the collection "Successes of modern science", published in 2017 [1]; in this article, the revision of the Civil Code of more than a decade ago is analyzed as relevant.

3.2. Information as property

Of course, there are exceptions to the sad situation of inattention to the problem. So, M.A. Rozhkova, succinctly and essentially describing in the article "Information as an object of civil rights, or What needs to be changed in civil law" the situation with the presence / absence of information among objects of civil rights, gives its own answer regarding the ignoring by researchers of the fact of the lack of information in the list of objects right [5]. In her opinion, neither information, nor virtual objects in this list are simply needed - all together. Presumably, they can be placed in a mysterious "other property" that remains in Article 128 of the Civil Code of the Russian Federation beyond things, cashless money, uncertified securities and property rights, based on the fact that they all have economic value. We have to talk specifically about the category of "other property", since in no other sense the list contained in Art. 128 of the Civil Code, is not open. Paying tribute to the depth, completeness, over-relevance and brightness of the works of Marina Alexandrovna (not only the aforementioned work, but also all the others that I was lucky to familiarize myself with), I have to note that in this case the opinion expressed seems ill-conceived. The category of "economic value" itself needs to be clarified and does not have a stable, massively accepted interpretation, which already casts doubt on the possibility of using this category to determine the relevance of a fragment of reality to the number of rights objects. One of the most logical and clear definitions is given in the article by L.D. Revutsky, where economic value is defined as "total savings or satisfaction received by a person as a result of consumption of goods acquired by him" [4]. The quoted definition, like most others, is quite consistent with the objects of law. If all fragments of reality that have economic value are "other property", then it makes no sense to have all the other types of objects listed in article 128 of the Civil Code of the Russian Federation. Practically any object of law can possess economic value.

Things, non-cash money and uncertified securities certainly have economic value (there may be exceptions, such as, for example, shares of a bankrupt business company, but exceptions do not change the essence of the phenomenon under study). The results of work and the provision of services also have economic value, since without economic value no one would order them or agree to pay. However, the legislator does not classify work and services as property. The results of intellectual activity and equivalent means of individualization, even with the impossibility of turnover being imposed on them by article 129 of the Civil Code of the Russian Federation, also undoubtedly have economic value. They are not property, nor are works and services. Moreover, intangible goods can also have such value, which is especially pronounced in case of violation of rights to them. Thus, the opinion that the information fits into the established Art. 128 of the Civil Code of the Russian Federation, the system of civil rights objects seems illogical. The exclusion of information from the text of the named article was illogical.

4. ABOUT THE TERMS "INFORMATION" AND "DATA"

4.1. Meaning of legal terms

It is impossible not to touch upon another aspect of the problem: when speaking about information, the legislator and law enforcer do not always imply information as such. This term may mean “information” or “knowledge”. In Art. 2 of the Federal Law "On Information, Information Technologies and the Protection of Information", the following definition of information is given: "Information - information (messages, data) regardless of the form of their presentation." At first glance, this definition indicates the synonymy of the concepts of “information” and “messages, data”. However, we can conclude that information is data that is presented in some form outside. Thus, “data” is a broader concept, since among them one can distinguish those data that is not presented in any way. Data is the object of civil law relations in the variants of information (example: know-how) and knowledge. The fact that know-how is information, although it has special properties, is explicitly stated in the Civil Code of the Russian Federation. Data relating to the personality of a citizen is also data. They can exist both in the form of information and in the form of knowledge. The fact that the relevant information is evasively called “personal data” in the legislation does not change the essence of the phenomenon: in the modern world, relations arising regarding personal information are regulated in detail. The civil law component of this regulation is the possibility of claiming compensation for non-pecuniary damage and compensation for property losses caused by the disclosure of relevant data.

4.2. Knowledge as data

Knowledge, unlike information, may not have a form available for transfer to third parties. Knowledge is information that inherently belongs to the subject, and not to any subject, namely to a person - an individual. Even if a person “shares” knowledge, they will remain with him. He can lose (forget) them, just as he can lose part of his hair, teeth, arm or any organ, and this does not completely cancel their inextricable belonging to him. Knowledge as an object of legal relations is directly mentioned in Art. 1042 of the Civil Code of the Russian Federation: they can be made as a contribution of a participant in a simple partnership agreement. Knowledge can act as an object in the contract for the provision of services. Educational service contracts, for example, stipulate that as a result of training, the student must have knowledge. Online learning has gained immense popularity in recent years and especially in recent months due to the massive forced self-isolation of citizens of most countries of the world. And it (online training) also has as its goal the acquisition of knowledge, while the information in the same online is in abundance. Having concluded an agreement on the provision of consulting services, the client expects to receive precisely knowledge. It cannot be legally indifferent.

Possession of knowledge is a condition for occupying certain positions and a condition for granting the right to engage in certain types of activities. Even taking into account that this aspect goes beyond the framework of civil law relations, the connection with such relations is still obvious. So, in this aspect, there is reason to think about including knowledge in the number of objects of rights.

5. DO WE NEED TO CHANGE THE LAW AGAIN

5.1. About recent changes

On October 1, 2019, a new article of the Civil Code of the Russian Federation began to operate - article 783.1, which is called "Features of the contract for the provision of information services." This means recognition at the legislative level that information can be provided, and that the provision of information under the contract has significant features that require specific regulation. Interesting in terms of the problem under study is not only the fact that the legislator considered it necessary to regulate the features of such an agreement. The same law that enforces this article - Federal Law dated March 18, 2019 No. 34-ФЗ, also introduces a new version of Article 128 of the Civil Code of the Russian Federation. And in this new edition, information as an object of rights is still missing. That is, a literal interpretation of the new law should lead to the idea that information is not an object, but its provision has legal significance. This is completely illogical, which means that further changes to the law are needed, without which the legal environment of business cannot be considered impeccable.

5.2. Information in the legislation of other States

Often the method of comparative jurisprudence helps the adjustment of legislation. If we turn to the origins of world civil law - Roman private law, we will see that our problem there was not only solved, it could not have arisen. In ancient Rome, all objects of rights were considered things, and according to the Roman classification of things we would simply attribute information, information, knowledge to the number of things invisible. Turning to the experience of foreign countries also does not bring significant clarity to the solution of the problem under study. So, the German Civil Code simply does not have an exhaustive list of objects of rights. A comprehensive analysis of the norms of German civil law leads to the conclusion that the objects of law are things, rights, the totality of rights and things, intangible goods and animals [3]. At the same time, it remains unclear what information, knowledge, and other fragments of reality occupy in this system: whether they relate to rights, to intangible benefits, or are not included in this system at all. In the legislation of a number of states, information is expressly referred to as an object of rights. As an example, Art. 177 of the Civil Code of Ukraine (but keep in mind that the aforementioned article, like most of the norms of the entire code, is a translation of the old edition of the Civil Code of the Russian Federation). However, knowledge, information or other similar concepts in the main civil laws of foreign countries are almost never mentioned.

6. CONSLUSION

Given the specificity and diversity of types of information, the particularity of the circulation of rights to it, which is of great importance today and is clearly increasing for society, it should be recognized that within the system of objects of rights, information should have its own, special place. It cannot be regarded simply as a kind of property, and even more so, it cannot be “hidden” in the faceless category of “other property”. The list of rights objects must not be reduced, but expanded. Or, make it non-exhaustive. The last option as a bonus would allow us not to puzzle over non-standard, including virtual objects, the problem of their belonging to the number of objects of civil rights. If the openness of the list of objects of civil rights seems too radical a step, then at least in the closed list, instead of information that was once excluded from

it, data needs to be entered. Using this very term, because the term "information" is unreasonably narrow. And before the relevant changes in the legislation occur, business representatives, as well as other participants in the legal relationship, will have to focus on the current fragmented regulation of relations arising from information and other data.

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THE IMPACT OF DIGITAL TRANSFORMATION ON THE FORMATION OF MANAGEMENT TOOLS USED BY MODERN COMPANIES

Akmaeva Rayasa
Astrakhan State University, Astrakhan
20a Tatischev Str., 20a, Russia
akmaevari@yandex.ru

Abbasova Sevinj
Associate Professor at
Azerbaijan State Economic University(UNEC), Azerbaijan
sevinj.abbasova@yandex.ru

ABSTRACT

The studying of global trends should help managers to cope with them and develop new principles of effective behavior in these conditions to ensure the competitiveness of organizations. The need in explosive growth of digital instruments used by Russian enterprises, which is adequate to the Fourth Industrial Revolution, is argued. In the digital age managers actively change the strategies of their organizations, while accelerating not only the replacement of business models, but also significantly reducing the horizon for developing strategies and introducing new organizational forms such as Agile and holacracy. According to «Bain & Company» the analysis of the evolution of the application of managerial tools by managers in the world showed both an increase in their attention to consumers (predictive analytics, analysis of customer behavior) and a growing rejection of bureaucracy and complexity (using digital technologies, reducing complexity). The top management of modern organizations must recognize the importance of unleashing the potential of staff in its ambition to create value for customers and to realize the opportunities for becoming themselves as active entrepreneurs.

Keywords: *21st century management, digital transformation, new organizational forms, tendencies*

1. INTRODUCTION

The problem of the rapid introduction of digital technologies in the Russian economy is closely interconnected with the effective development of national management in conditions when practical managers are forced to solve new and complex managerial tasks, faced with global trends and challenges of modern reality. Studying and understanding of global factors and trends occured in the modern world will teach Russian managers how to deal with them and allow them to develop principles for effective behavior in these conditions to ensure their competitiveness. The high level of dynamism and uncertainty of the external environment in the context of the unfolding economic crisis under the influence of the new “black swans” (coronavirus, economic sanctions and the withdrawal of the Russian Federation from the agreement with OPEC+) requires Russian managers to quickly make strategic digital decisions to eliminate the country's technological gap that took place in the Post-Soviet period. Meanwhile, it should be borne in mind that the main problems in the process of introducing digital innovations and the growing uncertainty and risks facing Russian leaders are complex and widespread, and the required changes must occur faster and faster.

2. PROGRAMS AIMED AT DEVELOPMENT OF «INDUSTRY 4.0»

With the launch of the Industry 4.0 Program in Germany in 2011, which is considered the starting point for the beginning of the Fourth Industrial Revolution unfolding in the world, many countries began to actively develop similar digitalization programs for their economies [13]. In 2014 the National Technology Initiative (NTI) was developed in the Russian Federation which responded to the challenges of Industry 4.0. In the USA the similar program is called the «Advanced Manufacturing Partnership», in Japan – «Society 5.0», in China – «Made in China 2025». NTI in Russia is a program of measures for forming fundamentally new markets and creating conditions for global technological leadership of the country by 2035. In the NTI matrix the 10 key technologies are big data and big data management; artificial Intelligence; distributed registry systems (blockchain technology, 3D printers, etc.); quantum technologies; new and portable energy sources; new manufacturing technologies; sensorics and components of robotics; wireless technology; technologies for managing the properties of biological objects; neurotechnology and technology of virtual and augmented reality [8]. The role of NTI and the Digital Economy Program of the Russian Federation is huge in narrowing the technological gap between Russia and the developed countries of the world. Digital transformation can give us a new chance in eliminating the lag of our country that took place in the post-Soviet period. Therefore, the digitalization of the economy has paramount importance for Russian business and requires explosive growth in the use by Russian enterprises of new digital tools that are adequate to the Fourth Industrial Revolution: cloud computing, 3D printing, the Internet of Things, virtual (VR) and augmented reality (AR) tools, Big Data, blockchain and artificial intelligence technologies, high-performance platforms for storing and processing data (such as HANA), etc. In connection with the adoption of the Convention on the Legal Status of the Caspian Sea in August 2018, the number of partner countries will become significantly larger for the breakthrough in the digital economy. The Russian Federation offers the countries of the «Caspian Five» to focus on cooperation in the field of digital transformation, to actively introduce information and communication technologies (ICT) and electronic commerce and to engage in digitalization of foreign trade operations, cargo transportation and logistics [3]. In recent years in Azerbaijan both the public and private sectors have taken steps to develop the ICT–sector and have adopted state programs aimed at the sustainable development of this sector. Thus, the start of a five-year program of digital transformation of the economy of Azerbaijan is reported. For the purpose of popularizing digital transformation in the country the website digitalazerbaijan.az was created. It publishes news and information on recent projects in the digitalization field [9]. Azerbaijani oil company SOCAR actively supports the state course of Azerbaijan in digitalization of the economy, attracting the SAP company and business partners from the CIS-countries to share experiences and exchange views on the use of digital tools in the oil industry. The IBM company and the Central Bank of Azerbaijan will cooperate in the implementation of blockchain technologies in the economy of the republic. The X-road platform was introduced Azerbaijan. It is a decentralized system that defines common interfaces and protocols for interaction and data exchange in state institutions. Private companies can also interact with X-Road and use these platforms. It is designed to become an important component of the infrastructure, providing an increase in a favorable investment climate for foreign investors, businessmen and partners. Azerbaijan is the first country to ensure the complete digitalization of all state programs, strategic roadmaps and monitoring processes [7].

3. NEW GLOBAL TENDENCIES AND TRANDS INFLUENCING ON COMPANY BEHAVIOR

The results of Fortune's 2017 survey of CEOs of 500 largest companies in the world about the most serious challenges that today's reality poses to them are known. 72% of the directors named the incredibly accelerated pace of technological modernization as the main trend [11].

In fact, the world is now undergoing a real digital revolution. The second highlighted trend is «the borders of industries are blurring» [11]. Here are examples of how digital transformation processes require rethinking business models and expanding the scope of actions, i.e. diversification: Apple began selling music and movies as did the Amazon online store, which began producing an Echo device with Alexa's voice assistant. «Russian Post» becomes a retail bank, and «Rostelecom» in partnership with SAP provides financial services for money transfers, turning with other telecommunications companies into universal providers of business solutions from the cloud [11]. The most important mega-trend is «Data is New Gold», according to a survey by Fortune [11]. Systematic collection of data about the needs of their customers, their analysis, necessary knowledge elicitation for improving the product allows improving product quality and providing companies with competitive advantages. To keep the attention of consumers, first of all, it is necessary to deeply understand their needs. The Chinese company Haier, which produces household appliances, discovered as a result of a survey of customers what they feared when purchasing air conditioners. It turned out, that people were afraid to be infected with legionellosis most of all, and the company minimized this risk by changing the design of the fan blades [5, p. 53]. Let examine other examples of using the Big Data (BD) tool on the basis of SAP systems at Russian enterprises: at «Bashneft» they are used to predict the behavior of visitors to gas stations to offer suitable products; at «Severstal» SAP digital solutions help predict and analyze product quality; «Rostselmash» has introduced a customer-oriented approach based on SAP solutions to automate the dealer’s workplace in order to collect, analyze data and know what each of the 30,000 Russian customers wants (in essence, it has created a unique strategy for a specific client, knowing what the client wants) [11]. The point-of-sale strategy using Big Data technology is used by the Russian companies «Metro», «VimpelCom», «Lenta», shoe network «The Alba», «Sorsdata» and «Revo» startups. Thus, the use of Big Data opens up a new source of growth and opportunities for Russian organizations due to deep segmentation of the client base, the use of sophisticated analytics based on mathematical models. Another trend is the widespread adoption by enterprises of the tools of Internet of Things, or IoT, the technological concept of connected and interacting devices. So, the digital assistant «Automated Consultant» in the «Sibur» company analyzes data from sensors, issues recommendations for repair and efficient use of equipment. Foreign companies «TrenItalia», «Kaeser», «GEA», «Daimler» use SAP analytics to predict equipment failures and plan repairs, as does «GE», which has equipped its industrial products with sensors and has received the necessary analytics, has provided customers with the benefit of increasing the life of jet engines by reducing the time of their repair due to the analysis of data received from sensors. In real time «GE» controls equipment at industrial objects like that: using information from the firmware, it informs customers about the need for repairs and adjusts the maintenance schedule. Consequently, Internet of Things offers great opportunities for the collection, storage, processing and analysis of data, remote control of devices and «smart» systems. CEO of the «GE» company, D. Immelt, calls his company «... a digital industrial company that defines the future of the Internet of things» [6]. «GE» created the Predix platform for the industrial Internet, making it open to partners, developers, customers, and competitors, as Microsoft had previously did that with the Windows operating system. The Predix platform at «GE» is an open ecosystem and can be used by competitors. The Chinese company Haier has built the Open Partnership Ecosystem (HOPE), which includes 400 thousand participants in solving the company's problems - organizations and experts from around the world. Each new Haier product is developed openly and at the same time uses the national social network «Baidu» to ask potential users about their needs and preferences [5, pp. 52-53]. Another trend is the changing of approaches to optimize each stage of the value chain. Augmented Reality (AR) tools play a large role in this, it is a set of technologies that add digital data and images to the physical world.

In other words, physical objects are reflected in a digital copy, since AR tools turn data arrays and analytics into images or animations, superimposing them on the real world. AR increases the efficiency of smart connected devices (SCD), which allow you to monitor processes and conditions in real time, control the work remotely [10]. Here are examples: the production of unmanned cargo KAMAZ-vehicles equipped with machine vision has already been planned for 2025, and intelligent transport systems will control them and other vehicles. «Bosch» has become a leading developer of intelligent vehicle automation systems. Like Siemens, it offers its own platform, built on the basis of SAP digital solutions. Thus, because of digital transformation the approach to doing business is changing, i.e. the business model is changing due to the integration of disruptive technologies in all aspects of the company's business activity, and this is a new major trend in today's reality. Studying and understanding the global factors and trends observed in the modern world will teach Russian and Azerbaijani managers how to deal with them and allow them to develop principles for effective behavior in these conditions to ensure their competitiveness. Under the influence of global challenges and new development trends, modern organizations radically change the strategies of their organizations in the digital age, while accelerating not only the replacement of business models, but also significantly reducing the strategy development horizon from one-year planning cycles to shorter ones, and enterprise management should actively realize opportunities both for replacing traditional business models and kindly adopting the new 21st century management principles and relevant management tools: flexible technology Agile, the introduction of self-managed teams (Holacracy), customer behavior analysis, participation in digital transformation, predictive analytics, benchmarking, etc.

4. MANAGEMENT DEVELOPMENT IN THE DIGITAL PERIOD

In our opinion, in the process of evolution any management concept at the end of its active phase of action does not disappear completely, but mutually penetrates and enriches the management tools of other concepts at subsequent stages of its development [2, p.14]. Thus, the idea of a self-managed labor collective, put forward by P. Drucker in the early 50s of the 20th century and completely not accepted at that time by the community of managers, actively develops in various organizational forms in the 21st century. Of course, in management at each historical stage of evolutionary development, there are such key management technologies that most determine the effective solution of management tasks at this stage. The set and content of these management methods and tools change over time in their importance, role, structure. Accordingly, in the digital age management methods and tools must also be modified, their content and conditions of use must be changed. In this regard, it is of interest to analyze the evolution of the use of managerial tools by managers in the world based on the results of surveys of several thousand company executives, which have been regularly conducted by Bain & Company since 1993. The last sixteenth review was conducted in 2017 and it showed significant shifts in changing the views of top management on many aspects of modern management [12]. Firstly, 80% of managers «... agreed with the idea that today business leaders should trust and empower employees, not command and control them». As evidence, there is the opinion of Pablo Isla, head of the Spanish fast fashion company Inditex (brands Zara, Bershka, etc.), who for the second year in a row heads the rating of the top 100 «The best CEOs in the world». He stated: «Motivate people and maintain team spirit - this is the most important thing in the work of the general director» [14]. Secondly, among the most popular management tools in the 2017 survey were tools related to customer satisfaction due to their better studying: «Advanced Analytics» takes the first place, and «Customer Journey Analysis» is in 9th place, as well as purely digital tools: 13th place of «Digital Transformation», 15th place of «Internet of Things», and, finally, tools due to the development of new organizational forms of work: «Agile Management» and «Complexity Reduction», which imply the rejection of the traditional

hierarchy in the direction of reducing links in the structure management and development of self-managed teams. The «Agile» tool took 2nd place and the «Complexity Reduction» took 7th place (table 1). More than half of the respondents to the 2017 survey believe that bureaucracy and an excessive level of hierarchy put them at a competitive disadvantage, which is why the «Complexity Reduction» tool remains in the top ten. Although the Big Data Analytics tool, first noted by managers in a 2013 survey, had relatively low using, nevertheless took the first place in satisfaction, especially high in China and India. «Bain&Company» employees give good forecasts for the future with the highest projected increase in using of the «Scenario planning and contingency planning» tool (42%) and the «Complexity Reduction» tool (40%). The table shows the results of a survey of top managers about the most popular management tools of the beginning of the 21st century [12]. It should be noted that almost all the «tools» listed in the table are essentially management methods.

Table 1: Most frequently applied tools of management over 2004-2017, according to Bain & Company

Ranking #	***2004***	***2006***	***2008***	***2010***	***2013***	***2017***
1	strategic planning	strategic planning	bench-marking	bench-marking	balanced scorecard (BSc)	advanced analytics
2	CRM	CRM	strategic planning	strategic planning	benchmarking	agile management
3	bench-marking	segmentation of customers	mission and vision declaration	mission and vision declaration	Big Data analysis (BD)	balanced scorecard (BSc)
4	outsourcing	bench-marking	CRM	CRM	business process reengineering	benchmarking
5	segmentation of customers	core compe-tencies	outsourcing	outsourcing	management program change	business process reengineering
6	mission and vision declaration	mission and vision declaration	balanced scorecard (BSc)	balanced scorecard (BSc)	complexity reduction	management program change
7	core competencies	outsourcing	segmen-tation of customers	management program change	core competencies	complexity reduction
8	strategic alliances	business process reen-gineering	business process reen-gineering	core compe-tencies	CRM	core competencies
9	growth strategy tools	knowledge management	core compe-tencies	strategic alliances	segmentation of customers	customer journey analysis
10	business process reengineering	planning based on scenarios and anticipation of unforeseen circum-stances	mergers and acqui-sitions	segmentation of customers	decision-making methods	CRM

Sourse: [12] The results of the survey were evaluated by the percentage using a particular tool of the total number of respondents and the effectiveness of this tool for the company

It is important to emphasize that the tools “Agile Management”, “Customer Journey Analysis” and “Internet of Things” are first included in the review of the most popular tools used by top managers. Moreover, the «Advanced Analytics» tool, which is in the first place, is the most frequently used among companies in the Asia-Pacific region. Thirdly, there is a characteristic feature: the average number of managerial tools used by managers steadily decreased to 7.5

tools, whereas managers used twice as much 10 years ago. There are also differences in the approaches of managers from different industries and countries. Thus, the leaders of large organizations use more tools than small and medium ones, as do top-managers of developed countries in comparison with managers of developing countries. Fourthly, it turned out that in all sectors and regions digital tools are the dominant factor which rapidly change the rules of competition in their sectors. They are already very widely used in organizations. Moreover, there is a positive correlation between the breadth of tools using and their satisfaction. Respondents note a high level of satisfaction with the «Digital Transformation» tool, the use of which has nearly doubled since the last survey in 2013. There is such a characteristic feature of them: satisfaction with them grows only under the condition of wide, and not limited use of tools in the organization. Combined with «Advanced Analytics», Internet of Thing, a network of connected sensors and smart devices for data production, can be a powerful tool to help control equipment and improve products and services. Analysis of the dynamic of tools, used by top managers over the years, shows that the three most popular and effective technologies are such classic ones as benchmarking, BSc and CRM. The «Big Data» tool appeared for the first time in the 2013 survey and immediately took third place in the ranking of used tools. In the latest survey of 2017 there were two groups of new tools that appeared due to both increasing attention to consumers (Advanced Analytics, Customer journey analysis), and to improving organizational forms of employees (Agile Management) and a growing rejection of bureaucracy and complexity (Digital Transformation, Complexity Reduction). Consequently, the use of digital tools also opens up a new source of growth and opportunities for Russian organizations due to deep segmentation of the client base, using of software applications and the development of technologies of the Fourth Industrial Revolution. Thus, the presence in the last two lists of «Bain&Company» such tools as the adaptive management model «Agile», the Complexity Reduction and Internet of Thing tools, that are characteristic of the ongoing digital transformation in the world, indicates the onset and development of the digital economy era, new global challenges to which many Russian enterprises and, above all, their managers, need to prepare.

5. CONCLUSION

The purpose of this work is to help practical managers due to a scientific review to facilitate the search and selection of priority digital projects, and for this we should begin with their acquaintance with digital technologies that have already been successfully implemented in advanced partner-enterprises, and only then actively proceed with their benchmarking. Agile technology gradually and very actively penetrates into such areas as marketing, creating new products, human resources, top-management, when top managers become another agile-team, as in DE and others. Flexible self-managed teams are focused primarily on innovation, they actively interact with customers, quickly making ongoing changes to their requirements. Large world companies, such as Spotify, Netflix, Amazon, USAA, Bosch, Saab, ING, SAP, Tesla, and others, are very successful in using the agile approach [1]. Sberbank has introduced Agile not only in IT-departments, but also in the HR-department, which actively uses digital services to automate HR-processes, online training, mass recruiting by using chat-bots and artificial intelligence tools. Sberbank has also switched to the new cloud-based SAP Success Factors platform. With the help of Agile, Sberbank actively uses analytics and build predictive models of various HR–services [4, pp. 90-93]. Our participation in various online-seminars, webinars and forums allows us to conclude that certain Agile-elements and attributes (15-minute stand-ups, customer participation in the acceptance of individual product prototypes, dashboards, etc.) are already widely and effectively used by many Russian organizations in their daily activities. Top-management of Russian organizations must recognize that the prerequisite for the successful implementation of digital innovations is to take into account new trends in the

development of management, which release the potential of the staff in its desire to create value for customers and realize opportunities for becoming themselves as active entrepreneurs [5]. But the most important is the task of finding and selecting specific priority digital projects by practical managers for implementation in their organizations. In addition to the independent search for information on the Internet, managers should receive similar information about successful examples of digitalization at enterprises of related industries and sectors of the economy from the relevant departments of ministries and offices or from specially created professional organizations such as the Internet of Things Association and other similar associations. In response to the global challenges and trends of the digital economy, management of modern enterprises should strive to create companies in the form of ecosystems opened to partners, investors and even competitors.

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IMPROVING THE NORMATIVE LEGAL BASE FOR THE REGULATION OF LABOR RELATIONS

Arabiya Mustafayeva
Researcher at department of the regulation of Economics,
Lecturer at Azerbaijan State University of Economics, Azerbaijan
arabiya-mustafayeva@rambler.ru

ABSTRACT
The article analyzes the aspects of the study of the employment contract, as well as reforms to improve the labor legislation, including notification of the employment contract in the electronic information system of the employer, including the registration of notices of employment contract.
Keywords: *labor contract, notice of labor contract, electronic information system, E-signature*

1. INTRODUCTION

In legal science, labor is studied in three aspects in accordance with a labor contract. Firstly, as a form of implementation of the constitutional labor law of citizens; secondly, as the basis for the creation and existence over a certain time of labor legal relations, as a legal fact; thirdly, as an institution of a special part of labor law, that is, as a system of legal norms governing the conclusion, amendment and termination of an employment contract. Currently, the labor contract is the main and leading form of implementation of the labor law of citizens, approved in the constitution. Since it is a labor agreement that has the ability to fully meet the requirements of market labor relations based on the hired nature of labor. Today, world civilization also takes the labor contract as the main form, since here the real principle of freedom of labor has found its relationship (4.p.122). According to Article 35 of the Constitution of the Republic of Azerbaijan, everyone has the right to independently choose for themselves the type of activity, profession, employment, workplace (1.p.13). In legal science, labor is studied in three aspects in accordance with an employment contract. Firstly, as a form of implementation of the constitutional labor law of citizens; secondly, as the basis for the emergence and existence over a certain time of labor legal relations, as a legal fact; thirdly, as an institution of a special part of labor law, that is, as a system of legal norms governing the conclusion, amendment and termination of an labor contract. From this point of view, as a result of reforms carried out in our country in the direction of improving the legislative framework, significant changes have been made to the content of the labor contract in connection with the latest amendments to the Labor Code of the Azerbaijan Republic. Even in developed countries, the electronization of social services is being implemented gradually, taking into account public opinion. Improving a transparent management system that will ensure public interests and requirements is also a priority issue in Azerbaijan. The process of electronization of social services in our country is being carried out every year in an increasingly focused form. With the help of the experience gained, the services existing in the most relevant areas of the social environment are electronized and transferred to the use of citizens. As part of the work carried out in the direction of creating electronic government, digital public relations, the e-signature is one of the important factors ensuring the circulation of electronic documents. As a means of a single digital identification, the e-signature is used to electronize paper transactions. E-signature acts as an intermediary in the replacement of official signed and sealed documents in a paper form with digital documents having the same legal force. Digital public services not only serve to ensure a transparent relationship between a civil servant and a citizen. They also serve for the effectiveness of management principles. The registration in the E-Government portal of a notice of an employment contract that has led to a recent recovery in the labor sphere

can be pointed as an illustrative example. Everyone knows that the number of companies, organizations, large and small public catering facilities created in various fields of activity in our country is increasing fast. This is the indicator reflecting the development of the country's economy. However, the facts show that the violation of labor relations in our country is one of the most common administrative errors. In particular, a serious violation of the labor rights of employees occurs in private enterprises, where the conclusion of a labor contract is being avoided. However the labor contract, being the provision of employee – employer relations, protects the rights of the both parties. Employers avoid paying taxes by not registering labor contracts. This, in turn, also affects statistics related to unemployment. Due to this, the number of unemployed people, which sector is developing to what extent, plans aimed at economic development remain unknown, strategies are based on unreasonable figures. And this creates a chaotic situation in the country (5). The situation on the ground required the management of such an increase from a single center and tighten control of this issue. In this regard, the Law of the Republic of Azerbaijan No. 875-IVQD dated December 27, 2013 "On Amendments to the Labor Code of the Republic of Azerbaijan" determined the legal justification for creating an electronic information system for the notification of a labor contract and in accordance with the amendments made to Article 12 of the Labor Of the Code of the Republic of Azerbaijan, the inclusion of the notification of a labor contract to the corresponding electronic information system was assigned to the duties of the employer. According to the first paragraph of Article 49 of the Labor Code of the Azerbaijan Republic, According to the first paragraph of the Article 49 of the Labor Code of the Republic of Azerbaijan, the conclusion of an employment contract, the introduction of amendments to it or its termination takes effect after the registration of such a change in the information system where the notice of a labor contract was made, and after the relevant electronic notification is sent to the employer (2). After such changes, all employers, regardless of the legal form and type of ownership, must enter the notification of a labor contract in the electronic information system in connection with the conclusion of the contract, amending it, or terminating it. The sending of an electronic notification of registration in the electronic information system of the entered notice of a labor contract through the system to an employer is being provided during a period not exceeding one business day (6). The Cabinet of Ministers Decree No. 183 dated June 6, 2014 approved "The form of notification of a labor contract and the procedure for making the notification in the electronic information system, the form of information about the registration of notification of a labor contract sent to the employer, as well as the Procedures for real-time acquisition of information related to the registered notification of a labor contract "(3). After the changes made to the Labor Code, labor relations are being created not since the time of concluding the labor contract, but since the time of registration of the notification of the labor contract entered into the electronic information system and sending the corresponding electronic notification to an employer (6).

2. RESEARCH

Starting July 1, 2014, the portal "E-Government" (www.e-gov.az) hosted the services of the Ministry of Social Protection of Labor and Population "Registration of notifications of labor contracts and sending the corresponding electronic notification to the employer", as well as "Receiving the information about notifications of labor contracts by employees". Introduction of the information on labor contracts concluded with employees by authorized persons of the organization and upon that the acquisition of such information by employees by means of the mobile electronic signature "ASAN imza" is already possible (5). Notification of a labor contract is a new concept in the law. Notification of a labor contract is an electronic document entered into the electronic information system by the employer for the purpose of electronic registration in the electronic information system of the Ministry of Social Protection of Labor and Population (hereinafter referred to as "the electronic information system") of information

on the conclusion of a labor contract, amending or terminating labor contract, except for exceptional cases (7). The form of notification of a labor contract, the procedure for entering it into the electronic information system, the form of information sent to the employer in connection with the registration of the notification of a labor contract, as well as the procedures for acquiring the information about registered notifications of labor contracts in real time are being determined by the Cabinet of Ministers. According to clauses 3.1, 3.2 and 3.4 of the corresponding Procedures of the Cabinet of Ministers, the notification of a labor contract is being entered into the electronic information system through the "Electronic Government" portal (3.p.2). With the exception of labor contracts concluded between employers and employees accepted for relevant positions (occupations) in state bodies, provided for in paragraph 2-1 of Article 7 of the Labor Code of the Azerbaijan Republic, employment contracts concluded between employers and employees for other positions (occupations), amending or terminating such contracts is the entry of such information into the electronic information system by the respective employers in the form of notification of a labor contract (2). Notification of a labor contract through the use of authentication tools that allow to log in using an enhanced electronic signature in the "Electronic Government" portal is being done directly by the employer or by persons authorized by the employer through the "Authorized Person Registration" service located on the "Electronic Government" portal. In accordance with article 3 of the Labor Code, in order to electronically register the conclusion of an employment contract, amendment or termination of it in the electronic information system of the relevant executive body, the employer must enter an electronic document, that is, a notification of a labor contract in such electronic information system (EIS). And this requires the presence of an enhanced e-signature of the employer or their authorized persons (2). It is the e-signature that ensures the preservation of the identical legal force of the a labor contract that the employer signed with the employee and certified with the seal while entering the contract into the system. The system contains a legally approved labor contract approved by the employer. A labor contract entered to the system is approved by the employer and have a legal force. Notification of a labor contract entered into the system by E-signature, as well as in paper form, protects the interests of both parties and prevents their avoidance of liability (5). The amendments to the Labor Code are aimed at ensuring the protection of the labor rights of the employed population and the prevention of illegal labor activity, elimination of problems associated with the omission of employer-employee relations and the organization of remuneration. All employers, as well as employees, will be able to acquire information about the contracts they have signed through the notification of labor contracts from the electronic information system of the Ministry of Social Protection of Labor and Population. Thus, both parties will be responsible for the obligations that they assumed under the labor contract. Notifications of labor contracts provide employees with protection of their labor rights, create opportunities for them to claim their own rights from employers. This document is also an additional form of ensuring the protection of the rights of an employer provided for in a labor legislation: an employer can provide the specific conditions agreed upon in a labor contract in a transparent form. It was noted that as the result of the introduction of an electronic information system by the Ministry of Social Protection of Labor and Population with the aim of registering notification of labor contracts, the process of provision of certificates of workplace or wages by citizens in connection with certain issues was greatly simplified. In case of a request by an organization for an information about his salary from a citizen, the citizen will print out the notification of the labor contract concluded with him and available in the electronic information system and provide it to that organization. The citizen will also be able to send this form of notification to the email of the organization that requested such a notification from him.

3. CONCLUSION

The launch of the electronic information system being primarily an important step towards ensuring labor standards, will put an end to such situations as the formalization of labor relations, that is, failure to provide the employee with one copy of the concluded labor contract and the availability of such a copy only for the employer. Thus, the electronic information system will act as an important source of information on protecting the labor rights of workers and at the same time the rights of future social security. As a result, working citizens will not be required to provide an information about their jobs, salaries, etc., obtaining this kind of information will be possible through the electronic information system. In particular, this system will have a positive impact on non-violation of employees' labor rights, as well as simplifying the analysis of developing and lagging areas of activity, increasing the quality of work on the regulation of economic development by strengthening control over the employer-employee relations, and indirectly, increasing social welfare. The introduction of notifications of labor contracts in the electronic information system will contribute to a significant strengthening of the state control over labor legislation, more reliable protection of labor rights of workers. Previously, there were such cases when, in spite of the presence of a labor contract concluded between the parties, the employee was not provided with one copy of it, the labor contract was kept by the employer. And this fact contributed to the deprivation of the legal basis for protecting their own rights in the situation they needed. However, after this, any employee or employer will be able to receive information about labor contracts concluded with them from the electronic information system. Registered notifications of labor contracts, being primarily a form of ensuring the protection of labor rights for employees, as well as other rights arising from such rights, including a form of ensuring the protection of social security rights, provides the basis for requiring the employer to exercise the rights indicated in that contract. Cases of employers avoiding responsibility for ensuring work rights will be prevented. The state control will be carried out by the auditor conducting the audit, who will already have in advance many data about the employer and employee. As a result, employers will be forced to approach more serious and comply with the requirements of the law; the protection of the labor rights of workers will be carried out in a better form. In the course of exercising state control over labor legislation in any enterprise, the legal or illegal labor activities of employees will be promptly clarified depending on the availability of a labor contract notification related to them in the information database. The growth dynamics in the field of registration of labor relations between the employer and the employee will ultimately contribute to an increase in budget revenues for social insurance contributions and tax contributions. And this will create conditions for providing working citizens with a decent pension in the future (7).

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THE USE OF TOURISM SLOGANS AND LOGOS IN THE CASE OF EUROPEAN CAPITALS – A POSSIBLE CLASSIFICATION

Arpad Papp-Vary
Budapest Metropolitan University, Hungary
apappvary@metropolitan.hu

David Wolf
Budapest Metropolitan University, Hungary

Mate Farkas
One on One Communications, Hungary
mate.farkas@metropolitan.hu

Szabolcs Szolnoki
University of Pécs, Earth Sciences Doctoral School, Hungary
szoln.szabolcs@gmail.com

ABSTRACT

The present study attempts to categorize and analyze the tourism logos and slogans of European capitals, thus providing a comprehensive view of the role of logos and slogans in European city branding efforts. During our research we examined a total of 52 capitals of countries related to the European continent. We analyzed their own media platforms used in tourism communication to find out how much the application of a consciously and centrally used English language tourism slogan or logo can be identified. Our examination showed that logos and slogans (both being popular city branding elements in Europe) are used in an almost equal number of countries during their marketing processes (capitals with logos: 37; capitals with slogans: 36). The lack of both (that is, not having a logo or a slogan) could be experienced in one fifth of the capitals (10 capitals). Having examined the dominant colours in the 37 tourism logos of capitals, we found out that the most dominant colours were red (27%), followed by blue and black (both 22-22%). However, an equal number of capitals are colourful in the sense that their logos consist of at least 3 colours (22%). In the case of slogans (36 pieces), ones with an emotional effect (25%) are in the first position. It is followed by calls to action (22%). Slogans that display some positioning in geography/value or highlight the attraction of the specific capital occurred in 17-17% each. In addition, we also found other slogans (19% of the cases) that could not be listed in any of the categories mentioned above. The results may provide important guidance for capitals that have not developed their brand with a conscious choice of slogan or logo, and the novel approach to the topic may designate directions of research for academics.

Keywords: *destination branding, city branding, tourism logo, tourism slogan, European capitals*

1. INTRODUCTION

Slogans and logos are the two most tangible elements in destination branding. Both are really good if they capture the character and story of the place, distinguish it from its competitors, and especially if they inspire tourists to learn more about the destination and travel to that specific place. Capitals have usually been considered the gems of their countries in the course of history. The word ”capital” originates from the Latin word ”caput”, that is ”head”, and they were hence regarded not only as the economic, governmental and cultural centre of the country, but also its flagship in tourism.

Therefore it is very important and exciting to examine what tourism slogans and logos the capitals use, because they usually affect the complete tourism of their country. The present study narrows down this analysis to the capitals of Europe, providing a more complete picture of the role of logos and slogans within European city branding efforts. The article first discusses the general attributes of good slogans and good logos and their special role in cities and places, that is destination branding. It then goes on to present the methodology. We start the presentation of the results by providing a general overview of the use of slogans and logos in terms of European capitals. Then we perform a more in-depth analysis of each logo and slogan, identify their noticeable characteristics, and present possible classifications. The conclusion summarises the most significant findings and their possible uses, and shows further possible research results. The appendix includes slogans and logos of capitals from which the sample was drawn.

2. THEORETICAL OVERVIEW

2.1. The role of slogans – with an outlook on cities

If we are looking for the origin of the word 'slogan', we must travel back to Gaul in time and space. Gallic people used the word 'sluagh-ghairm' as a battle cry (HEALEY, 2009). This was the thing soldiers lined up behind, and as soon as they heard it, they knew they had to give their life and blood for victory, their common goal. Although we do not use the word as a battle cry anymore, we can be sure that "slogans are an extremely effective tool for the development of brand equity." – as KOTLER, "the Pope of Marketing" and KELLER, one of the most famous experts of branding wrote in their book "Marketing Management" (2006, 378). They also highlight that "the role of the slogan is to provide a reference point or clue to customers in order make them understand what's behind the brand, and what makes it special" (KOTLER–KELLER, 2006, 378–379). It is also worth quoting Ildikó SÁRKÖZY (2009), who says that a slogan is a sentence that includes the textual message of a brand. In the case of a good slogan, the unique selling proposition is expressed. The slogan is an essential part of brand communications – its basis and climax the same time. According to ROSENGREN and DAHLÉN (2006) a slogan may also play an important role in creating the prestige of a brand. The authors say while a logo is a less human, visual, graphical element that primarily grabs people's attention instead of making them think, a slogan is considered a rather human interaction as it usually communicates its values through everyday language. Therefore the importance of slogans or mottos is indisputable. However though, it is not easy to define what makes a good slogan. PAPP-VÁRY also summarized the aspects of a good slogan in his book "The power of brand names" (2013):

- it 'grabs' positioning;
- it has a clear message and communicates the 'story' of the product (in this case, the story of the capital);
- it is attractive and includes 'consumer and customer' advantage;
- it carries a positive connotation (or at least it is not negative);
- it is inspiring: it urges us to buy the product, or get more information about it;
- it is relatively short (not longer than 5 words);
- it differentiates: it is unique, original, and different from competitors;
- it can be used and sustained on a long term, and you do not have to replace it;
- it is easy to memorize and repeat;
- it harmonizes with the logo;
- it is catchy and witty;
- clients – and colleagues – like it. (In the case of a capital, potential tourists, locals and citizens like it).

In spite of their importance, there are actually only a few slogans that we can recall. (Although almost everyone knows the slogan of Nike, only a few people know the slogan of Adidas). As we can see, finding the appropriate slogan poses a challenge even for the biggest companies. This does not mean that a good slogan would not be greatly useful, but its influence should not be overestimated, either. The central motto might not be a magic bullet, but it plays an extremely useful role in brand building: a good slogan may generate sales, but a less elaborated message may undermine sales efforts. In the case of cities, tourism slogans have a similar effect. They can increase the attractiveness of the city, but can also hold back city brand building with a boring cliché or inappropriate slogan. As PIKE (2007) points out, in the case of most destinations the slogan is an indispensable, public articulation of the brand strategy of that specific place. It can also be seen that cities have less room for manoeuvre in the case of slogans than in the case of logos, because they have to use a specific code system, the language. As these are tourism slogans, this language is English in the first place, but it is good if the slogan also makes sense in other languages. This is one of the reasons why it is a challenge to write the tourism slogan of a capital in way that makes it effective, memorable, unique, also addressing all potentially interested parties at the same time. The result is therefore often a less unique slogan that offers a rather safe solution, which is less effective in attracting tourists.

2.2. The role of logos – with an outlook on cities

The best brands do not only use good slogans, but they also have good logos and – in a broader sense – good visual identity. WALLY OLINS, prestigious British branding expert, the author of the book On B®and (2004) goes as far as to state that logos are the heart of branding programs. Others quote Confucius: ”A picture is worth a thousand words” – referring to the key role of logos that is even greater than that of slogans in their opinion. PARK et al. (2013) also think that the logo is a key element of brand identity, because logos represent the essence of a brand in a visual sense; besides, they can be focal points of the relationship with customers, as they communicate the core values of the brand, and raise brand awareness. They state that you should definitely invest in the design of a good logo, because logos that are not able to convey the symbolic and functional advantages of the brand and do not provide aesthetic satisfaction are unable to fully unleash the potential of the brand. According to MASTEN (1988), when people consider that a logo is of high visual quality, they suppose that the product represented by the brand is also of high quality. At the same time, it is worthwhile to take a look at the origin of the term ’logo’. The expression comes from the Greek word ’logos’, whose original meaning is ’word’. This suggests that the role of logos is no different than displaying the name in a visual way (HEALEY 2009: 90.) However, this can have various forms: the most common example is when the brand name is also accompanied by some visual symbol (for example, the Red Bull inscription with the characteristic red bull), but there are also cases when only the brand name appears with a more unique font (for example, Cosmopolitan magazine). Surprisingly, there are also examples when it is unnecessary to display the brand name, but it is a very rare situation. Apple, Shell or the Red Cross can use its symbol by itself because in English-speaking countries people say apple, shell, and red cross if they see the sign of an apple, a shell, or a red cross. However, it is important to emphasize once again that the role of a logo is to support the appearance of the brand name as much as possible. But what is a good logo like? According to graphic designer PAUL RAND (quoted by HEALEY 2009: 90.): ”An ideal logo is simple, elegant, versatile, practical and unforgettable”. However, this definition is not specific enough, and provides little help in planning a logo. According to COHEN and VARTORELLA (quoted by HEM and IVERSEN 2004) a good logo has 3 distinctive features:

1) It is recognisable
2) It has an acceptable uniform meaning for its target market
3) It has a positive effect

If we had to provide a broader checklist with a series of questions about good logos, it would include the following (PAPP-VÁRY 2013):

- Does the logo communicate the brand, its positioning and values? (For example, if the brand is for women, does it use a slim, feminine font? If it is for men, does it use a thicker font? Do its colours support the message? For example, in a somewhat simplified manner, white colour can be associated with cleanness, black with luxury, blue colour may suggest leadership, violet may be connected with royalty, and green may create environmentally friendly associations.)
- Is it simple? Are you sure it does not include too many elements? (It is no coincidence that if we consider the logo history of great brands, they have become simpler over time.)
- Does it work on black and white surfaces as well? (Although the number of black and white press products is decreasing, it is still worth considering a black and white version of the logo. For example, our colleagues may need to print corporate materials in black and white.)
- Does it work in small sizes? (Can it be noticed if it is scaled down to a really small size?)
- Can the brand be clearly noticed? Is its name readable? (We should not think that we are Apple or Shell.)
- Can it be used horizontally and vertically as well? (It is usually more useful to create a logo that is horizontally wide in a 2:1 ratio approximately. This is because many surfaces possess this ratio, e.g. billboards, business cards, e-mail signatures, or the façades of buildings, therefore a logo like this can be placed on them more easily. However, it is also true that the screen of mobile phones uses a reversed ratio.)
- Can the logo be extended to offline and online identity elements? (After all, a logo is just the basis of visual identity. We need to check if it works on envelopes, writing papers, invitations, advertising materials, e-mail signatures, the website, online campaigns, presentation materials, etc.)
- Are we sure it can not be confused with the logos of other (competitor) brands? (The essence of branding is differentiation. It is no wonder that Pepsi is using more of the blue colour than before, distinguishing itself from the redness of Coca-Cola.)
- Does it grab attention? (The violet-orange combination used by Fedex delivery services can be noticed from a distance. Bookline online book shops did not only choose neon green because it was different from the competition, but it was also different from the communications of all other online companies – let us remember that we do not only compete with our direct commercial rivals as we are trying to attract attention, but with everyone else in a broader sense.)
- Can it be applied on merchandising items and ’gadgets’? (As a graphic designer acquaintance of the authors pointed out some time ago, one of the basic questions regarding logos is: ”Would we wear a T-shirt like that?”
- Does it work in the digital world? Is it trendy? Can it be shared? (To continue with the example above: ”Would we wear a T-shirt like that and would we post it in the social media?”)

The creation of company logos is not at all an easy process, but city logos – in spite of the similarity of the process – must comply with a lot of further requirements. First of all, as HEM and IVERSEN (2004) point out, destination logos must be in accordance with the identity, unique characteristics, values, essence and aims of the region they represent. Looking at the side of customers and consumers, cities must show travellers a symbol right in the logo also helps their distinction from competitors using their unique characteristics – even globally if applicable. According to MARTI (2008), MORGAN et al. (2011) a logo must be capable of presenting the aims of the organization within the market in a memorable and easily identifiable way – if possible, also including its name.

In this context, PITTARD, EWING and JEVONS (2007) point out that logos are able to bridge international borders in the course of visual communication. HENDERSON et al. also share the viewpoint that ”logos are the most common element of the marketing mix to be used in an unaltered form when going abroad” (2003: 298). Thus similarities are clear, but HANKINSON (2007) also highlights that destination branding differs from corporate branding in several respects due to the diversity of local characteristics. According to BUHALIS (2000), one of the most important aspects is that each destination (be it a city, a region, or a country) has several highly influential stakeholders similarly to companies. Of course the creation of a good visual identity is essential in both cases: strong logos increase the appreciation of the cities they promote, but, at the same time, a less careful choice of logo may affect the reputation of the city negatively, the same way as in the case of companies. Therefore it is imperative to design a good city logo, although it is a rather difficult task. Its difficulty, inter alia, comes from the fact that most countries already have a ”logo”, that is, their coat of arms. However, it usually does not comply with the requirements mentioned above, and, especially, it is not suitable to attract tourists. In such situations, the solution is usually the use of the traditional coat of arms in certain official documents, and the use of the ’marketing logo’ in all other materials reaching the public. The situation is further complicated by the fact that several countries also use a variety of logos serving various purposes, for example:

- the logo used to attract tourists
- the logo used to stimulate investment
- the logo(s) used to promote the sales of local products
- logos of local non-municipal organisations
- the coat(s) of arms and logo(s) of the local football team, the national team or other important sports organizations
- logos of local companies (e.g. public transport)
- logos created for special events and programmes
- and so on.

If these elements are not corelated in some way, the result may be a gigantic cavalcade of logos, resulting in considerable difficulties in uniform city communication. We must also emphasize that (however strange it may seem) it is always better to have one good logo that can be used on the long run than a series of brilliant logos replaced each year. The reason is simple: in the latter case there is not enough time to ’familiarize’ the target audience with individual logos.
If we examine the logos used by cities, the thing they inevitably have in common is tactfulness. Cities usually do not experiment with provocative or divisive logos. The stance is usually a peaceful, cultured, politically correct and clean creative solution. It is rare to even see one with a more decorative, spectacular and colourful design.

3. METHODOLOGY

The survey was based on an analysis of the slogans and logos of 52 European countries. The choice fell on the whole European continent first because it provides a sufficient sample size, and secondly because we live here, this is our international community, therefore its relevance was given. It should be noted that in the case of some countries and their capitals it was not at all easy to define if the capital can be considered a European capital and has a place in the sample. In order to make the examination as extensive as possible, We interpreted the concept of Europe as broadly as possible. Therefore the survey also covered capitals of countries whose capitals are in Asia in a geographical sense, but the country itself is often considered as a part of Europe – these include Turkey, Armenia and Azerbaijan. However though, Kazakhstan was not included, because its capital, Nur-Sultan (formerly known as Astana) is in the middle of Asia.

In accordance with the aims of the research, we examined all of the capitals' internet platforms with several users worldwide and especially in Europe, providing an effective advertising or informative platform for the capitals. These include the capitals' official and tourism websites, Twitter profiles, Facebook/Instagram pages and the intermediary platforms Tripadvisor and Visitacity. Based on the official website of each capital it soon became clear how elaborate the brand identity of that capital was. If the duo of the logo and the slogan was not communicated on the main page immediately, these elements usually could not be found elsewhere afterwards. We could see surprisingly little activity on the social pages of capitals, and it was often not clear which of them were edited by the local municipality or tourism office (thus providing a communication channel for the capital) besides the several fan-made sites. We hoped that – similarly to companies – it will be impossible to miss the slogan and logo of the brand. However though, we experienced that only one fourth of capitals featured their logo in a central position of their social page, and only one tenth of them included their slogan in a central position. As a bit of a surprise, the capital with the most consistent communication of appropriate contents on its social platforms is no other than Vatican City, where they even have capacity to build the personal brand of Pope Francis. The capitals have a rather average presence on Tripadvisor and similar intermediary sites. The pages of the cities on these sites do not feature a unique message or advertisement, although this is more of a missed opportunity on the side of the intermediary sites. In order to make the survey appropriately focused, our aim regarding the present study was to examine the following aspects:

- what percentage of capitals use a logo or slogan clearly defined for the attraction of tourists,
- in the case of logos, what colours are dominant and what the capitals wish to represent through them,
- how can we categorize slogans – what are the ideas capitals wish to use to convince tourists.

4. RESULTS OF THE SURVEY

4.1. The capitals' use of slogans and logos

Based on the survey, four groups could be created.

1) Capitals with tourism logos:
   37 out of 52, that is, 71% of capitals have a tourism logo. At the beginning of the research we assumed that only few of the smaller European countries or mini-states have some "living" branding tool, but this was not true in the field of logos. We may consider it a subgroup that 6 cities out of 37 only have a logo, but do not have a slogan these are: Bern, Helsinki, Lisboa, Madrid, Oslo and Tallinn.

2) Capitals with tourism slogans:
   36 out of 52, that is, 69% of capitals have a tourism slogan. It is interesting that 5 cities out of the 36, namely Yerevan, Chisinau, Sofia, Tirana and Vaduz only have a slogan, but do not have a logo.

3) Capitals with tourism logos and slogans as well:
   31 out of 52, that is, 60% of capitals have a tourism logo and a tourism slogan as well. The fact that more than half of European capitals use both major tools to brand themselves is indicative of their up-to-dateness even if there are significant differences between the area, population and economic stability of the countries belonging to this group. It is not hard to 'sell' Rome, Vatican City or Paris, but the examination shows that brand building is also considered important in the case of Skopje, Tbilisi or Gibraltar.

4) Capitals without tourism logos and slogans:
   10 out of 52, that is, 19% of capitals do not have a tourism logo and a tourism slogan either – they do not use such tools for the branding of the city. Nevertheless, there might be differences in the reason why the countries in this group decided not to use them:
   - For example, Moscow and London are two huge centres of tourism with a lot of images and ideas associated with them all over the world. (London: Big Ben, Double Decker, London Underground, London Eye, London Bridge etc.; Moscow: Kreml, Red Square, Lenin's Mausoleum, Cathedral of Vasily the Blessed etc.) It is possible that the two cities think that these sights speak for themselves, and do not want to connect their slogan or logo to a single element out of dozens of sights.

However, the reason may be different in the case of the other capitals. The capitals of certain countries are understandably too small to launch a unique, independent branding process targeting the whole world – in such cases, they prefer to brand the country itself. In the case of Ukraine or Belarus it is possible that tourism branding and selecting a slogan and a logo are not priorities as a result of the current economic and political situation.

4.2. A classification of the capital's tourism logos based on the dominant colour

We classified the logos on the basis of their colours to get closer to the emotions and values represented by them (ones that they are likely to wish to communicate). As the colours used by the brands are key elements, it can be assumed that the choice of colours is a conscious step in the case of each logo.

4.2.1. City logos with red as the main colour (10 out of 37)

We may associate red colour with strong, stimulating feelings such as excitement, adventurousness and passion. In terms of products/services, red logos usually appear in entertainment industry, food industry or the fashion world (for example, YouTube, Netflix, RedBull, McDonald's, H&M, Levi's, LEGO*)*. This category includes capitals using logos in red or some shade of it.

Figure following on the next page

Figure 1: Logos with red as the main colour

4.2.2. City logos with blue as the main colour (8 out of 37)

Blue colour can be connected to competence because we may associate it with intelligence, communications, effectiveness, sense of duty and logic, therefore we can often see it in the financial sector, telecommunications or electronics industry companies (Labrecque – Milne 2011). The following brands use blue as the dominant colour: Facebook, Twitter, Skype, PayPal, HP, Dell, Samsung, CitiBank. In the case of cities, this colour may also create an impression of reliability, safety and competence. It is especially interesting that there are two examples when the word 'love' is written in blue.

Figure 2: Logos with blue as the main colour

4.2.3. City logos that combine blue and red (2 out of 37)

No matter how different the previous two categories are, there are capitals which use both colours at the same time. What is interesting is that all logos in this category feature a city name in blue with some additional brand element or graphics in red. Zagreb's logo is adjusted to the colours of the Croatian national flag, but Budapest's logo does not include such an element. It is as if they want to communicate something like the city preserves its competence and reliability (associations of blue colour), but it can be entertaining, energetic, passionate or adventurous if it needs to in order to please its guests longing for excitement.

Figure 3: Logos with a combination of blue and red

4.2.4. City logos with at least three colours (8 out of 37)

While single-colour logos are more focused and more serious, multi-colour logos suggest that the brand is more informal, open and creative. We may often see them in the case of children's toys and sweets, but even in the case of online companies such as Skittles, Toys R Us, Google, Microsoft or Instagram. Not surprisingly, multi-colour logos are also used by cities who probably try to demonstrate their diversity.

Figure 4: Logos including at least 3 colours

4.2.5. City logos with black as the main colour (8 out of 37)

Black colour is most often associated with force, power or professionalism. It appears in a variety of industries from sports clothes to luxury, tech and fashion industry. It is a less unique, but safe choice. It can be very simple and clean - little wonder, then, that it is a popular choice among Scandinavian countries.

Figure following on the next page

Figure 5: Logos with black as the dominant colour

4.2.6. Other city logos that could not be classified (1 out of 37)

In one case we could not list the city logo in any of the groups mentioned above. The special example is Vatican City who actually use their coat of arms, not a logo.

4.3. A classification of the capitals' slogans

It is worth starting the analysis of the 36 tourism slogans by examining what the words appearing in the greatest number of slogans are. The two words leading this 'competition' are "City" and "Culture". First it is worth considering whether the slogan should include the word 'city' in the case of a city. This is because there is one thing that we (almost) probably know about it: it is a city. Is it a reason why the word 'city' need not necessarily be included in the slogan? Or is it a reason for including it? Both reasonings have their own logic. We can also add that in the case of many European capitals it is not even clear whether potential tourists know them or have heard about them, therefore the word 'city' may be necessary. The word „culture" is the other most popular expression. Of course all places are proud of their culture, therefore it is understandable that they try to advertise themselves by this. Special mention should be made of 'different', another quite popular word, which is used to demonstrate that a city is unlike the others. What is interesting is that these capitals made a conscious decision (and spent money) to equip themselves with a slogan that positions them within the tourism market. However though, most of them tend to use identical, almost clichéd expressions that any of the other capitals could also proclaim about themselves, and the whole process loses its original value. Anyway, the following groups can be distinguished according to their meaning:

4.3.1. Slogans with an emotional impact (9 out of 36, 25%)

Love, that is, the promise of a strong emotional experience is the most frequently used motif in the slogans of European capitals, also addressing tourists. However, this promise is the least suitable for distinction among all alternatives – which capital would say that it does not love its tourists?

Name of capital	*Slogan (English original)*
Brussels	BXL Moves For You
Paris	City of Love
Prague	Prague:emotion
Reykjavík	Reykjavik Loves Visitors
Skopje	Feel Love, Feel Skopje
Tbilisi	The City That Loves You
Warsaw	Fall in Love With Warsaw
Yerevan	Feel the warmness
Zagreb	Full of experiences

Table 1: Slogans with an emotional impact

4.3.2. Positioning based on space or value (8 out of 36, 22%)

The second most popular trend is to place the city some in space within the slogan, based on its real, geographical or represented values. This approach can provide a much easier distinction, because the city refers to itself as the centre of something, that is, it positions itself. As of summer 2019, Valletta's tourism website still consciously features that it is the European Capital of Culture, although it actually possessed the title in 2018. The most interesting solution in this category is undoubtedly that of Vilnius, whose slogan is 'The G-spot of Europe'. The basics of the campaign were developed for a school project by Jurgis Ramanauskas and his fellow students. Two years later the picture came to light and soon started to spread domestically in a viral way. Soon after this Go Vilnius, the capital's official development office invited the students to think together about the implementation of the g-spot idea. The final result was a rather daring advertising campaign which was reported all over the world in tourism and marketing communications magazines.

Name of capital	*Slogan (English original)*
Andorra la Vella	Capital dels Pireneus
Berlin	The city of freedom
Budapest	Spice of Europe
Nicosia	The brightest capital of Europe
Stockholm	The capital of Scandinavia
Vaduz	Centre of Culture
Valletta	European Capital of Culture
Vilnius	The G-spot of Europe

Table 2: Positioning slogans based on space or value

4.3.3. Call to action slogans (6 out of 36, 17%)

Call to action slogans hit a more direct, more informal tone in order to distinguish themselves. Be it a visit or experiencing local life in some form, these slogans do call to action. The call in question may be more abstract, or an urge to some concrete action.

Name of capital	*Slogan (English original)*
Belgrade	#gobelgrade
Chisinau	Discover The Routes of Life
Luxembourg	Let's Make It Happen!
Minsk	Think Minsk!
Riga	Live Riga!
Vienna	Now! Forever.

Table 3: Call to action slogans

4.3.4. Emphasizing its own attractive characteristic or beauty (6 out of 36, 17%)

Although slogans focusing on the charm or beautiful nature of the city clearly communicate a specific value that they aim to represent, the same the same occurs in relation to them as in the case of slogans focusing or love. Would anyone say that their city is ugly? Not likely. With all that in mind, this is not a very strong positioning tool, because each city would obviously list itself among beautiful cities. Rome's case is somewhat outstanding among these slogans, because it did not want to invent some new catchy thing, and uses the widely popular slogan "The Eternal City".

Name of capital	*Slogan (English original)*
Bratislava	The city where you find real life
Copenhagen	Wonderful Copenhagen
Monaco	Wild Beauty
Rome	The Eternal City
Sarajevo	A city of thousand tales
Sofia	Grows, But Does Not Age.

Table 4: Slogans emphasizing the attractive characteristic or beauty of the city

4.3.5. Other slogans that could not be categorized (7 out of 36, 19%)

There are other slogans that cannot be put in any of the abovementioned categories, but they are also different from each other. In a sense, Amsterdam's slogan goes beyond the slogans of all capitals. It is a message packed in a simple word game, but it is also a deep message encouraging identification which (instead of the simple call to action 'visit us') promises that the tourist simply becomes one with the city of Amsterdam (Iamsterdam).

This is not just a friendly inviting message, but it also helps to dispel the feeling that visiting tourists are only outsiders, observers, static parts of the city. Athens' slogan ("This is Athens!") is quite clichéd; it is some kind of proclamation. It is interesting that the slogan is similar to the iconic 'This is Sparta' battle cry scene of the movie titled "300", serving as a basis for a lot of memes after the premiére of the piece. It creates an apt, unique, really authentic impression together with the logo, and the a "One city, never ending stories" complementary sub-message also improves the overall impact. Dublin's "A Breath of Fresh Air" slogan does not only refer to the much fresher air as compared to the majority of cities, but also to the options to have largely important experiences. Tirana promotes the diversity and variety of the city. It is interesting that none of the 56 capitals used something similar, although the diversity of experiences is very attractive for many tourists when choosing their destination. The brand building of Vatican City is completely different from the ordinary in the sense that unlike other cities, its message is largely based on the city's spiritual, cultural and historic attraction. The papal motto is also only displayed on the city's coat of arms, and instead of using a 'slogan' in English for wide audiences, it keeps its Latin language, addressing a target audience who know the original source of the text – and of course for everyone who knows it, but see that itt was written in Latin.

Name of capital	*Slogan (English original)*
Amsterdam	I amsterdam
Athens	This is Athens!"
Dublin	A Breath of Fresh Air
Gibraltar	A year of culture
Kiev	Everything starts in Kyiv
Tirana	A Colorful Place
Vatican City State	Miserando atque eligendo

Table 5: Slogans that could not be categorized

5. CONCLUSION, FURTHER RESEARCH OPPORTUNITIES

The aim of the research was to examine how widespread the use of a central tourism slogan and logo is in the case of European capitals. Based on the results, the following conclusions can be drawn:

- Out of the 52 (100%) examined capitals:
  - 36 cities (69%) have a logo,
  - 35 cities (67%) have a slogan,
- Within that:
  - 6 cities (10%) only have a logo,
  - 5 cities (8,9%) only have a slogan,
  - 33 cities (63%) have a logo and a slogan as well,
- Last, but not least, 10 cities (19%) do not have a logo or a slogan.

Thus the result of the analysis shows that two thirds of the capitals examined are up to date in their branding in terms of the examined tools. We also found out that tourism logo and tourism slogan are popular city branding elements in Europe. Only one fifth of European capitals lack both a tourism slogan and a logo – they should consider using one or both of them in the future. In the case of logos, the subject of the analysis was a categorisation based on colours. The results show that the most popular colour is red, which – according to colour symbolism – tries to stimulate basic and strong emotions such as adventurousness, passion and excitement. Blue colour is also very popular, and colour symbolism suggests that capitals belonging here wish to make a competent, intelligent, reliable impression.

Black logos may create an impression of power and luxury, but these sacrifice communications based on the power of colours. Logos using at least three colours are more informal and playful, and they may refer to the city's diversity instead of trying to display a serious image like single-colour logos do. The most popular colours in the case of the 37 cities that have tourism logos are:

- Red: 10 logos (27%)
- Blue: 8 logos (22%)
- Blue and red: 2 logos (5%)
- At least three colours: 8 logos (22%)
- Dominantly black: 8 logos (22%)
- Other: 1 logo (3%)

We also examined slogans based on what their recognisable patterns were. Our findings suggest that most capitals (25%) use a slogan try to make an emotional impact. These capitals do not want to convince tourists rationally, but use some more emotional communication. This is followed by the groups of call to action slogans, which amounts to 22% of slogans. The ratio of slogans involving a positioning of the capital based on space or value and slogans emphasizing their own attractive characteristics is 17-17%. However though, slogans use other (if you like, unique) solutions in 19% of cases. We must add that this uniqueness is subjective in many aspects, because there were actually very few slogans which could not have been used in the case of other capitals. The classification of slogans in the case of the 36 European capitals that have a tourism slogan:

- Slogans with an emotional impact: 9 (25%)
- Positioning based on space or value: 8 (22%)
- Call to action: 6 (17%)
- Emphasizing its own attractive characteristic or beauty: 6 (17%)
- Other: 7 (19%)

All in all, it can be stated that while the majority of capitals produce excellent tourism image spots, their website functions well and their logo use is conscious, they do not really find their voice in terms of slogans. In this field, there is space for improvement, which may hopefully find some inspiration in this study. Considering further directions of research, it would be useful to conduct a survey of tourists and travellers to find out how much they know these logos and slogans, how much they like them, or how much these tools activate them – in a sense that they would depart and visit the specific city. In addition, it may be worth to provide a more thorough linguistic and semantic analysis of slogans, and they could also be compared with the slogans of the capitals of other continents. The same kind of examination could be performed regarding logos, therefore it could be found out whether there is a difference between European and non-European solutions. Last but not least we must not forget that slogans and logos are always part of a broader city branding concept or strategy, therefore a more thorough examination of such documents also offers further opportunities for research.

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APPENDIX

Slogans and logos of European capitals

Capital	Country	Slogan	Logo
Amsterdam	The Netherlands	I amsterdam	I amsterdam.
Andorra la Vella	Andorra	Capital dels Pireneus	Andorra la Vella Capital dels Pirineus
Ankara	Turkey	-	-
Athens	Greece	This is Athens!	THIS IS ATHENS!
Baku	Azerbaijan	-	-
Vienna	Austria	Now. Forever.	VIENNA NOW ◆ FOREVER
Belgrade	Serbia	#gobelgrade	#GoBELGRADE
Berlin	Germany	The city of freedom	Berlin
Bern	Switzerland	-	BERN

Brussels	Belgium	BXL Moves For You	
Bucharest	Romania	-	-
Budapest	Hungary	Spice of Europe	
Dublin	Ireland	A breath of fresh air	
Gibraltar	Gibraltar	A year of culture	
Helsinki	Finland	-	
Yerevan	Armenia	Feel the warmness	
Kyiv	Ukraine	Everything starts in Kyiv	
Chișinău	Moldova	Discover The Routes of Life	

Copenhagen	Denmar	Wonderful Copenhagen	WONDERFUL COPENHAGEN
Lisboa	Portugal	-	Turismo de Lisboa
Ljubljana	Slovenia	-	-
London	United Kingdom	-	-
Luxembourg City	Luxembourg	Let's make it happen!	LUXEMBOURG LET'S MAKE IT HAPPEN
Madrid	Spain	-	madrid
Minsk	Belarus	Think Minsk	
Monaco	Monaco	Wild Beauty	visit MONACO
Moscow	Russia	-	-
Nicosia	Cyprus	The brightest capital of Europe	NICOSIA

Oslo	Norway	-	VISIT OSLO
Paris	France	City of Love	PARIS
Podgorica	Montenegro	-	-
Bratislava	Slovakia	The city where you find real life	BRATISLAVA
Prague	Czech Republic	prague:emotion	Prague City Tourism
Pristina	Kosovo	-	-
Reykjavík	Iceland	Reykyavík Loves Visitors	REYKJAVÍK LOVES visitors
Riga	Latvia	Live Riga	LIVE RĪGA

Rome	Italy	The eternal city	ROMA
San Marino	San Marino	-	-
Sarajevo	Bosnia and Herzegovina	A city of thousand tales	SA VISIT SARAJEVO
Skopje	North Macedonia	Feel love, feel Skopje	feel Love feel Skopje
Sofia	Bulgaria	Grows, but does not age	-
Stockholm	Sweden	The capital of Scandinavia	Stockholm The Capital of Scandinavia
Tallinn	Estonia	-	Visit Tallinn
Tbilisi	Georgia	The city that loves you	Tbilisi The city that loves you
Tirana	Albania	A colorful feeling	-
Tórshavn	Faroe Islands	-	-
Vaduz	Liechtenstein	Centre of culture	-

Vatican City	Holy See	Miserando atque eligendo	
Valletta	Malta	European Capital of Culture	
Vilnius	Lithuania	The G-spot of Europe	
Warsaw	Poland	Fall in love with Warsaw	
Zagreb	Croatia	Full of experiences	

PUBLIC AUDIT IN THE SYSTEM OF ENSURING REGION ECONOMIC SECURITY (THE ASTRAKHAN REGION EXAMPLE)

Perepechkina Elena
Astrakhan State University
Astrakhan, Tatischev str. 20a, 414056, Russia
econ-help@mail.ru

Samarets Tatyana
Astrakhan State University
Astrakhan, Tatischev str. 20a, 414056, Russia
samarez1@gmail.com

Mamedova Aida
Azerbaijan State University of Economics
Baku, Hasan Aliyev str. 134, Azerbaijan
aida.mammadova@unec.edu.az

Kasumova Lala
Azerbaijan State University of Economics
Baku, Hasan Aliyev str. 134, Azerbaijan
gasimova.lala@unec.edu.az

Babashirinova Esmira
Azerbaijan State University of Economics
Baku, Hasan Aliyev str. 134, Azerbaijan
esmira.babashirinova@unec.edu.az

ABSTRACT

The System of public audit and financial control is a vital tool to combat abuse in redistribution and improvement of the use efficiency of resources belonging to the state in general and a certain region in particular. Control and Auditing Department (CAD) is a Ministry's department that carries out the imposed functions to perform public financial control within its competence. From 2015 to 2018 the Ministry of Finance of the Astrakhan Region's Department carried out control activities in organizations - beneficiaries of the Astrakhan Region budget and in municipalities. From 2015 to 2018 the Ministry of Finance of the Astrakhan Region's CAD carried out 172 audits (inspections). The Average control activity performance was nearly 93%. The share of unsuccessful audits (inspections) was extremely low - only 7% of the total number of inspections while the year 2018 marked the highest dynamics of financial irregularities detected within these four years, i.e. 100%. The numbers in question stand for the efficiency of control activity implementation for these monitored items. The overall number of financial irregularities detected encompasses violations committed during audits on the use of the Astrakhan Region budget and public budget loan funds and the Moscow Region budget funds.

Keywords: *audit, accounting, financial control, violations committed*

1. INTRODUCTION

The Strategy for the Economic Security of the Russian Federation 2030 calls inefficient public administration a challenge and threat for the economic security [1]. Experts estimate that the state share in the domestic economy is only 46% while its share in some industries reaches 70%

and keeps on growing [2]. Such an increase shall come amid improving efficiency of the public resource use accompanied by enhancing control. The System of public audit and financial control is a principal tool to combat abuse in redistribution and improvement of the use efficiency of resources belonging to the state in general and a certain region in particular. In Russia, the term "public audit" pertains to the Accounts Chamber of the Russian Federation and similar bodies in entities and municipalities of the Russian Federation. At the legislative level, the notion "public audit" is considered synonymic with control or a power in the area of budget funds flow control [3]. Decree of the Government of the Astrakhan Region No. 144-П dated April 17, 2014 on the Order of Exercising Power by the Ministry of Finance of the Astrakhan Region for the Internal State Financial Control regulates basic requirements to the Ministry of Finance of the Astrakhan Region's activities in the area of internal state financial control (hereinafter referred to as ISFC) [4].

2. THE STRUCTURE OF THE CONTROL AND AUDITING DEPARTMENT

The Ministry of Finance of the Astrakhan Region is divided into structural bodies, namely departments that exercise certain sets of functions. Control and Auditing Department (hereinafter referred to as CAD) is a Ministry's department that carries out the imposed functions to perform public financial control within its competence. The Department exercises its power for state financial control implementation in the area of budget under the current legislation of the Russian Federation, namely: Constitution of the Russian Federation, federal laws, acts of the President and Government of the Russian Federation, laws of the Astrakhan Region, resolutions, orders, decrees, instructions and guidelines of the Ministry of Finance of the Russian Federation as well as of the Ministry of Finance of the Astrakhan Region.

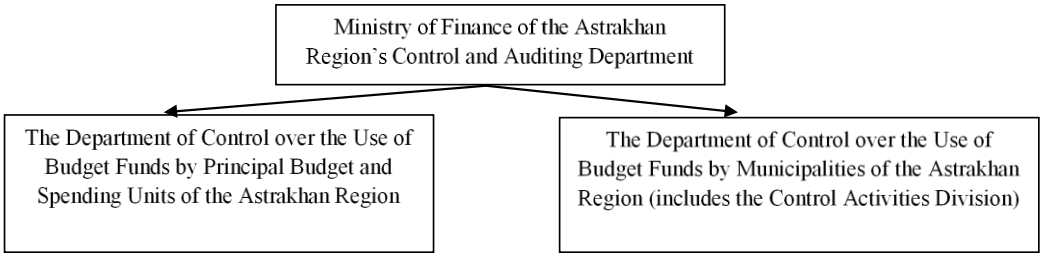


Figure 1: The structure of the Control and Auditing Department

Basing on the power for the state financial control implementation in the Astrakhan Region, CAD exercises a number of its principal functions:

- to collect and analyze of suggestions to carry out control activities;
- to develop a control activities plan draft for a respective fiscal year;
- to carry out control activities;
- within the framework of regular inspections, to carry out counter audits of legal entities and individuals that received the Astrakhan Region Budget funds as well as any material values owned by the Astrakhan Region form the organization under audit.

For each monitored item, the Ministry of Finance of the Astrakhan Region draws and approves a schedule to cover certain issues of an inspection within its field. Once the schedule is drawn, a preparatory stage starts. At this stage, the following components shall be analyzed:

- laws and regulations;
- accounting (financial) statements of the monitored item;
- acts of previous inspections;
- other information regulating and characterizing financial and economic activity of the item. [5]

3. CONTROL METHODS

To carry out control and audit CAD of the Astrakhan Region applies the following methods: an inspection, audit and examination. Inspections are divided into cameral (office), field and counter audits [6]. Table 1 contains a classification of ISFC methods used by CAD of the Astrakhan Region as well as their peculiarities, including requirements to the application of each method, time frame and distinctive features.

Method	Implementation peculiarities	Implementation time frame	Documents on inspection findings
Examination	In the course of an inspection expertise and investigations can be carried out as well as data recording instruments can be used	It can be carried out within the framework of cameral and field audits	Basing on the findings thereof, a conclusion is drawn
Cameral audit	In the course of a cameral audit the Minister of Finance can impose an examination or counter audit	It is carried out within 30 working days upon submission of all necessary data and documents by the monitored item to the Ministry of Finance of the Astrakhan Region	Basing on the findings thereof, an act is drawn
Field audit	It is carried out at the territory of the monitored item and comes into effect upon submission of credentials	Implementation thereof does not exceed 45 working days	Basing on the findings thereof, an act is drawn
Counter audit	It is carried out within the framework of cameral and field audits	Implementation thereof does not exceed 30 working days	Basing on the findings thereof, an act is drawn. This act supplements findings of a field or cameral audit

Table 1: Methods to implement internal state financial control

From 2015 to 2018, CAD performed its activities directly under the schedule of inspections (audits) to be carried out by the department appointed by the Minister of Finance of the Astrakhan Region. The schedule of control activities for the period in question included the following types of inspections:

- inspection on compliance with goals and fulfilment of terms for granting inter-budget transfers and public budget loans form the Astrakhan Region budget, including funds granted for implementation of comprehensive programmes to support pre-school educational institution development;
- cameral audit on compliance with goals and fulfilment of terms for granting subsidies form the Astrakhan Region budget to develop educational institutions implementing preschool educational programmes within the National Programme "Comprehensive Modernization of the Education System in the Astrakhan Region for 2011-2015";
- audits and inspections of principal budget units of the Astrakhan Region;
- audits of beneficiaries of the Astrakhan Region budget funds;
- inspections on compliance with the Budget Legislation in granting budgetary and independent institutions subsidies to meet state targets and subsidies for other purposes and budget investments.

From 2015 to 2018 control activities were carried out:
in organizations - beneficiaries of the Astrakhan Region budget funds, and in municipalities (local budget) (Figure 2).

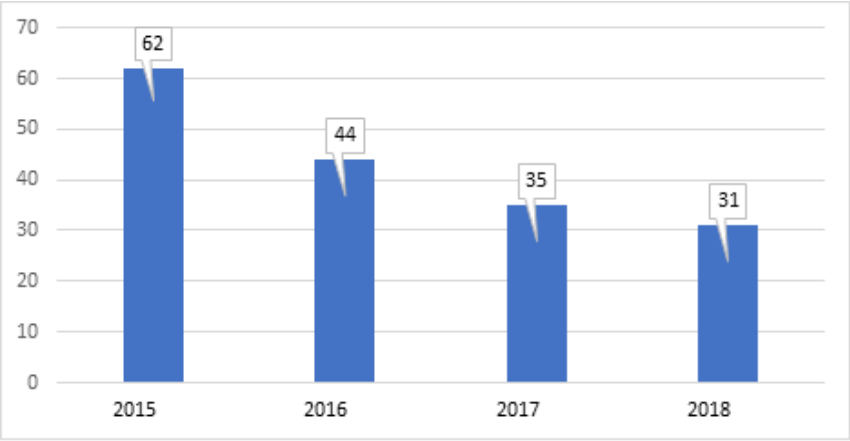


Figure 2: The number of inspections (audits) the Ministry of Finance of the Astrakhan Region's CAD carried out from 2015 to 2018 units

The graph shows that highest percentage of control activities carried out pertains to 2015, i.e. 62 audits (inspections), the following years mark a decline. From 2015 to 2018 the Ministry of Finance of the Astrakhan Region's CAD carried out 172 audits (inspections). Average control activity performance was nearly 93%. Basing on the abovementioned, the share of unsuccessful audits (inspections) was extremely low - only 7% of the total number of inspections while 2018 marked the highest dynamics of financial irregularities detected within these four years, i.e. 100%. The numbers in question stand for the efficiency of control activity implementation for these monitored items [7]. The overall amount of financial irregularities detected encompasses violations committed:

- during audits on the use of the Astrakhan Region budget funds;
- during audits on the use of municipality budget funds;
- during audits on the use of the Astrakhan Region public budget loan funds (Figure 3).

Figure following on the next page

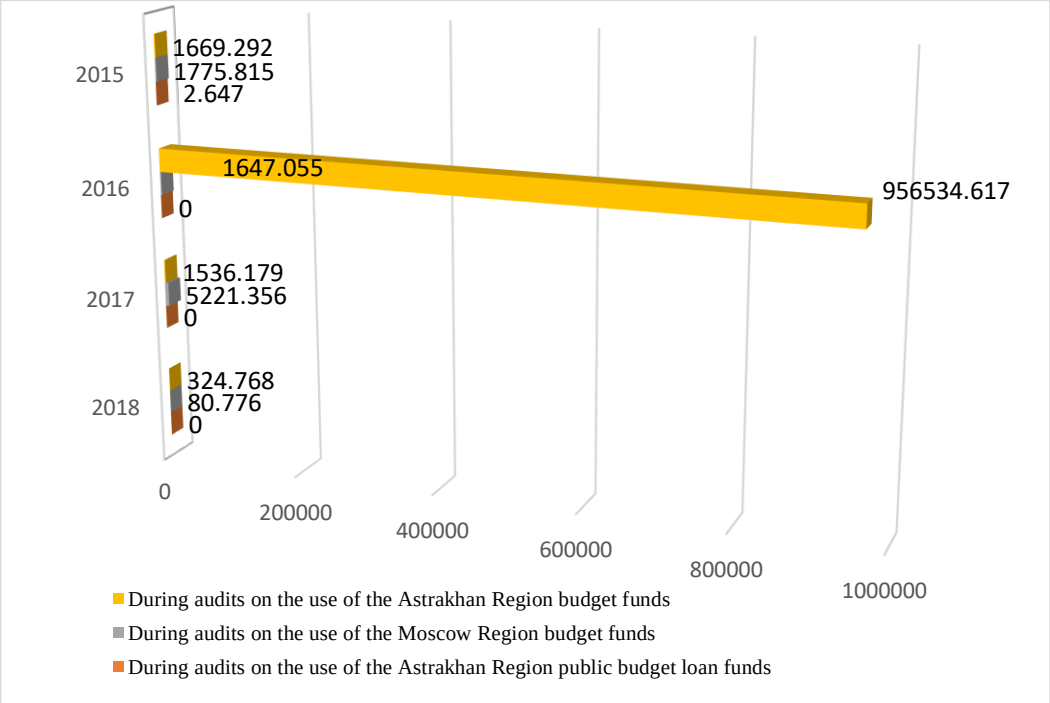
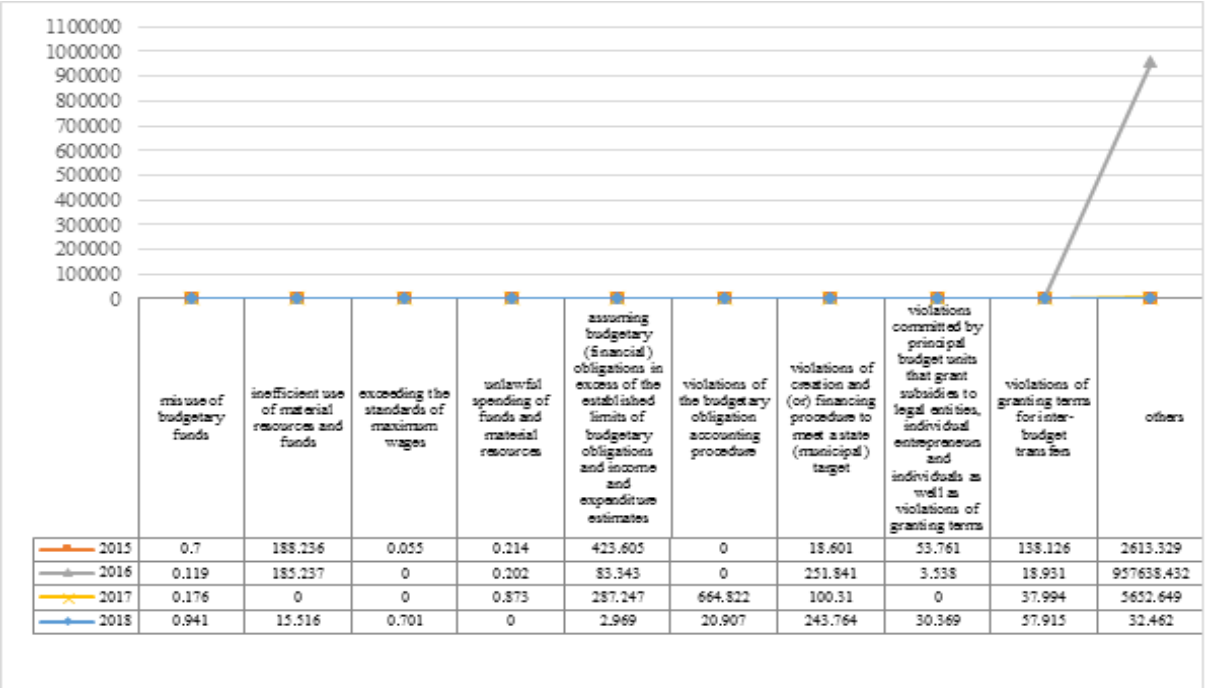


Figure 3: The overall number of financial irregularities detected from 2015 to 2018

According to the findings of audits (inspections) carried out from 2015 to 2018, the overall number of financial irregularities detected was 968792.505 million rubles. The Picture shows the highest percentage of irregularities detected pertains to 2016. These irregularities were mostly detected during audits on the use of the Astrakhan Region budget funds and reached 99.8% of the total number of financial irregularities detected. The annual reporting analysis allowed to elicit a structure of financial irregularities detected in the area of finance and budget from 2015 to 2018. This structure formed a basis to develop diagrams with a financial irregularity dynamics. (Figure 4)



	misuse of budgetary funds	inefficient use of material resources and funds	exceeding the standards of maximum wages	unlawful spending of funds and material resources	assuming budgetary (financial) obligations in excess of the established limits of budgetary obligations and income and expenditure estimates	violations of the budgetary obligation accounting procedure	violations of creation and (or) financing procedure to meet a state (municipal) target	violations committed by principal budget units that grant subsidies to legal entities, individual entrepreneurs and individuals as well as violations of granting terms	violations of granting terms for inter-budget transfers	others
2015	0.7	188.236	0.055	0.214	423.605	0	18.601	53.761	138.126	2613.329
2016	0.119	185.237	0	0.202	83.343	0	251.841	3.538	18.931	957638.432
2017	0.176	0	0	0.873	287.247	664.822	100.31	0	37.994	5652.649
2018	0.941	15.516	0.701	0	2.969	20.907	243.764	30.369	57.915	32.462

Figure 4: Dynamics of financial irregularities detected from 2015 to 2018

The financial irregularities detected in the area of budget were as follows:

- misuse of budgetary funds;
- inefficient use of material resources and funds;
- exceeding the standards of maximum wages;
- unlawful spending of funds and material resources;
- assuming budgetary (financial) obligations in excess of the established limits of budgetary obligations and income and expenditure estimates;
- violations of the budgetary obligation accounting procedure;
- violations of creation and (or) financing procedure to meet a state (municipal) target;
- violations committed by principal budget units that grant subsidies to legal entities, individual entrepreneurs and individuals as well as violations of granting terms;
- violations of granting terms for inter-budget transfers;
- and others [8].

Basing on the formed structure of the Department's financial irregularities, the highest percentage of the total number of irregularities (the specific weight fluctuates from 75.8 to 99.9 % within the entire period) mainly pertains to the column "Other financial irregularities". It mostly consists of accounting irregularities, such as:

- distortion of accounting, violations of the procedure thereof;
- submission of knowingly false budgetary reports or other data;
- violations of the budgetary obligation accounting procedure;
- violations of the property accounting and property registry maintaining procedure (undocumented property, illegal enclosures, property write-off);
- misapplication of the Budget Classification Code (BCC). [9]

The maximum numeric index for this type of violations pertained to 2016 and amounted 957,638.432 million rubles, which equals 99.9% of the total amount of the financial irregularities detected.

4. CONCLUSION

With report and conclusion data integrated, the above grouping features were outlined for risks and threats to the entity economic security formed in the area of budgetary legal relations, which are interpreted as violations. Accounting in the area of budget at the levels of an individual organization and territory compromises two diametrically-opposed functions. It is either a risk driver in the system of economic security, or a guarantee of the territory economic security. [6] Therefore, data studies on CAD of the Astrakhan Region's control activities revealed a high risk for the economic security of the Region. The reason thereof is a weak accounting system and irregularities found in it. The main problems arising in the actual implementation of control activities are as follows:

1) Absence of cooperation over monitored items with other state financial control bodies, which is critical for planning control and audit activities (CAA);
2) Under qualified specialists dealing with monitored items in terms of responsibility for action and inaction performed;
3) Poor financial discipline of monitored items;
4) Absence of the use efficiency and performance internal evaluation system. [10]

The analysis showed the public audit in regions of the Russian Federation is reduced to activities carried out by entity bodies of control and accounts. Meanwhile all principal budget units and managers as well as internal state control bodies represented by the Federal Treasury

at the Russian Federation level and the Ministry of Finance of the Astrakhan Region's Control and Auditing Department at the entity level are involved in the area of audit and control. Therefore, speaking about the system of public audit, we believe, along with control and accounting bodies, it is necessary to include internal audit bodies in the area of budgetary legal relations [11]. It is also suggested to systematize documentation subject to inspections. At any time, this systematization allows to see work performed by an inspector, to determine the amount of uncovered documentation, to involve other employees, if needed, or to forward requests to the directorship of an organization under audit. The example is given in Table 2.

Order No.	Document name	Presence	Date
1	Charter	+	February 5, 1999
2	License	+	March 1, 1999
3	Regulations:		
3.1.	on document management	+	March 3, 1999
3.2. …	on wages …	+	March 3, 1999
4	Accounting Policy	+	March 4, 1999
5	Personnel list / personnel regulations	+	March 4, 1999
6	Individual records	-	
7	Civil law contracts:		
7.1.	Contracts	+	During the year
7.2.	Credit contracts	-	
7.3.	Lease contracts:		
7.3.1.	Non-residential unit (4 Pereulok Serova)	+	March 28, 2012
7.3.2. …	Warehouse (2 Ivanova Str.) …	+	April 5, 2012

Table 2: Monitored item data (system documents)

The table contains information on a schematic description of the monitored item. It can be modified if it is necessary to elicit documentary data on the item. The first part contains all the statutory documentation; the second part - human resources documentation; the third part – financial and accounting documentation. Under inductive study, the organization and its system documents undergo several stages of audit shown in Figure 5.

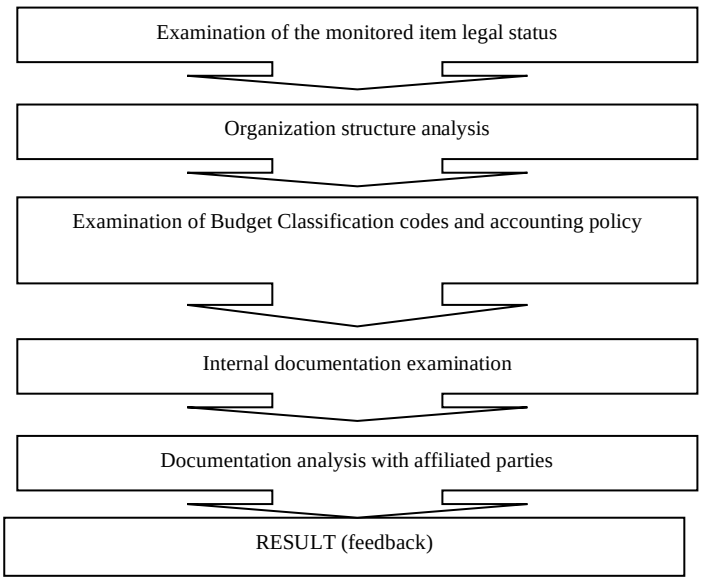


Figure 5: System document audit stages

System documents are critical budgetary institutions' activities and form their basis. Inefficient evaluation of this segment may affect financial results and subsequent monitoring of financial and economic activities. In the course of an inspection, control bodies both have to detect budget funds misuse and budget, civil and labor legislation violations and define goals of the budget funds use efficiency evaluation [12]. Meanwhile the analysis of violations revealed in exercising the power for external public audit (control) by the Chamber of Control and Accounts of the Astrakhan region allows to understand the system of public audit in the Region lacks efficiency and improperly responds to emerging risks and threats for the Region's economic security.

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CYCLICAL FLUCTUATION IN MONEY LAUNDERING: CASE STUDY OF AZERBAIJAN, TAJIKISTAN, UKRAINE AND KAZAKHSTAN

Atik Kerimov
Azerbaijan State University of Economics (UNEC)
Baku, Istiqlaliyyat str., 6, AZ1001, Azerbaijan
atik.kerimov@yandex.ru

Anton Boyko
Sumy State University
Sumy, Rimsky-Korsakov str., 2, 40007, Ukraine
a.boiko@uabs.sumdu.edu.ua

Victoria Bozhenko
Sumy State University
Sumy, Rimsky-Korsakov str., 2, 40007, Ukraine
v.roienko@uabs.sumdu.edu.ua

ABSTRACT

The main purpose of the study is the estimation of the cyclical fluctuation of the environment in different countries, which forms there the preconditions for the money laundering. The relevance of the decision of this scientific problem is that the identification of peaks and recessions in money laundering is the basis for the formation of effective tools for its timely prevention and further minimization. Methodological tools of the research methods were decomposition and harmonic analysis. The information base of the study is the Basel Anti-Money Laundering Index, which describes the level of perception of corruption, the state of financial and public transparency, the risks of the political environment, etc. The object of research is the chosen Azerbaijan, Tajikistan, Ukraine and Kazakhstan, years of research 2009-2019. Investigation of cyclical fluctuation in money laundering in the paper is carried out in the following logical sequence: 1) identification of the trend and cyclical components of the market environment, which forms the preconditions for the money laundering, based on a decomposition and harmonious analysis of the Fourier series; 2) identification of market environment cycle parameters (peak, bottom, cycle duration); 3) estimation of volatility and inertia of the money laundering. The study empirically confirms and theoretically proves that cyclical fluctuation in money laundering is different for the studied countries, namely for Ukraine – 5 years, Tajikistan – 3 years, Kazakhstan – 4 years. Azerbaijan – no cycles detected. The developed methodological support allows applying the most effective instruments of counteraction to the money laundering in accordance with the stage of the cycle of the environment concerning money laundering, which will maximize their effectiveness in terms of neutralization of specific catalysts for the money laundering.

Keywords: *Cycle, Money laundering, Fluctuation, Decomposition, Harmonic analysis*

1. INTRODUCTION

The intensification of globalization processes, the advent of digital money, the liberalization of commodity and financial markets formed the basis for the intensification and growth of money laundering. The United Nations Office on Drugs and Crime estimates that the global money laundering was 2.7% of world GDP in 2009, while as of early 2019 this figure had almost doubled to about 5% of the world GDP or about $2.0 trillion US, which is equivalent to annual GDP of countries such as Italy, Brazil, or Canada. The need to ensure counteraction to money laundering and to reduce the level of threats to the national security of countries requires

expanding and deepening the methodological tools for investigating this process, namely, assessing the cyclicality and volatility of the environment that forms the prerequisites for money laundering. A more detailed study of this process will allow developing effective tools and levers of state influence on countering money laundering, as well as forming a set of preventive measures to minimize the risk of money laundering.

2. LITERATURE REVIEW

The issue of counteracting money laundering and terrorist financing has been widely discussed in the scientific literature. Thus, in their papers, Sharman and Chaikin (2009), Sharman (2010), Levi and Reuter (2012), Levi et al. (2018) investigate the origins of illegal income, as well as methods and markets for their laundering. Moreover, the above authors paid considerable attention to the system of counteracting money laundering. Balakina, D'Andrea and Masciandaro (2017), Barone, Delle Side and Masciandaro (2018) focused on the study of international instruments for hiding criminal proceeds, namely the use of offshore countries in the process of money laundering in the context of globalization processes. One important area of research is to assess the risk of money laundering, both at the level of financial institutions and the state (Kostyuchenko et al., 2018). According to Dmytrov and Medvid (2017), it is advisable to make a national assessment of money laundering based on international rankings. Le Nguyen (2018) explores ways to combat money laundering through financial intermediaries that are actively involved in the process of money laundering. Scientists suggest an optimal strategy for maximizing the benefits of each participant in this process, including financial intermediaries, based on the evolutionary game. In addition, Le Nguyen (2018) suggests using preventive methods to combat the laundering of money in the context of their interaction with financial confidentiality. Arnone and Padoan (2008) considered it expedient to use methods of strict state management of the processes of countering money laundering. Thus, these authors analyze repressive measures against money laundering and the ability of countries to effectively apply these measures. Dobrovic et al. (2018), Tiutiunyk et al. (2019) examine the relationship between tax evasion and the process of money laundering and identify the most effective tools for a comprehensive fight against these phenomena of economic fraud. The analysis of scientific publications made it possible to identify the main factors contributing to the spread of money laundering around the world, namely: high level of shadow economy (Hrytsenko et al., 2018; Levchenko et al., 2018), corruption (Nguedie, 2018; Zakharkina and Abramchuk, 2018), aggravation of social tension and discontent in society (Kyrychenko et al., 2018), the emergence and active use of cryptocurrency for various transactions (Bilan, Đšuzmenko and Boiko, 2019; Bilan et al., 2019; Druhov, Druhova and Pakhnenko, 2019), the spread of cyberattacks (Lyeonov et al., 2018), the low level of openness of public finances (Logan and Esmanov, 2017; Grenčíková et al., 2019), the lack of conformity between the national legislation on combating money laundering and international standards and recommendations (Rubanov et al., 2019; Islam and Khan, 2019), low level of development of the financial system (Kozmenko and Kuzmenko, 2011; Zarutska, 2018; Alikariev and Poliakh, 2018; Djalilov and Ngoc Lam, 2019), lobbying the interests of stakeholders through the owners and (or) top managers of financial institutions (Petrushenko, 2013; Vasylieva et al., 2017) etc. Moreover, the lack of an adequate system of accountability of financial institutions to regulatory authorities creates the conditions for illegal transactions (Vasylyeva et al., 2017; Makarenko et al., 2017; Evana et al., 2019). Special attention should be paid to the scientific approach to assessing the volume of money laundering (Levchenko et al., 2019), which takes into account the operations through the real sector of the economy, state and local budgets, as well as the segment of financial intermediaries, adjusted for the level of shadowing of the economy and indicators of the quality and effectiveness of state regulation of the national economy. A separate area of research is devoted to state regulation of financial institutions in the context of

countering money laundering, as well as evaluating the effectiveness of regulatory agencies in the country. In particular, Subeh and Boiko (2018) proposed a methodological approach to assessing the effectiveness of the national system for countering money laundering and terrorism financing based on the provisions of the theory of queues. Despite a detailed study of the issue of money laundering, namely its nature, implementation features, and mechanism of minimization, scientists have not sufficiently disclosed the detailed aspects of its development. Thus, the cyclicality of money laundering has been studied only in fragments. Considerable attention is also paid to the cyclicality of economic processes by such scientists as (Bilan, Brychko, et al., 2019; Buriak et al., 2019), analyzing the relationship between the economic cycle and the confidence in financial institutions.

3. METHODOLOGY AND RESULTS

The determination of peaks and drops in the intensity of money laundering is the basis for the formation of effective tools for its timely prevention and subsequent minimization. The information base of the study is proposed to be formed based on the Basel AML Index (the Basel Anti-Money Laundering Index). This index includes 14 indicators, including:

1) Indicators of the quality of the state system for countering money laundering and terrorism financing. These indicators include data from the FATF Mutual Assessment Reports, the Financial Secrecy Index from the Tax Justice Network, and data from the US International Narcotics Control Strategy Report. This group of indicators has a share of 65% in the index.
2) The Corruption Perceptions Index, which has a share of 10%;
3) Indicators of financial transparency and standards: corporate transparency index, data from the WEF Global Competitiveness Report: the strength of standards for securities market regulation, and the World Bank's IDA resource allocation index. These indicators together have a 15% share in the Basel AML Index;
4) Indicators of public transparency and accountability (a share of 5%);
5) Indicators of political and legal risk (a share of 5%).

Thus, the analysis of the composition of the Basel AML Index provides an opportunity to assert a comprehensive characteristic of the process of money laundering using this complex indicator and, accordingly, the validity of its application in the study of the cyclical component of the prerequisites for the emergence of this process. Confirmation of the hypothesis about the differences in the cyclicality of money laundering for different countries will allow, in the future, forming a differentiated set of tools to combat financial fraud. Thus, the input information is summarized in Table 1.

Country	Year						
	2012	2013	2014	2015	2016	2017	2018
Azerbaijan	6.49	6.48	6.46	4.9	4.84	4.78	4.7
Tajikistan	8.12	8.27	8.34	8.26	8.19	8.28	8.3
Ukraine	6.62	6.47	6.55	6.56	6.57	6.52	6.06
Kazakhstan	5.12	5.94	5.94	5.93	5.88	6.42	6.36

Table 1: Dynamics of the Basel AML Index for Azerbaijan, Tajikistan, Ukraine, and Kazakhstan during 2012-2018
(Source: Data of Basel Institute on Governance)

The Basel AML Index is essentially a disincentive indicator, meaning that the higher its value, the more active is the process of money laundering in the country. The absolute values of this indicator (Table 1) indicate the slightest prerequisites for money laundering in Azerbaijan and the gradual reduction of the Basel AML Index during 2012-2018 in this country.

At the same time, the highest value of the Basel AML Index is typical for Tajikistan since the studied indicator did not decrease below 8.1 units during the study period. The authors consider the sequence of implementation of the methodological approach to assessing the cyclicality and volatility of the environment, which forms the prerequisites for money laundering. The first stage involves the study of the cyclical component of the risk of money laundering based on the Basel AML Index, which provides for the gradual implementation of the following steps:

1) Decomposition of the time series for assessing the risk of money laundering by filtering the trend and cyclical components;
2) Formalization of the trend component;
3) Evaluation of the cyclical component;
4) Visualization of the initial time series, as well as the trend and cyclical components;
5) Identification of characteristics such as peak, bottom, duration of the cycle (if confirmed).

The type of the trend component was initially determined, formalizing its specification by constructing an equation with a high coefficient of determination. Thus, for Azerbaijan, it is advisable to formalize the trend component of the time series of the Basel AML Index using a linear function (Fig. 1a, Table 2). In turn, the specification of the trend component of the time series of the Basel AML Index in the context of Tajikistan takes the form of a power function (Fig. 1b, Table 2), a polynomial function for Ukraine (Fig. 1c, Table 2), and a linear function for Kazakhstan (Fig. 1d, Table 2).

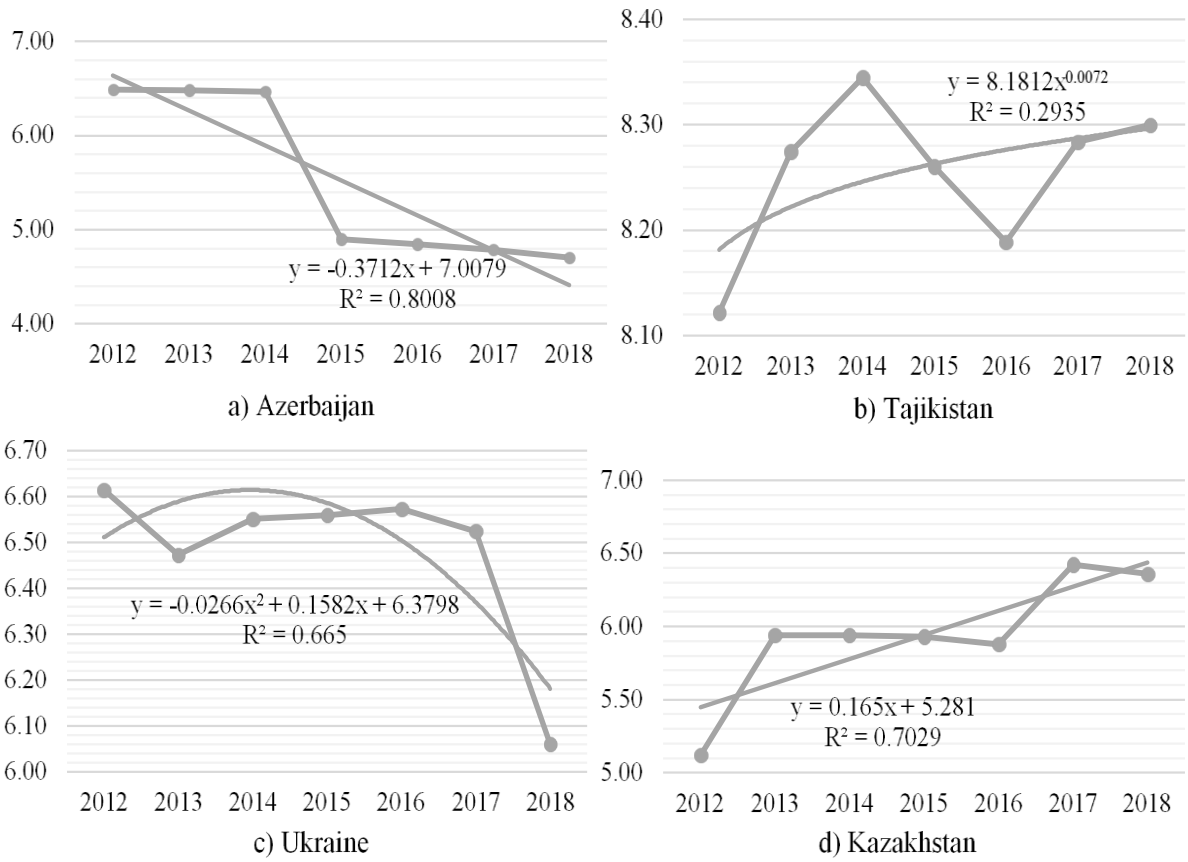

Figure 1: Visualization of the baseline time series of the Basel AML Index, trend and cyclical components in the context of Azerbaijan (a), Tajikistan (b), Ukraine (c), Kazakhstan (d) for the period from 2012 to 2018
(Source: proprietary calculations)

Country	Type of equation
Azerbaijan	$ALM_t^A = -0.3712 \cdot t + 7.0079$
Tajikistan	$ALM_t^{\mathrm{T}} = 8{,}1812 \cdot t^{0.0072}$
Ukraine	$ALM_t^U = -0{,}0266 \cdot t^2 + 0.1582 \cdot t + 6.3798$
Kazakhstan	$ALM_t^{\mathrm{K}} = 0.165 \cdot t + 5{,}281$
Legend: ALM_t^A, $ALM_t^{\mathrm{T}}, ALM_t^U$, ALM_t^{K} – an indicator for assessing the risk of money laundering for the t-th year for Azerbaijan, Tajikistan, Ukraine, Kazakhstan, respectively; t – indicator of the year.	

Table 2: Formalization of the trend component for the Basel AML Index in terms of the countries under consideration
(Source: proprietary calculations)

Having determined the trend component for each of the countries under consideration (Azerbaijan, Tajikistan, Ukraine, Kazakhstan) in the framework of the Basel AML Index, we will evaluate the cyclical component by subtracting the trend component calculated using the formulas in Table 1 from the original time series. The results of this step are shown in the lines marked as trend Table 3.

Country	Indicator	Year						
		2012	2013	2014	2015	2016	2017	2018
Azerbaijan	time series	6.49	6.48	6.46	4.9	4.84	4.78	4.7
	trend	6.64	6.27	5.89	5.52	5.15	4.78	4.41
	cyclical component	-0.14	0.22	0.57	-0.62	-0.31	0.00	0.29
Tajikistan	time series	8.12	8.27	8.34	8.26	8.19	8.28	8.3
	trend	8.18	8.22	8.25	8.26	8.28	8.29	8.30
	cyclical component	-0.06	0.05	0.10	0.00	-0.09	0.00	0.00
Ukraine	time series	6.62	6.47	6.55	6.56	6.57	6.52	6.06
	trend	6.51	6.59	6.62	6.59	6.51	6.37	6.18
	cyclical component	0.10	-0.12	-0.06	-0.03	0.07	0.15	-0.12
Kazakhstan	time series	5.12	5.94	5.94	5.93	5.88	6.42	6.36
	trend	5.45	5.61	5.78	5.94	6.11	6.27	6.44
	cyclical component	-0.33	0.33	0.16	-0.01	-0.23	0.15	-0.08

Table 3: Dynamics of the Basel AML Index, as well as its trend and cyclical components in terms of countries under consideration
(Source: proprietary calculations)

At the second stage, the authors will specify the cyclical component of the time series using the Fourier harmonic analysis, which allows describing the phenomenon of periodic recurrence using mathematical expressions and analyzing it. The harmonic analysis ignores the nature of seasonal fluctuations, and only the presence of the cyclical component in the dynamic series is important. Thus, the cyclical component is formalized using the Fourier harmonic analysis (the Fast Fourier Transform) for countries as follows:

- for Azerbaijan:

$$tt_j := -0.396 \cdot \cos\left[2 \cdot \pi \cdot j \cdot \frac{1}{4} + (-1) \cdot 0.611\right] + -0.411 \cdot \cos\left[2 \cdot \pi \cdot j \cdot \frac{2}{16} + (1) \cdot 2.325\right] \quad (1)$$

- for Tajikistan:

$$tt_j := 0.04 \cdot \cos\left[2 \cdot \pi \cdot j \cdot \frac{1}{4} + (-1) \cdot 1.565\right] + 0.044 \cdot \cos\left[2 \cdot \pi \cdot j \cdot \frac{2}{8} + (-1) \cdot 2.247\right] \quad (2)$$

- for Ukraine:

$$tt_j := 0.091 \cdot \cos\left[2 \cdot \pi \cdot j \cdot \frac{2}{8} + (1) \cdot 0.606\right] + 0.086 \cdot \cos\left[2 \cdot \pi \cdot j \cdot \frac{3}{8} + (1) \cdot 1.654\right] \quad (3)$$

- for Kazakhstan:

$$tt_j := 0.225 \cdot \cos\left[2 \cdot \pi \cdot j \cdot \frac{1}{4} + (-1) \cdot 2.194\right] + 0.27 \cdot \cos\left[2 \cdot \pi \cdot j \cdot \frac{2}{4} + (1) \cdot 1.886\right] \quad (4)$$

The volatility and persistence of time series were calculated as part of the third stage of the methodological approach to assessing the cyclicality and volatility of the environment, which forms the prerequisites for money laundering. Absolute volatility is an indicator of the amplitude of fluctuations of the Basel AML Index, and its formal degree is the ratio of the span (the difference between the maximum and minimum possible levels of the original time series), weighted by the mean square deviation:

$$\boldsymbol{V_t^a = \frac{\max_t y_t - \min_t y_t}{S}} \quad (5)$$

where V_t^a – absolute volatility;
y_t – the level of the time series;
S- standard (mean square) deviation of the time series.

Relative volatility is defined as the ratio of the absolute volatility of the country under consideration to the maximum value of absolute volatility among the countries under consideration. The level of persistence of the time series (Basel AML Index) was estimated based on the Hurst exponent. In theory, there are three different classifications for different Hurst exponents:

- at 0 <H< 0.5 – an anti-persistent time series, i.e. a series in which there is an average return: if the system develops for a certain period, then the system's activity is expected to decline in the next period. The closer the H value is to zero, the more stable the system's fluctuations are.
- H=0.5 – corresponds to a stochastic time series;
- 0.5< H < 1 – persistent time series or trend-resistant series. This time series is characterized by the effect of the long memory. If the number has started to grow, we should expect further growth. If the number has started to decline, this trend will continue in the future.

The following Hurst metric is used to calculate persistence:

$$\frac{R}{S} = (\alpha \cdot N)^H \quad (6)$$

where H – the Hurst exponent;
N – number of observation periods;
α – a positive number, the specified constant.

Hence

$$H = \frac{\log\left(\frac{R}{S}\right)}{\log\left(\alpha \cdot N\right)} \tag{7}$$

where the scope of the accumulated deviation:

$$R = \frac{\max\limits_{1 \le u \le N} Z_u - \min\limits_{1 \le u \le N} Z_u}{\sigma_u} \tag{8}$$

$$Z_u = \sum_1^u (y_i - \bar{y}) \tag{9}$$

where $\bar{y}$ – the arithmetic value of the time series;
σ_u – the average square of the accumulated deviation.

Thus, turning to the definition of persistence in the time series of the Basel AML Index, it is first necessary to calculate the deviation of the current level of the time series from the mean over the study period. After interim calculations, the Hurst exponent for the Basel AML Index for the countries under consideration was determined, the results of which are presented in Table 4.

Country	Persistence			
	actual value		cyclical component	
Azerbaijan	0.2064	anti-persistent time series	X	X
	X	X	0.5895	persistent time series
Tajikistan	0.5938	persistent time series	X	X
	X	X	0.5644	persistent time series
Ukraine	0.6003	persistent time series	X	X
	X	X	0.4714	anti-persistent time series
Kazakhstan	0.6548	persistent time series	X	X
	X	X	0.5303	persistent time series

Table 4: Persistence of actual values and cyclical components of the time series of the Basel AML Index
(Source: proprietary calculations)

Thus, in the context of the countries under consideration, stochastic time series were not found either in actual data or in cyclical components. For those time series for which the Hurst exponent is less than 0.5 units, we can conclude that they are anti-persistent, i.e. a gradual return to the average level of the series and a change in the trend. For the growing time series, we should expect a decline in the future perspective and the opposite trend for declining time series. This applies to countries such as Azerbaijan – the downward trend during 2012-2017 will be replaced by a growing one, while for Russia (with the current growth in the prerequisites for money laundering) we should expect a decrease in this trend in the future. At the same time, countries such as Tajikistan, Ukraine and Kazakhstan were trend-resistant in the context of the Basel AML Index.

A separate area of research is the identification of the peak, bottom and duration of the cycle in the study of the environment, which forms the prerequisites for money laundering (table 5). Analyzing the characteristics of the prerequisites for money laundering within the countries with economies in transition, we note that Tajikistan has a typical cycle duration of three years, and the duration of the cycle of money laundering is the smallest in comparison with other countries.

Country	Characteristics of the money laundering process		
	Peak	Bottom	Cycle duration
Azerbaijan	2014	2015	not revealed
Tajikistan	2014,2017	2016	3 years
Ukraine	2012,2017	2013, 2018	5 years
Kazakhstan	2013, 2017	2016	4 years

Table 5: Peak, bottom and duration of the cycle of processes related to money laundering (Source: proprietary calculations)

4. CONCLUSION

The proposed method allows determining the cyclical fluctuations of the process of money laundering, namely its prerequisites, at the level of different countries of the world. This will allow predicting the peaks of laundering and neutralizing them in the future. The reliability of this task is confirmed by the determination that the laundering processes are not stochastic, and therefore predictable. The hypothesis that there are no individual prerequisites for the development of money laundering process depending on the country has been confirmed since the process of money laundering has an international character and is not limited to the territory of one country. Fraudsters from one country usually use financial institutions of several countries for money laundering, trying to hide the real sources of funds' origin. In addition, as it was established at the previous stages of the study, the reasons for the development of the money laundering process in the countries under consideration are both national prerequisites and global transformations. Thus, the proposed methodological approach and the obtained practical results provide the state financial monitoring agencies with the possibility to form strategic action plans for the implementation of the most effective tools for countering money laundering according to the stage of the cycle that forms the environment for money laundering.

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THE DIMENSION OF FINANCING OF NON-PROFIT ORGANIZATIONS IN SLOVAK REPUBLIC

Dagmar Hraskova
University of Zilina, Faculty of Operation and Economics of Transport and Communications, Department of Economics, Univerzitna 1, 010 26 Zilina, Slovak Republic
dagmar.hraskova@fpedas.uniza.sk

ABSTRACT
The non-profit sector is a frequently discussed topic in the current economic environment of the Slovak Republic. Nonprofit organizations do not focus on profit as a priority, but respond to the whole range of problems that occur in society. Since not all problems can be solved and covered by the state, precisely for this purpose there are non-profit organizations whose mission is to provide services of general interest. Non-profit organizations act as legal entities on the market and are in charge of providing services of general interest in the fields of health, education, culture, research and development, sports and community development, etc. It is clear from the name that making profit is not the primary goal of their existence in this type of organization. Funding is becoming a necessity for non-profit organizations. Since they do not primarily earn profits, they are dependent on raising money from other sources. The article focuses on the issue of financing non-profit organizations. The aim of the article is to analyze available forms for financing the needs of non-profit organizations in Slovakia. I work with the hypothesis that only one source of funding for non-profit organizations is scarce and it is necessary to accumulate funds from a larger amount of sources. The financing of non-profit organizations is therefore a very interesting issue and is undoubtedly a very demanding set of activities that a non-profit organization has to address in order to convince potential donors to decide for its mission to provide funding. The article also addresses the way of financing through fundraising as a new approach and highlights the function of fundraisers in the issue of financing non-profit organizations with an emphasis on creating a fundraising plan.
Keywords: *financing of non-profit organizations, self-financing, fundraising, funraiser*

1. INTRODUCTION

The current global system of the company is connected with the increasing use of information and communication technologies in all spheres of its economic activities. The transition to the global economy is changing the nature of government, creating the preconditions for applying decentralized forms of coordination and aggregation of the preferences of individual organizations in a democratic society. In the process of globalization, new market conditions for economic operators are expanding as a result of changes in the consumer and business environment, as the process of globalization increases competition in markets. In previous economic periods conditions competition has been limited mainly to the national economy and currently, in conditions of integrated economics competition has crossed national borders and has become global. In the market economy, national markets played a dominant role; in the conditions of the new economy, their character changes. The processes of globalization and the emergence of virtual markets contribute to the intensification of competition in most markets, so that their functioning creates the preconditions for increasing resource allocation efficiency in the economy, while changing conditions for the functioning of economies require new types of economic policy. It is also true that many of the government measures that have been successfully applied to date have become less effective in new market conditions.

2. THEORETICAL FOUNDATION

Non-profit sector organizations in the current economy perform different roles, they are providers and distributors of services, participate in the creation of a society-wide consensus, support innovation and contribute to the development of a democratic society in general. The non-profit sector is made up of organizations that operate in the space between the state and citizens and are one of the basic pillars of society. In the current economy in Slovakia, alongside the business and government sectors, the non-profit sector is gradually forming (third, voluntary, independent). Third sector organizations operate in an environment mixed from different kinds of government, business, self-government and non-profit institutions, this institutional mix is typical of today's advanced democratic countries (Sedivy and Medlikova, 2017).

- **Non-profit sector and state -** The mutual links between the state and the non-profit sector narrow many times exclusively to financial relations, between direct and indirect financial support from the state (Belickova and Bukovova, 2007). Direct state financial support to non-profit organizations is provided through public budgets. Indirect state financial support is based primarily on tax and customs relief. However, the relations of the third sector cannot be narrowed to financial relations only; legislative activity, social policy and so on (Hladka et al., 2017).
- **Non-profit sector and self-government -** Self-government is a non-state article of public power, has typical power tools (eg issued various regulations, decisions, etc.) and at the same time represents a basic form of citizen participation in governance. For this reason, the self-government and the third sector are well-placed to cooperate in various areas, eg. involving citizens in the solution of the municipality at public meetings, co-organizing the local referendum, providing counseling services for the municipality, etc.
- **Non-profit sector and business sector -** Government and state agencies are not the only potential partners of non-profit organizations in solving public problems. Increasingly, the business sector is also involved in this effort by providing, for example, financial support, organizational and managerial skills, technical knowledge, etc (Bachmann, 2011).

These forms of cooperation can take a variety of forms of cooperation, coordination, institutional cooperation, association of organizations. Cross-sectoral cooperation makes a significant contribution to increasing the efficiency of each sector's activities, exploiting the strengths of each sector, and can provide a significant boost to their growth. The basic prerequisite for doing business is an optimal capital structure (Belas, et al., 2019). Likewise, successful working capital management also brings value to organizations (Bin, et al., 2019). The basic prerequisite for the functioning of a non-profit organization, like any other public or commercial sector, is to ensure its financing. Each body must in some way raise resources to cover the costs of its functioning and the activities it develops. In non-profit organizations, this financial side is associated with their specifics, which are in many ways due to their service status in the company. Financing the non-profit sector is therefore an interesting area that combines economic, financial and social elements. Sustainable development of these organizations in Slovakia still encounters financial problems that are specific to the non-profit sector and, to a certain extent, more characteristic than for the business or public sector. Specificity is manifested especially in the basic mission of the non-profit organization and its fulfillment. The primary objective of the existence of a non-profit organization is not to make a profit, but to promote and achieve certain public benefit objectives. At present, we may encounter multiple classifications of income sources for non-profit organizations (Salaga et al., 2015).

In general, the main criteria for allocating funding sources are:

- method of acquisition - internal sources from own activities, external sources from another source,
- origin of funds - domestic, local, foreign sources
- nature of the financing entity - public resources - state, local government - individual resources, society, foundations and private resources - business entity,
- form of income - gifts, collections, grants, orders, etc (Hraskova, 2012).

3. ANALYSIS OF FINANCING OF NON-PROFIT ORGANIZATIONS IN THE CONDITIONS OF SLOVAK REPUBLIC

The basic principle of financing the non-profit sector is its multi-source nature. Its essence is to use multiple sources of income in a non-profit organization to ensure its own independence from a single financial source, as well as to avoid the negative consequences of its unexpected failure. The non-profit sector in Slovakia is currently financed in the following ways:

- state funding;
- partnership with other sectors;
- obtaining finance from own activities,
- use of EU funds and others.

3.1. Funding of non-profit organizations from state resources

In the case of public finances, the Slovak Republic has various legislative mechanisms at its disposal to co-finance Slovak non-profit organizations. These mechanisms have two basic forms of direct and indirect support for non-profit organizations. Fonadova and Hyanek also deal with this issue in their publication (Fonadova and Hyanek, 2015).

3.1.1. Direct form of support for non-profit organizations

The current functioning of the direct form is considered to be underdeveloped and insufficiently transparent. In the case of direct form, it is necessary to take into account in particular the mechanisms of provision - subsidies and grants, implementation of contracts and contracts in which the non-profit organization provides services to the state, redistribution of revenues from lotteries, public collections and other similar games. Direct support mechanisms for non-profit organizations operate at different levels of government and self-government.

3.1.2. Indirect form of support for non-profit organizations

It is a financial support of non-profit organizations whose amount cannot be determined and quantified immediately after the state financial support. In Slovakia it has several forms eg. exemption from taxes and duties where the State waives part of the revenue that it would otherwise have received in taxes, by allowing legal and natural persons to exempt their income from a certain type of tax or customs duty, 2% personal income tax, assignment 2% persons, deduction of donation from the tax base and others (Bukovova, 2012). Despite the mechanism by which the state allowed both legal and natural persons to write off part of the amount of the donation from the tax base, many entities did not avail themselves of this option because of the statutory setting of low, non-motivating depreciation rates. As a result, the donation (its write-off from the tax base) was no longer perceived by many recipients of donations as an indirect form of state support but as private income, as the donor's share in this case was much larger than.

3.2. Funding of non-profit organizations from private sector

Private resources in the context of non-profit organization funding include endowment and business resources. As with public sources and private sources, we distinguish between foreign

and domestic sources. Foreign endowment resources are still the strongest financial base for financing non-profit organizations not only in Slovakia but also in other transition countries. Domestic endowment resources - most of them are operational to support their own programs and activities, only a small number of them are grant funds that provide funding to other institutions or individuals. In recent years, community foundations have been established in Slovakia, which are gradually building their own base. Corporate donation is the willingness of an enterprise to devote some value to a public benefit purpose, either one-time or repeatedly, without claiming any counter-service. Another level of cooperation between a business entity and a non-profit organization is represented by longer-term strategic partnerships, which may also operate on a more commercial basis of so-called philanthropic marketing or in the form of a traditional commercial relationship based on sponsorship.

3.3. Funding of non-profit organizations from individual sources

Individual sources in the context of financing non-profit organizations are those obtained from individual donors, specific people or individuals. The method of obtaining funds from individual donors is considered to be one of the most stable, although its success is often conditioned by high demands. This method involves a large number of "small donors" where the loss of one or two does not lay an organization.

3.4. Self-financing of non-profit organizations

Self-financing is a process in which a non-profit organization uses its capacities, whether human, material, financial, know-how, etc. to create and raise resources in fulfilling their mission. Self-generating resources help an organization prevent uncertainties from external funding. Self-financing allows the organization to obtain the so-called. free financial resources which it may use to cover its own operating or administrative costs or to finance priorities at its discretion. Thus, the organization is not forced to adapt its activities and projects to the requirements and conditions of donors. Obviously, raising resources by self-financing places increased demands on the quality of financial management and requires a higher degree of professional management throughout the organization. However, if these processes are well managed, it ultimately brings greater financial stability for the organization. Naturally, if a non-profit organization opts for self-financing, it must also face multiple risks, which may concern both the products and services offered and the organization itself and its capacities (Svidronova and Vacekova, 2012). From an internal point of view, an organization can overestimate its capabilities, which can have a negative impact not only on its bank accounts, but also on the image of the public and donors, the motivation of its own employees and volunteers, or the overall position in the community.

3.5. Fundraising - financial support of the non-profit sector

In today's complex business environment, it is not easy to realize your ideas, dreams or activities. This is also the reason why the English word fundraising is becoming increasingly popular among members of non-profit and civic associations. People who know fundraising know that this way hides the key to possibilities. Fundraising is a method of professionally obtaining financial and non-financial resources for the activities of non-profit organizations. It is a planned, organized and strategically oriented activity that results in obtaining the necessary funding or material or non-proprietary resources or assistance, such as: gifts, volunteer work, know-how, management experience, information, etc. Fundraiser is characterized as communicative and innovative person able to successfully present and establish contacts. As it is not just monetary support, it adds a new perspective on obtaining support or finance in the issue of non-profit organizations (Boukal, 2013). There is no literal translation for the word fundraising in Slovak, but economists cite a few examples in the literature - collecting public

funds, collecting funds or raising funds for funds, foundations, projects from companies and sponsors, and a planned activity aimed at attracting donors or sponsors. An important aspect of all fundraising planning is the systematicity and division of resources into financial and non-financial. Their non-monetary resources may include the material resources they acquire. The most widespread form of these resources is barter, when the non-profit organization provides eg. some form of promotion for the delivery of some material. Another intangible resource may be rights where the organization may be given space on some domain to promote the logo at a symbolic price. Information is also an intangible resource that helps nonprofits make early awareness or printed educational material. Businesses also help to non-profit organizations by providing their own employees who can volunteer for non-profit organizations. Substantial support for non-profit organizations is represented by services that can be offered to them in the form of specialist counseling. Fundraiser is a person who is professionally engaged in fundraising, oversees the whole project process from its preparation, addressing donors, communicating with them to its implementation and evaluation. There are two types of fundraisers, external and internal fundraiser. An internal fundraiser is usually a core employee of an organization in a leadership position whose main task is to raise funding, especially for larger organizations and this position does not exist in small non-profit organizations. An external fundraiser is a legal or natural person who is contractually obliged to perform this function. The problem arises when this fundraiser is not successful in its activities, the organization may eventually lose more than are its acquired resources. Each organization must consider whether it is able to obtain the necessary resources on its own or will have to contact an external specialist (Burnett, 2002). In this case, it is also important to address the issue of the financial health of the organization and this issue is discussed in more detail by Yakymova and Kuz (Yakymova, Kuz, 2019). According to Weissova, et. al, the financial situation of the organizations is based on the past situation of the organization as well as on the future outlook of organization (Weissova, et al., 2015). Should the financial stability of the organization prove to be in decline, then it is possible to resolve this situation through bankruptcy models (Svabova, Durica, 2019). A similar issue in their publication was analyzed by the authors Kovacova et al. (Kovacova, et al., 2019).

3.5.1. Fundraising project

An important part in attracting a new donor is to create an interesting fundraising project that can attract the attention of the person to the aim of the project and want to subsidize it. Fundraising is important to include in all activities that are involved in the functioning of the organization. During the preparation of the project application, workers collect all the necessary materials and form the basis for the entire project. By analyzing the financial budget, they will find out and evaluate where the funding is missing and to which sphere of the organization it is appropriate to direct the project. The basic prerequisite for successful fundraising is a well-developed project in which all those who are involved in its implementation in any way should participate (Burnett, 2002). The fundraising project should include this aspects:

- project objectives and strategy for achieving them,
- specification, for who the project is intended,
- resources needed and where to get them - identifying potential donors and partners
- all relevant financial information - sources already acquired, contractual obligations,
- clear, coherent and motivating, inspiring respect for the work done by the organization,
- convincing and motivational arguments for gaining business support, etc.

However, in practice occur in fundraising many errors. In particular, they are committed by less experienced fundraisors, which implies that fundraising art needs to be taught for a long time, even several years.

The most common mistakes in fundraising include over-focusing on organizational equipment and operating costs, a large campaign without carrying out preparatory studies and action surveys that will not bring enough funding, underestimated long-term fundraising and partnership planning and lack of recognition. Regarding the issue of optimal capital structure, it is not possible to specify this indicator for non-profit organizations because, according to Shkodra, there is no model to which we can accurately quantify this indicator (Shkodra, 2019). Buzinskiene also deals with capital structure issues (Buzinskiene, 2019).

4. CONCLUSION

Non-profit organizations play an important role in society, responding very flexibly to their needs. They cover a wide range of activities in the field of health, social care, culture, education, environmental protection, etc., thus meeting the social needs of the country. The strengths of non-profit organizations also include the trust of disadvantaged groups as they are generally more sensitive to the needs of society and are therefore particularly capable of identifying priorities in service offerings and helping to adapt to real local needs. Because of their scope and focus, they are flexible and innovative in their approach to problem-solving and less bureaucratic in their work, and are suitable for enhancing people's civic awareness and capabilities. In general, NGOs are seen to be transparent in their activities and responsive to their actors and the general public, providing meeting space for diverse groups and interests that address public issues and seek solutions to them, keeping public space open to new perspectives and excluded groups. Non-profit organizations also have weaknesses, which often include a lack of resources - both human and material - to manage their projects. Many times they find themselves dependent on donors and therefore on their priorities.

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GREEN INTELLECTUAL CAPITAL AND COMPANY PERFORMANCE

Eldar Khanlarov
Azerbaijan State University of Economics (UNEC)
Baku, Istiqlaliyyat str., 6, AZ1001, Azerbaijan
Khanlarov.eldar@gmail.com

Serhiy Lyeonov
Sumy State University
Sumy, Rimsky-Korsakov str., 2, 40007, Ukraine
s.leonov@uabs.sumdu.edu.ua

Lyudmila Starchenko
Sumy State University
Sumy, Rimsky-Korsakov str., 2, 40007, Ukraine
l.starchenko@econ.sumdu.edu.ua

ABSTRACT

The paper aimed to analyse the relationship between green intellectual capital and company performance. The authors generalised the approaches to define green intellectual capital. The summarising findings showed that the scientists had not accepted the universal approach to define green intellectual capital. The authors proposed to analyse the green intellectual capital as a combination of three core element as follows as: green human capital; green structural capital; green communication channels. The findings proved that ongoing tendency on considering the green features of the company during the making decisions by the stakeholders required the strengthening of the green intellectual capital as a core element of the sustainable business model. The hypothesis of the investigation was checking the relationship between core elements of the green intellectual capital and company performance. The authors estimated the company performance through three types of performance: social, economic and green. The raw data was collected from the open financial and non-financial reports and findings of the survey of 150 managers of small and medium enterprises. The survey was conducted using the Google platform and email. The study used the second-generation multivariate statistical analysis. The findings proved the positive statistically significant relationship between green human capital, green structural capital and all components of company performance. At the same time, the third element of green intellectual capital (green communicational channels) had a negative statistically significant relationship with green performance. The findings allowed concluding that analysed companies had not adopted the implementing of the green features in the operational activities. The managers should develop and implement the best experience in developing green intellectual capital. Besides, the managers should pay attention to the improving of the green communication channels through strengthening the relationship with green investors, consumers and other stakeholders.

Keywords: *Green economy, Green intellectual capital, Human resources, Stability, Sustainable business model*

1. INTRODUCTION

The reorientation of the world economics to the development considering green aspects requires the appropriate adaptation of the company's policy. Thus, the management of the companies should consider the new green trends in the global market and increasing the efficiency through the balancing of the economic, ecological and social interests of the stakeholders.

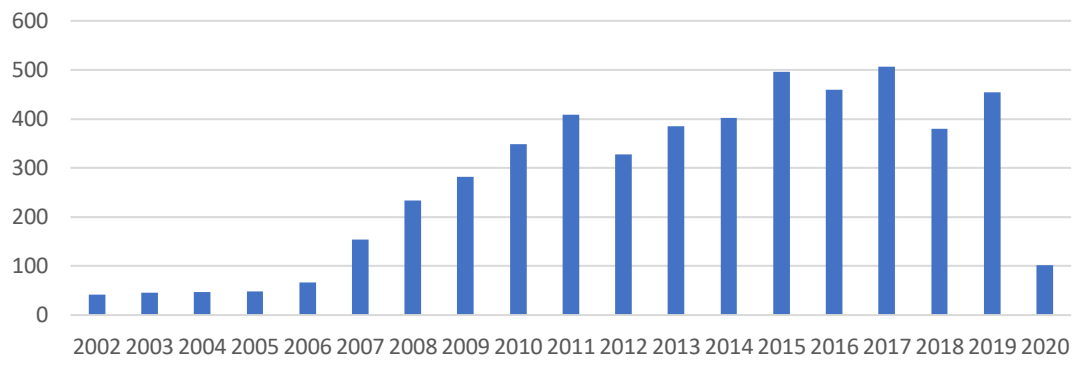
At the same time, the efficiency of companies relates to the available resources and capital, including human capital. Moreover, the greening of the company's policy requires the allocation and attraction of the additional capital: investments for development and implementing of green technology [9], clean production; investments for patents and know-how; investments for staff training on green policy and technologies etc. In this case, the green intellectual capital becomes the core element of the company's efficiency in providing green activities.

2. LITERATURE REVIEW

The findings of publishing activities on green intellectual capital showed the increasing number of the documents on the selected theme in the scientific databases Web of Science. Thus, in beginning of 2020 the authors published 102 documents. Besides, the scientists with American affiliation (539) had the biggest amount of the papers on analysed theme. The Chinese scientists published 394 documents for 2002-2019 years. Table 1 visualised the publishing activities of green intellectual capital in Web of Science.

Table following on the next page

Numbers of papers by years



The most significant scientists (TOP 10)

#	Authors	Papers	#	Authors	Papers
1	Dumay J	54	6	Bontis N	36
2	Edvinsson L	43	7	Abeysekera I	34
3	Lin CYY	40	8	Guthrie J	34
4	Chen J	38	9	Matos F	33
5	Beding T	36	10	Markkula M	32

	The most cited papers	Citation	Google Scholar
1	Guthrie, J., Ricceri, F., Dumay, J. (2012). Reflections and projections: a decade of intellectual capital accounting research. *The British accounting review*, *44(2)*, 68-82.	286	600
2	Edvinsson, L. (1997). Developing intellectual capital at Skandia. *Long-range planning*, *30(3)*, 366-373.	475	2131
3	Yang, C.C., Lin, C.Y.Y. (2009). Does intellectual capital mediate the relationship between HRM and organisational performance? Perspective of the healthcare industry in Taiwan. *The International Journal of Human Resource Management*, *20(9)*, 1965-1984.	116	297

Countries Affiliation

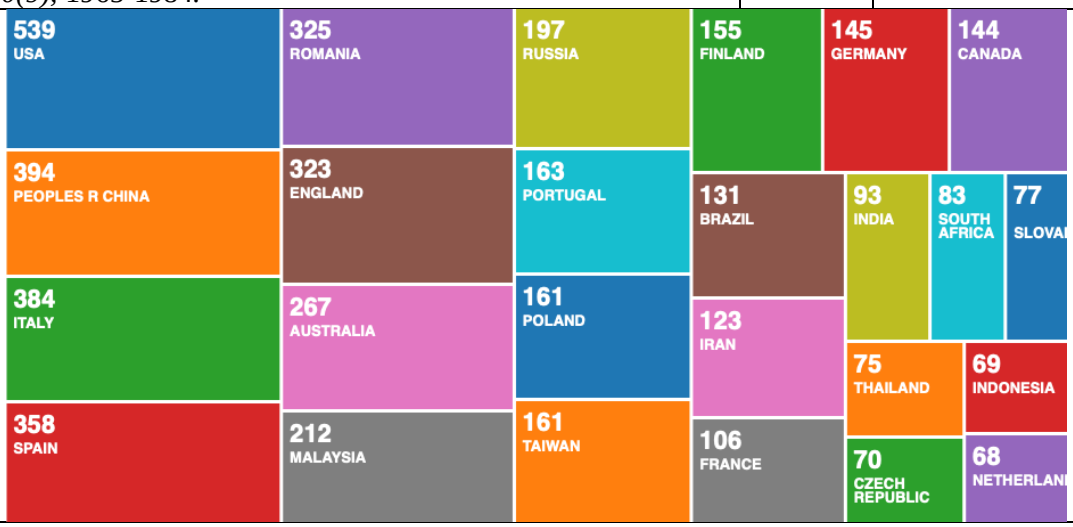


Table 1: Visualising of the publishing activities on green intellectual capital in Web of Science
(Source: developed by the authors based on Web of Science)

The results of the analysis of the approaches to define green intellectual capital showed that the scientists have not accepted the universal definition. Besides, the group of the scientists confirmed that the core element of the green intellectual capital was the human capital which has expertise on green technologies or policy [13]. The scientists in the papers [19, 27, 21, 29, 4, 28, 20] analysed green intellectual capital and proved its impact on the country's social,

economic and green growth. Besides, the development of the human capital [23] and affordable education and lifelong [44, 37, 24] was the goal of Sustainable development goals 2030. The authors in the papers [43] highlighted that efficiency of the intellectual capital relate from the investment in education. At the same time, the scientists [36, 15, 40, 46, 35, 45] confirmed hypothesis that green intellectual capital had the positive significant impact on the company's performance. In the paper [6] the authors analysed intellectual capital as intangible assets and confirmed that increasing efficiency of the human capital lead to increasing of added values for companies. Besides, in the paper [25, 22, 11, 45, 5, 2] confirmed that green innovations and human capital was the core element of competitiveness for the companies. The scientists in the paper [34] proved the necessity to extend knowledge of the human recourses on the green policy in the retail business. In the papers [30, 11, 3] the scientists explained crucial role of the financing management at the company in the developing of the human capital. The scientists in the paper [50] confirmed that human capital, and structural capital are the core elements of the intellectual capital in the company. Besides, the authors in the papers [7, 39, 31, 26, 41] proved that communicational channels provide the moving information between all parameters of green intellectual capital and company's management. In the papers [32, 33, 1] the authors highlighted the importance of the gender factor in human recourses management. The issues on investing in the intellectual capital were investigated in the papers [18, 42, 17]. The authors allocated the main restrictions for human resources management at the small and medium enterprises. the findings proved that mostly the scientists analysed the meaning of green intellectual capital. however, the further investigation requires the empirical justification of statistically significant impact of the green intellectual capital on the company's performance.

3. METHODOLOGY AND RESEARCH METHODS

The results of the analysis of the approaches to define green intellectual capital allowed allocating the main its parameters: green human capital; green structural capital; green communication channels. Based on the results of the analysis the authors chose the following parameters which describe the company's performance: Return on Equity (ROE), Return on Sales (ROS) Return on Assets (ROA), Return on Investment (ROI).

The study checked the hypothesis aa follows:

- H0: green human capital has a statistically significant positive impact on company performance;
- H1: green structural capital has a statistically significant positive impact on company performance;
- H3: green communication channels have a statistically significant positive impact on company performance.

The dependence variable – company performance, the independent variables were parameters of the green intellectual capital (green human capital; green structural capital; green communication channels). The visualising of research hypothesis showed in Figure 1.

Figure following on the next page

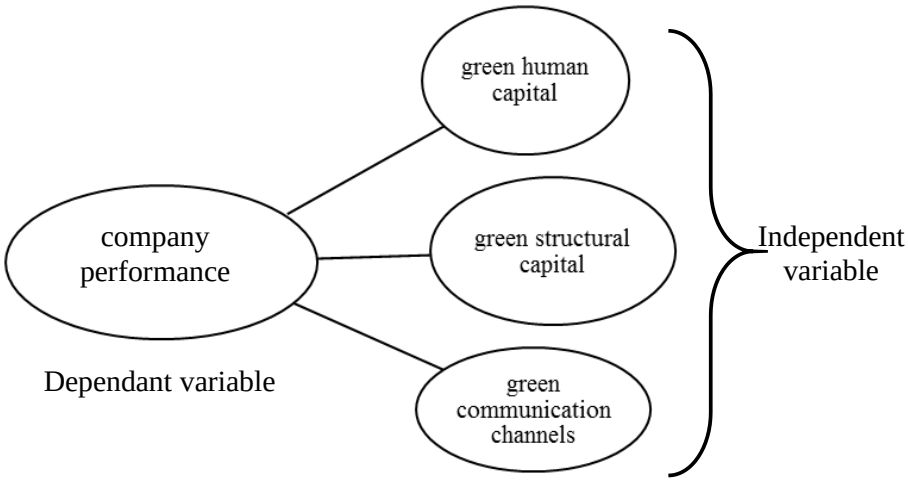


Figure 1: Research hypothesis of the investigation
(Source: developed by the authors)

The raw data was collected from the open financial and non-financial reports and findings of the survey of 150 managers of small and medium enterprises. The survey was conducted using the google platform and email. The study used the second-generation multivariate statistical analysis. The study analysed the four core industries of the national economy: food industry, agriculture, machinery-producing industry and production of building materials. The parameters of the green intellectual capital estimated by the grade scale from 1 to 5 (from strong disagreement to strongly agree). The same approach was used to estimate the company's performance during the assessment by the company's managers. The authors used the partial least squares based-structural equation modelling method (PLS-SEM) for checking the hypothesis mentioned above (formula 1).

$$X_{pq} = \lambda_{pq} E_q + e_{pq} \tag{1}$$

λ_{pq} – the loading term was linking the q-th latent variables to the p-th relations, X_{pq} – relevant companies' performance.

Before the PLS-SEM, the authors did the one-way ANOVA: F-test with the purpose to check the statistically significant differences in company performance depend on the sectors of the national economy.

4. RESULTS

The authors analysed the results of questionnaires for checking the hypothesis. The generalised study answers from 150 managers of small and medium enterprises. The managers represent four leading sectors of the national economy: food industry, agriculture, machinery-producing industry and production of building materials. The descriptive statistics of the data for all industries showed in Table 2.

Industry	Frequency	Per cent	Valid Percent	Cumulative Percent
Food industry	40	26,7	26,7	26,7
Agriculture production	51	34,0	34,0	60,7
Machinery industry	38	25,3	25,3	86,0
Production of building materials	21	14,0	14,0	100,0
	150	100	100	

Table 2: Industry descriptive statistics
(Source: calculated by the authors)

The authors used the same approaches as in the papers [10, 12, 47, 49, 8] to estimate the parameters of the green intellectual capital (green human capital; green structural capital; green communication channels). Thus, the parameters estimated by the grade scale from 1 to 5 (from strong disagreement to strongly agree). The dependence variable (company performance) was estimated using the managers' comparison analysing five core indicators: Return on Equity (ROE), Return on Sales (ROS) Return on Assets (ROA), Return on Investment (ROI). In this case, the authors used the five grade scale for comparison analysing (1 = "strongly disagree", and five ="strongly agree") [38]. Table 3 contained the findings of the descriptive statistics for each parameter of the green intellectual capital and company performance.

	green human capital	green structural capital	green communication channels	company performance
Mean	4.08	2.01	3.70	3.60
SD	1.50	0.11	0.27	0.12
Minimum	1.30	0.70	1.15	1.37
Maximum	4.98	3.50	4.77	4.82

Table 3: Descriptive statistics
(Source: developed by the authors)

The findings of Shapiro-Wilk and Levene's test allowed using the One-way ANOVA: F-test for comparison analysing of the company performance relate from sectors of the national economy. The findings of One-way ANOVA: F-test showed in Table 4.

Source	SS	df	MS	F	Prob > F
Between groups	20.3441989	4	4.06883978	1.43	0.2575
Within groups	57.0254174	145	2.85127087		
Total	77.3696163	150	3.09478465		

Bartlett's test for equal variances: chi2(5) = 2.6655 Prob>chi2 = 0.751

	Contrast	Std. Err.	t	P>|t|	[95% Conf.	Interval]
id						
2 vs 1	-2.346667	1.233158	-1.90	0.429	-6.222798	1.529465
3 vs 1	-2.48	1.233158	-2.01	0.371	-6.356131	1.396131
4 vs 1	-1.52	1.067946	-1.42	0.713	-4.876828	1.836828
3 vs 2	-.1333333	1.378712	-0.10	1.000	-4.46698	4.200313
4 vs 2	.8266667	1.233158	0.67	0.983	-3.049465	4.702798
4 vs 3	.96	1.233158	0.78	0.968	-2.916131	4.836131

Table 3: The findings of One-way ANOVA: F-test for company performance
(Source: developed by the authors)

The findings of One-way ANOVA: F-test confirmed the non-existing of statistically significant differences in company performance depend on the sectors of the national economy. It allowed using the partial least squares based-structural equation modelling method (PLS-SEM) for all sample of the small and medium enterprises. This method allowed using the not significant sample of data which is the core benefits. The findings of the structural modelling presented in Figure 4.

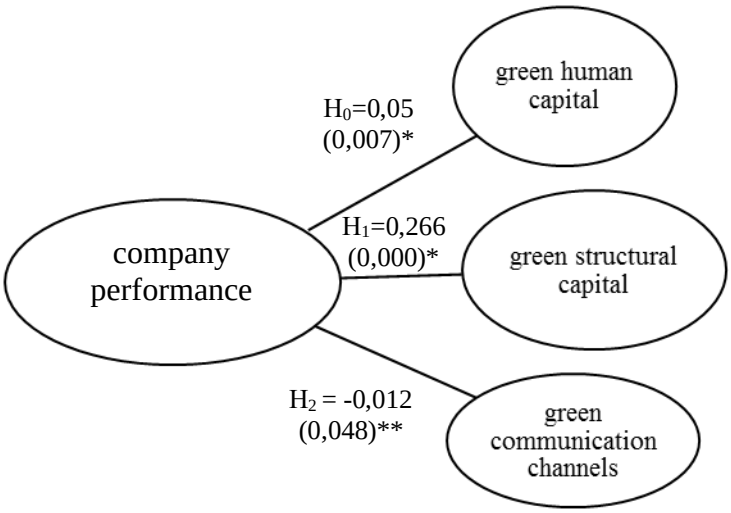


Figure 1: Results partial least squares based-structural equation modelling method (Source: calculated by the authors)

The findings confirmed that all parameters of green intellectual capital (green human capital; green structural capital) had a statistically significant positive impact on the company performance, which allowed confirming the hypothesis H0 and H1. At the same time, green communication channels had a statistically significant adverse impact at 5% on the company performance. In this case, the hypothesis H2 was rejected.

5. CONCLUSION

The findings allowed concluding that analysed companies had not adopted the implementing of the green features in the operational activities. The managers should develop and implement the best experience in developing green intellectual capital. Besides, the managers should pay attention to the improving of the green communication channels through strengthening the relationship with green investors, consumers and other stakeholders.

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THE IMPACT OF TIME MANAGEMENT ON FINANCE OF SLOVAK NON-PROFIT ORGANIZATIONS

Emilia Gresakova
University of Zilina, Slovakia
emilia.gresakova@fpedas.uniza.sk

ABSTRACT

Non-profit organizations are not non-profit primarily because they are not making a profit, but because they offer products and services to target groups who cannot buy them themselves. This is why an important part and specificity of non-profit organizations is their multi-source financing, consisting of public, private and individual forms of support. The budget is an essential part of a non-profit organization. Multi-source funding of the organization's stability and sustainability provider. The main objective of budgets is to prevent the consumption, in the worst case of theft, of financial resources for unauthorized purposes. It is also important for non-profit organizations to support and monitor innovations that allow for a more rational distribution and use of finance, and thus improve service quality. Under the conditions of non-profit organizations, but also businesses, the organization is mainly about trying to analyze, plan finances and control costs. The manager is responsible for the optimal division of tasks between individual financial units and within management levels. Individual departments are responsible for efficient use of financial resources. The financial and accounting departments of the organization should be transparent to each other. The task of management is to avoid duplication of requirements, by permanent communication, either on horizontal or vertical level, it is necessary to clarify and logically justify the expressed requirements. The task of the financial analysis is to characterize how the financial objectives that are specific to the NPO have been met, to identify the causes of deviations from the planned quantified goals, to assess the adequacy of the financial goals set in the NPO and the adequacy of the instruments and measures to ensure them. and characterize the state of financial health of the organization, its expected future development as well as the overall market position.

Keywords: *Non-profit organizations, Sources of funding, Financial analysis*

1. INTRODUCTION

The importance of using time management is exceptional for the non-profit sector in that it helps executives to demonstrate a better ability to dispose of resources, which will also be reflected in the reallocation of resources. Time management is a discipline that deals with the organization of time. In this type of management, it is very important to set clear objectives for its work and set priorities, define what is important to us in terms of work or personal activity and how much time and resources we are willing to devote to this activity and, last but not least, to eliminate unnecessary activities. So we will discuss individual strategies with a view to improving organizational skills (Gresakova, & Chlebikova, 2018). When planning, it is necessary to think about your own performance, which is different for each person and during the day is subject to certain fluctuations, but if the curve of distraction. We should plan specific, measurable, accepted, realistic, time-bound and positive terms. The objectives should be encouraging. Effective implementation of individual goals requires managers to constantly rationalize them, look for approaches and ways to make them the best and in the shortest possible time Chlebikova, et al. (2015). Prioritizing means that managers have to decide what they want every day or do it before everyone else to achieve their goals Diener, et al. (2009). The ABC method is based on the philosophy of percentages of important and less important tasks. This division is based on analogies of inventory management.

The Eisenhower principle represents a technique named after former US President Dwight David Eisenhower. Its essence highlights the argument that importance should always take precedence over urgency. Delegation in the context of techniques is a planned management technique or principle necessary to streamline the work of managers. The helicopter perspective focuses on structuring tasks and the time to perform them into six levels that help managers see tasks from a "perspective" and decide priorities accordingly. In defining the tasks to be performed, the S.O.R.U.S method, whose name is derived from the initial letters of the sub-steps it consists of, is also a very effective tool for managers. Partial steps of the method are: summary of tasks, estimation of time for individual activities, reserve time, prioritization and back-checking Francis-Smythe, & Robertson, (1999a). The elephant technique is mainly used in solving large complex tasks. These tasks that department managers face are complex. As part of time management, the authors recommend dividing the tasks into smaller manageable projects, which will be solved in a chronological sequence of activities. before all other tasks and always proceed from the most difficult and most important task (Andjarwati, et al. 2019). In order for managers to analyze the time spent effectively setting time, they must first determine what they are spending their time on, then they can reduce the tasks that hold them and focus on those that move the business forward. This may in the future result in raising funds for non-profit organizations (Francis-Smythe, & Robertson, 1999b).

2. SOURCES OF FUNDING FOR NON - PROFIT ORGANIZATIONS

Non-profit organizations are heavily dependent on donations, subsidies from government or business entities and corporations, institutions or individuals, who benefit from raising awareness of their company and reputation through community service. The purchase of long-term tangible and intangible assets, operation and routine activities of non-profit organizations are directly supported from public and private sources (Dobesova, & Fabian, 2013).

2.1. Public sources of funding

Public-non-profit sector relations focus almost exclusively on financial resources. The public sector has the advantage of a large number of employees with a more stable position compared to the non-profit sector. At the same time, the government has the power to tax and control funds providing subsidies and grants to non-profit organizations (Holubkova, 2012). We recognize the direct financial support of the state, where we talk about support from the budget revenues of the state budget. The state provides subsidies to the non-profit organization 35 and also concludes contracts and contracts with it, mainly due to lower financial demands and higher efficiency in comparison with state institutions. Subsidies can be from the state budget, from the budget of self-governments and HTUs or from European funds. Legislatively, the subject of the state budget is dealt with in Act no. 523/2004 Coll. on budgetary rules of public administration and on amendments to certain acts. This law regulates the budget of public administration, especially the state budget, the budget process, the rules of budget management, the establishment and management of budgetary and contributory organizations and others. Another amending law is Act no. 583/2004 Coll. on budgetary rules of territorial self-government and on amendments to certain acts Green, & Skinner, (2005). The subject of this Act are the budgets of territorial self-government and higher territorial units, mutual financial relations between the state budget and budgets of higher territorial units, as well as the relations of budgets of higher territorial units to legal and natural persons and others. In addition to the aforementioned laws, the obligations of non-profit organizations, as entities using public funds for their financial management, also deal with the Act no. 112/2018 Coll. on the social economy and social enterprises and on the amendment of certain laws. By indirect financial support of the state we mean exemption of non-profit organizations from taxes and duties, when the state waives part of its income, 2% personal income tax, assignment of 2% corporate income tax,

when a legal entity can decide to transfer part of the tax to another organization, respectively to the recipient whom he determines, and finally the deduction of the gift from the tax base (Trettin, 2019).

2.2. Private sources of funding

The business sector can also be a partner of non-profit organizations. The strengths of this cooperation are the financial resources available to entrepreneurs, even if they are not limited, as well as organizational skills and opportunities, which the business sector often has more than a non-profit and stable institutional base that can serve in the case of cooperation. The business sector has better access to state bodies that can help generate, not only financial, resources needed for sector cooperation, but also has better technological equipment (Holubkova, 2012). The foundation, established by a private person, serves as a provider of monetary and non-monetary funds to third parties, while we recognize three foundation sources. Foreign, forming the strongest financial base for financing non-profit organizations in Slovakia, domestic and community, which provide grants for raising the standard of living within their community. Another private source of financing is corporate donation, where a company provides some value without the right to consideration, and finally various strategic partnerships operating on the basis of charitable marketing or traditional sponsorship, where provided funds, products, services or rental of premises receive value from nonprofit organizations, such as advertising. The concept of sponsorship is not defined in the legal system of the Slovak Republic Kaasa, (2019). A relatively new source of funding is the income from advertising for charitable purposes. Contributions and gifts Gifts and the donation contract are regulated by law no. 40/1964 Coll. The Civil Code regulates inheritance within the framework of § 628 to § 630 and §§ 460 and 487. With the donation contract, the donor leaves something or promises to the other party, the recipient, free of charge, and the donor accepts this gift or promise. Contracts can be donation or grant, or financial contribution contracts. Donations can be made to a non-profit organization from their private sources by entrepreneurs as well as other independent entities. According to the form, donations are divided into material and financial, which include contributions. They are not subject to tax, do not require consideration and may be tied to a specific activity (Kmecova, 2018).

2.3. Individual sources of funding

By individual sources for non-profit organizations we mean funds obtained from individuals, specific people or individual donors in the form of deductions from wages, public charitable events aimed at collecting financial contributions from individual donors, direct contact with people, membership fees within the organization Belas, et al. (2018). Public Collections Public collections are dealt with in the Slovak Republic by Act No. 162/2004 Coll. on public collections and on amendments and supplements to certain acts, valid from 1.7.2014 and Act no. 71/1967 Coll. on administrative proceedings as amended. The public collection is characterized as the acquisition and accumulation of voluntary financial contributions. The range of contributors is not predetermined, the collection is carried out for a predetermined public benefit purpose or for individually designated humanitarian aid to a natural person or a group of persons who have found themselves in a difficult life situation such as an emergency, life threat or disaster. Only legal entities authorized to do so may make public collections. These include a civic association, a non-profit organization providing services of general interest, a non-investment fund, a foundation, the Slovak Red Cross, a special purpose facility of a church, a special purpose facility of a religious society, an organization with an international element, an interest association of legal entities and an association of municipalities. This legal entity must be entered in the register of public collections, which may be done by: the district office, if it is a public collection in the territory of municipalities belonging to its district, the Ministry

of the Interior for public collections held in the territory exceeding Office of the Ministry of the Interior with the prior consent of the Ministry of Foreign Affairs and European Affairs of the Slovak Republic for public collections from which the proceeds or part thereof will be used abroad Carvalho, et al. (2019). The collection costs are the costs incurred by the organization to carry out the collection and are therefore related to its material, technical and organizational support, management and detection of the use of the net revenue of the collection. We recognize the revenue from the public collection gross and net. Gross income is the sum of all contributions received by the collection, taking into account interest on contributions of contributions to a special account maintained at the bank, which is also used to collect contributions to the collection. We obtain the net income by subtracting the costs of the collection from the gross income of the collection. We call fundraising a strategically oriented activity through which a non-profit organization obtains funds and resources for its activities. The basis is a well-developed project. Crowdfunding has become a phenomenon in recent years, which, like fundraising, raises funds for the implementation of a certain project, but the whole process takes place on the Internet. Investors are individuals from the public who contribute a certain amount and within a specified period. Thanks to these funds, the organization can then carry out its project. The presentation of the project to the public as well as a wide range of potential contributors Kundelis, & Legenzova, (2019) are a great advantage for the creator. The Crowdfunding portal for non-profit organizations in the conditions of the Czech Republic and Slovakia is, for example, the Philanthros project. It is aimed at supporting charitable, humanitarian and environmentally friendly non-profit organizations. Individual organizations can apply, publish their project and convince the public of the usefulness and benefits of their project. Anyone can contribute financially from as little as CZK 1 (Major et al., 2002).

3. METHODOLOGY

The present study looked at finding a relationship between the time managers of executives and the financing of their business. We evaluated the individual items of the questionnaire by creating contingency tables and testing with Pearson's chi square test of character independence. In case of finding dependence, we measured the intensity of dependence by Cramer coefficient. The reliability of the items in the questionnaire was assessed with a Cronbach's alpha of 0.81, which indicates the optimal value and therefore the items were relevant. This tool has 10 statements on a 5-point scale Janoskova, & Kral, (2019). The current study examined 108 non-profit organizations, with 384 valid cases. The collected data were analyzed using the Statistical Package (SPSS) software.

4. CONCLUSION

We averaged the answers to the questionnaire, and used the average of the resulting questionnaires to create one 2 x 4 (l x c) pivot table. Created pivot table represents empirical and theoretical abundance. The first categorical variable was the completion of a course in the field of time management and the second concerned questions focused on the connection between the choice of financing and the use of time management as we an see in table 1.

Table following on the next page

Time management course	Financing non-profit organizations				Together
	B	C	D	E	
Yes *Oij*	3	22	93	27	145
Yes *Eij*	3,8	27,6	92,9	20,8	145,0
No *Oij*	7	51	153	28	239
No *Eij*	6,2	45,4	153,1	34,2	239,0
Together	10	73	246	55,0	384
	10,0	73,0	246,0	55,0	384,0

Table 1: Contingency table of actual and theoretical frequencies of variables (Source: Author)

I fulfilled the testing conditions by combining the averaged answers "A" and "B" to get the following table, which meets both conditions for the evaluation of Pearson's χ testu - test of character independence Durana, et al. (2020). At the level of significance alpha 0.05, I test hypothesis H_0 whether there is a significant dependence between completing a course in time management and financing a non-profit organization. H_0: There is no correlation between taking a time management course and financing a non-profit organization. Based on the comparison of the p-value from the table, we do not reject the values of alpha, $p > \alpha$, H_0. I consider the characters independent.

Pearson's χ^2 - character independence test		
Test criterion value	Df	p-value
5,089	3	0,172

Table 2: Pearson χ^2 - character independence test (Source: Author)

On the significance level of alpha 0.05 we accept the hypothesis that there is no dependence between attending a time management course and setting goals and priorities. Thus, it can be stated that time management has a significant impact, according to studies, on labor-induced stress, somatic symptoms, job satisfaction and self-assessment Gresakova, & Chlebikova, (2019), but not on the financing of non-profit organizations. Non - profit organizations long - term tangible and intangible assets used for their main activity, they are largely financed from the public or private resources obtained for its activities, respectively. they obtain it by physical donation, inheritance. They are unable to generate sufficient financial resources from their own activities to invested in fixed assets. According to the contribution, whether they receive funding does not depend on the time management ability of managers in non-profit organizations. In order to be able to raise financial resources, they must assess their financial health. The assessment of the financial health of a non-profit organization can be assessed by liquidity, debt ratios, debt ratios and equity and EBITDA and interest expense under the criteria of the Company's Financial Situation Index (Holubkova, 2012).

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LITERATURE:

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TOOLS FOR STRATEGIC RESEARCH OF THE NATIONAL SECURITY SYSTEM - METHODOLOGY FOR RESEARCH USING SIMULATION BUSINESS GAME

Venelin Terziev
National Military University, Veliko Tarnovo, Bulgaria
University of Rousse, Rousse, Bulgaria
terziev@skmat.com

Mitko Stoykov
Rakovski National Defence College, Sofia, Bulgaria
mitkostoykov@hotmail.com

ABSTRACT
Modelling a business game to test the building of capabilities for enhancing institutional resilience requires a thorough knowledge of the underlying in the reviewed process base concepts (for counteracting hybrid threats, for building defence capabilities, for the functioning of the business model of the national security system and etc.) and following a specific management strategy. The business simulation games should be seen as a concrete model of abstractions from the reality. Therefore, when analysing the results of their implementation, it should be borne in mind that the tested coherence of a theory or concept can be successful in a particular model or simulation, but this isn't actually a guarantee of overall consistency with the real world, especially when testing newly developed theories and concepts with many conventions. Therefore, the selection of concepts, variables, the way the model is developed, the approaches to conducting it, and especially the management of this type of scientific research are of particular importance. Of course, the most profound impact on the results is the level of professionalism in preparing the analysis of the results of each business simulation game.
Keywords: *Simulation business game, National security system, Tools, Cyber-attacks, Business game*

1. INTRODUCTION

Modelling a business game to test the building of capabilities for enhancing institutional resilience requires a thorough knowledge of the underlying in the reviewed process base concepts (for counteracting hybrid threats, for building defence capabilities, for the functioning of the business model of the national security system and etc.) and following a specific management strategy. To this end, in order to stimulate the specific behaviour of the participants in the simulated scenario specific variables and theoretical constructs are identified. In this particular case, following the concept of counteracting contemporary threats must provoke the creativity of participants in rationalising the potential threats and the institutional areas of responsibility for counteracting their manifestation. Important for the reliability of the obtained results are the choice of roles, levels of analysis, management mechanism in order to reduce abstraction. Selecting certain criteria for evaluating the model of the business game itself can help to avoid subjectivism and follow specific theoretical assumptions in the studied concepts.

2. METHODOLOGY FOR RESEARCH THROUGH SIMULATION BUSINESS GAME

The business simulation games should be seen as a concrete model of abstractions from the reality. Therefore, when analysing the results of their implementation, it should be borne in mind that the tested coherence of a theory or concept can be successful in a particular model or simulation, but this isn't actually a guarantee of overall consistency with the real world,

especially when testing newly developed theories and concepts with many conventions. Therefore, the selection of concepts, variables, the way the model is developed, the approaches to conducting it, and especially the management of this type of scientific research are of particular importance. Of course, the most profound impact on the results is the level of professionalism in preparing the analysis of the results of each business simulation game. In the present case with the aim of increasing the relevance of the study results, they are compared with the results of the previous study with an expert evaluation card (Petrova, Petrov, 2020-c). Several areas of discussion have been identified for the organization of the Business Game, in which the lack, shortage or out-of-date of current institutional capacities, combined with the lack of appropriate management practices, would allow for the occurrence of functional problems and constraints to reveal new challenges, risks and threats for the national security, the manifestation of which could become hybrid in nature or cause unexpected and unfamiliar hybrid effects with severe damaging effects and consequences for the national security (Georgiev, 2019-b; Nichev, 2009; Petrov, Georgiev, 2019c; Terziev, Madanski, Georgiev, 2017-a; Terziev, Georgiev, 2017b). In accordance with the likely origin and content of the national security challenges (Table 1), the discussion areas are classified as follows:

1. Discussion Area 1;
1.1. Identification of potential (hybrid) threats that may endanger the national interests of the Republic of Bulgaria;
1.1.1. Threats to the energy safety and impacts on energy infrastructure entities - gas transmission system, storage companies, hydropower facilities, central dispatch system, electricity transmission grid;
1.1.2. Interruption of energy supplies;
1.2. Potential subjets with impact capacity and capability;
1.2.1. Climate changes, natural disasters, accidents and catastrophes;
1.2.2. Intentional malicious attempts on the critical energy infrastructure;
1.2.3. Terrorist threats to critical energy infrastructure;
1.2.4. Interruption of the supply of gas, oil and petroleum products;
1.3. Likelihood of manifestation of threats;
1.3.1. From not high to moderate;
1.4. Hesitation in the society and government of the country regarding the European and Euro-Atlantic choices of the country, manipulating the society through incorrect and manipulated information in the media space;
1.4.1. Corruption in the country, being used by foreign special services;
1.4.2. Human migration;
1.4.3. Alienation in society;
1.5. Cyber-attacks, changing the content of sites and creating psychosis among the population;
1.5.1. Long-term impact and manipulation of public opinion on migration and refugee issues;
1.5.2. Direct actions on the state's telecommunications system;
1.5.3. Attacks on the history of the country - changing the history;
1.5.4. Interference in the political system of the country by other countries;
1.5.5. Threats against the information security and especially against classified information;
1.5.6. Weakening or loss of statehood;
1.5.7. Information campaigns against Bulgaria and the Bulgarian institutions for the substitution of truth;
1.6. Radicalization and marginalization of parts and ethnic groups of society;
1.6.1. The demographic crisis and depopulation of regions in the country;
1.6.2. External influence and servicing foreign interests;
1.7. Loss of the intellectual potential of the country;

1.8. Information campaigns against the state;
1.9. Threats against the political and social stability and the integrity of society;
1.10. Seizing economic positions through the privatization of larger state-owned companies;
1.11. Spread of radicalism;
1.12. Terrorism, extremism and international organized crime;
1.13. Focused efforts for the long-term merging of structure defining industries;
1.14. Potential subjects, capabilities and impact capacity;
1.15. External subjects: Union and non-union states, non-state entities, non-governmental organizations, illegitimate structures, international organized crime;
1.16. Internal subjects: private corporate entities, criminal structures, individuals (hackers);
1.17. Beneficial impact: NATO and EU membership and no immediate military threat;
2. Discussion Area 2;
2.1. Defining the necessary capabilities to counter hybrid threats;
2.1.1. Critical infrastructure protection capabilities: plans, timeframes and resources for building / updating security systems for critical infrastructure sites;
2.1.2. Increasing the resilience of institutions and the public against the impact of cyber-attacks on critical infrastructure management systems, including increasing the responsibility for the private sites from the critical infrastructure;
2.1.3. Selection and preparation (education, teaching and training) of the necessary personnel;
2.1.4. Maintaining a stable energy balance of power;
2.1.5. Diversification of the risk for supplies, routes and sources of energy resources;
2.1.6. Abilities and national coordination in the case of crisis of all kinds;
2.1.7. Network and information security and cyber security, liaison between agencies, coordinating unit for monitoring;
2.1.8. Developing a hybrid threat response strategy;
2.1.9. Social measures to reduce the risk of external impact - raising incomes, minimal human intervention, transparency, accountability and responsibility;
2.1.10. Ability to acquire and exchange information, coordination and interinstitutional cooperation;
2.1.11. Building and updating capabilities to conduct anti-terrorism / counterterrorism operations;
2.1.12. Improving education, training and scientific research in the field of national security;
2.1.13. Building national capabilities to counter radicalization, extremism and terrorism;
2.1.14. Building capacity for planning, coordination and interaction between the MoI, MoD and security services in the joint execution of tasks;
2.1.15. Improvement of intelligence capabilties, early warning and crisis management;
3. Discussion Area 3;
3.1. Defining and analysing the existing institutional capabilities to counter hybrid threats;
3.1.1. Defence capabilities of the MoD (Cyber Defence?);
3.1.2. National strategy on cyber security "Cyber Sustainable Bulgaria 2020";
3.1.3. Requirements for the preparation of vessels for information security in the field of maritime transport;
3.1.4. Legislative steps to change Art. 94 of PCIA for inclusion of a system such as "Screen" in AIS;
3.1.5. Mutual recognition agreement system for biometric data capture;
4. Discussion Area 4;
4.1. Lack of abilities to counteract hybrid threats;
4.1.1. Norms, bodies and prevention capabilities;
4.1.2. Capabilities for integral information and cyber security, including information and social networks;

4.1.3. Functioning e-government, full range of e-services for citizens;
4.1.4. Critical infrastructure protection systems;
4.1.5. Monitoring, early warning and announcement systems;
4.1.6. Joint education and training of institutions;
4.1.7. Increase of the responsibilities for strategic communication;
4.1.8. Policies and mechanisms for solving demographic problems;
4.1.9. Abilities to deal with migratory pressure, trafficking of human beings, goods and drugs;
4.1.10. Interinstitutional and international cooperation and interaction;
5. Discussion Area 5;
5.1. Forms and methods of interinstitutional interaction for the formation and use of capabilities to counter hybrid threats;
5.1.1. Interaction regarding cybersecurity, establishment of national Standard Operating Procedures;
5.1.2. Joint education, preparation, exercises and trainings;
5.1.3. Change of the legal framework on the interaction between the institutions;
5.1.4. Establishment of a single national network for communication and crisis management, interagency cooperation capabilities and a single database.

No.	List of the main functions of the national security system.
1.	Observation, detection, recognition, identification and analysis of the development of challenges, risks and threats to national security
2.	Investigation, sharing and provision of information and knowledge
3.	Horizon scanning, long-term forecasting, risk analysis and assessment, modeling and simulation of the development and manifestation of threats
4.	Surveillance, command, control and coordination system
5.	State border security, border control and migration
6.	Observation, control and defence of sea and air space, protection of sovereignty, independence and territorial integrity
7.	Implementation of international and coalition commitments for participation in NATO and European Union operations and missions
8.	Participation in UN and OSCE operations for crisis and conflict management and humanitarian aid
9.	Fight against terrorism, antiterrorism, counter-terrorism, management of the consequences of terrorist acts
10.	Fulfillment of allied and bilateral agreements commitments for participation in operations for crisis, disaster and emergency consequences management
11.	Public information, strategic communication, media and alert systems
12.	Information policy, security and defence of information systems and networks
13.	Public order protection, fight against organized crime, law enforcement, investigation and court
14.	Health care, quarantines, epidemic control, safety and disposal
15.	Protection of the population and critical infrastructure
16.	Politics, government and creating capacities of the national security system
17.	Economics, public finances, banks, stock exchanges
18.	Research, education, innovation, training, teaching
19.	Management of the natural disasters consequences, major industrial accidents and catastrophes
20.	Crisis and wartime planning, government reserve and logistics

Table 1: List of the main functions of the national security system

The in-depth discussion facilitated the initial classification of key features of hybrid threats:

- Deliberately planned and controlled use of overt and covert tactics;
- Conducting military or non-military information, cyber, intelligence operations;
- Political, diplomatic and economic pressure;
- Use of conventional armed forces;
- Generation of vagueness and ambiguity among the attacked and the international community to disguise true goals;
- Blurring the line between peace, aggression and war;
- Lowering the impact profile to prevent allied and international reaction;
- Exploiting the weaknesses and vulnerabilities of contemporary society, institutions and countries;
- weaknesses in national institutions, state governance and corruption;
- lack of confidence and support for internal security and defence;
- ethnic division and neglect of the interests of large ethnic groups - political and economic marginalization;
- critical dependency on resource import, economic and energy dependency, strong dependence on critical infrastructure - finance, energy, communications and transport, cyber vulnerability.

As a result of the discussions, concrete proposals and recommendations for enhancing institutional and public resilsience are expected through:

- Working institutions and political system with broad public support;
- Transparency in the financing of political parties;
- Rule of law and fight against corruption;
- Respect and protection of the civil rights of citizens;
- Access to administrative and social services;
- Reducing social exclusion;
- Establishing common criteria for the protection of national infrastructure;
- Protection of critical infrastructure, reduction of the number and scale of critical vulnerabilities of the country, of the information systems and networks;
- Diversification of the sources for resource and energy supplies;
- Reducing the possibility of sudden interruptions and filling the shortage of resources;
- Abilities to respond immediately to internal tension and uncertainty;
- Support from membership in unions and international organizations;
- Specialized training and exercises.

The selection of five possible areas for threat occurrence and multiple variables in the organization of the particular business simulation game facilitates the presentation and, subsequently, testing of this research practice with the preliminary attitude that, in order for any simulation to be effective, during the organization and conduct of the business simulation game should be planned, as far as it is possible, to achieve a smaller number of objectives. The pursuit of numerous goals leads to an increase in subjectivity and conditionality, which may compromise the chosen model of the game, and it may be that insufficient attention is paid to its main tasks. In accordance with practically proven limitations in the application of the theory of simulation games, the level for conducting the game and evaluating the results is one - strategic, national. The operation on several levels, even just one in the context of the other (operational level in a strategic context) leads to a number of conventions and failure to account for the dynamics of the two different levels, or to placing one of them in a static state, which would lead to a decrease in the qualities of the final results of the study (Terziev, Stoyanov,

Georgiev, 2017c- j; Dimitrovski, Pushova, Georgiev, 2017k-l). The analysis of the results of the business simulation game should focus on solving the specific initial tasks and achieving only the intended goals. The use of business games as a method of scientific study does not allow for full coverage and consideration of all constraints in the internal structure and functionality of the represented institutions, so the study focuses solely on the relevance of the regulatory obligations to identify potential challenges for the national security in pre-defined areas of manifestation and the ability to respond with the availability the institutional capacity.

3. CONCLUSION

The methodology developed for assessing the role and capabilities of counteracting hybrid threats to the institutions of the national security system allows: Definition of potential hybrid threats, whose manifestation may endanger the national interests and the national security of the Republic of Bulgaria: Identification of the areas of available institutional capacities; Identification of the deficits of institutional capacities; Determination of the need for institutional capabilities to respond to hybrid threats and the opportunities for their creation; Identification of forms of interinstitutional interaction for the creation and use of capabilities to counter hybrid threats.

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ELECTRONIC SERVICES AS SUPPORTING FACTOR OF QUALITY OF LIFE IN DIGITAL ECONOMY

Zuzana Stofkova
University of Zilina, Univerzitna 8215/1, 01026 Zilina, Slovakia
Zuzana.stofkova@fpedas.uniza.sk

ABSTRACT
The paper deals with the relationship between eHealth - healthcare practice supported by electronic and the quality of life, focusing mainly on the quality and availability of electronic health services in Slovakia. The paper contains theoretic terms in the field of electronization of health, such as eHealth and information systems, new information and communications technology-based health care solutions, factors and their impact on the quality of life of citizens and the influence of the European Union and other international organizations on the development of eHealth. There is a comparison of the level of electronization of health in Slovakia with other selected countries and also marketing research identifying problems of eHealth in Slovakia from the perspective of patients and also doctors. There are suggestions and recommendations for improving the level of electronic health care in Slovakia.
Keywords: *Electronic services, quality of life, health services*

1. INTRODUCTION

Nowadays information communication technology (ICT) is becoming an integral part of our daily existence as a tool to facilitate tasks, but also as a way to be competitive in the marketplace. (Poledníková, 2016). Nowadays information technology is becoming an integral part of our daily lives and, as in the past, has played an essential role in the health sector, it is now accepted not only as a tool to facilitate tasks but also as a way to be competitive in the marketplace. The informatisation of society is the result of unstoppable technological development and an essential factor for improving quality in all spheres of political, economic and social life. It can be characterized as a gradual introduction of information and communication technologies (ICT) into the eHealth sector. Electronization of healthcare is a global trend that is being addressed by most developed countries and is supported by ICT. The EU aims to link and coordinate national eHealth projects. (Ardielli, 2016). Digital solutions can radically change the attitude, quality and delivery of healthcare, thus improving the quality of life for millions of citizens. (European Commission, 2016)

2. ELECTRONISATION OF HEALTH CARE

EHealth involves interaction between patients and health service providers, between institutions and communication between patients and healthcare professionals. It may also include health information networks, electronic health records, telemedicine services and personal wearable and portable communication systems to monitor and support patients. In the Slovak health sector it includes the following topics: “national health portal and its content, citizen's electronic health book, e-allocations, telemedicine, e-prescription and e-medication, health information management, single reference data base, e-pSOS (EU project for communication of national eHealth systems), electronic public health. (Ondruš et al., 2017, p.122-123). Digital solutions can radically change the attitude, quality and delivery of healthcare, thus improving the quality of life for millions of citizens. (European Commission, 2016). Benefits of eHealth are time savings (accessibility of home comfort services, comprehensive and easy access to patient health data, faster and easier communication and sharing of information between doctors), cost reduction, increased treatment safety (contraindication control and drug duplication), improved efficiency and efficiency of health care (simple communication with the doctor via phone, video

or easier doctor decision-making). In spite of all the benefits, there are barriers that complicate implementation of eHealth in practice: high demands on computer literacy of doctors, low security of stored data, lack of awareness and confidence in eHealth capabilities, low level of interoperability. (MZ ČR, 2010; Gill and Feinstein, 1994). We put health in the highest ranking of values, a prerequisite and condition for a quality life. Health is an essential part of citizens' quality of life. In the context of quality of life, the health situation in the European Union is measured primarily through three sub-dimensions: the state of health of the society, subjective satisfaction and access to health care. The first dimension expresses the state of health of society through average life expectancy and health years. The second dimension is the subjective feeling of satisfaction of a person by assessing one's own health. The third dimension is access to healthcare, which includes the availability, speed and quality of healthcare. (OECD, 2017). The subjective perception of quality of life includes subjective evaluation of objective characteristics and perception of an individual, e.g. satisfaction or dissatisfaction (Ferencz, V., et al., 2017). The concept of quality is also associated with the concept of satisfaction, i.e. the perceived level of patient compliance with their requirements. (Ondruš, Ondrušova, 2017, s. 176). The quality system in health care can be defined as "a summary of the organization structure, individual responsibilities, procedures, processes and resources needed to continuously improve the quality of health services provided, with the ultimate goal of improving health, improving quality of life and population satisfaction." (Ozorovský, V., et al., 2016, s. 81)

3. ANALYSIS OF CURRENT STATE OF ELECTRONIC SERVICES IN HEALTH CARE

Ehealth helps reduce healthcare inefficiency and costs, improve access and quality of healthcare. The implementation of eHealth enables the emergence of new approaches to health care. (EC, 2018). The National Health Information System is "a set of health information systems for the collection, processing and provision of information in the health sector intended for the management of the data base." The National Health Portal is a part of NZIS. (Ondruš, Ondrušová, 2017, s. 36). Personalized healthcare is an approach that uses data generated by new technologies to provide the right care to the right person at the right time. (Antalová, Laluha and Přívara, 2013). Tele-medicine enables the collection, transmission and sharing of health data, thus enabling remote health care. Telemedicine is implemented through the services of: tele-consensus, tele-consultation, tele-monitoring, tele-care, tele-visit. (EC, 2018) Mobile health services use smart devices such as smartphones, tablets and other wearable devices to obtain health data for their users. It is important to tap the potential of ubiquitous mobile technology infrastructure to improve healthcare provision and access to health information. Mobile health contributes greatly to improving the quality of life by using devices that people commonly use. Ehealth services are listed basic eHealth services and a description of their functions and benefits they bring to their users. Electronic records include eOrder. ePicture Documentation, eRecommendation, eConsultation, eMedication, eLab, eVaccination, eExamination, Patient Summary, eRecept, eAlocations (electronic form of resource allocation among health care providers e.g. planning examinations, ordering vaccinations and appointments for laboratory examinations.

3.1. Electronisation of eHealth in European Union

The European Union's priorities in the area of ehealth are: improving citizens' health, improving the quality and accessibility of health, improving the efficiency and usability of ehealth tools. World Health Organization: Health 2020 and WHA58.28 eHealth. WHA58.28 eHealth, a document adopted by the WHO in 2005, sets out a strategy for the WHO and urges Member States to plan for the development and implementation of national health ehealth and to use

eHealth services. A survey carried out in 2014 comparing the development of eHealth in 25 Member States and on the basis of more than 150 selected ICT, social, economic policy and health criteriaNa základe dosiahnutých výsledkov sú krajiny rozdelené To leaders in eHealth belong Danmark, Slovakia belong to chalangers. The current level of eHealth varies across Member States. Therefore, the EC has decided to present to the European Parliament a set of measures under which the above-mentioned EU priorities in the field of ehealth can be achieved. (EC, 2018) The 2014 study compares the development of ehealth in 25 Member States and on the basis of more than 150 selected ICT, social and economic policy and health criteria. Based on the results achieved, countries are divided Leaders are Denmark, Slovakia is a challenge. Health status in the EU 2017 is a study prepared by the OECD and the European Monitoring Center on Health Systems and Policies in cooperation with the European Commission. The implementation of eHealth in Slovakia is carried out through the "eHealth Implementation Program" completed in December 2015. The main priorities in the "Strategic Healthcare Framework for 2014-2030" are described on the basis of WHO objectives such as Health 2020 and WHA58.28 eHealth. The priority is to build a system of population health care at national, regional and local level, to spread awareness among people about serious diseases and health risks, to improve health among socially disadvantaged communities, to increase citizens' interest and responsibility for their own health and to ehealth.

3.2. Electronisation of eHealth in Danmark

Danish healthcare is considered a leading country in terms of integrating eHealth and healthcare services. This is evidenced by completely digitized workflows and a number of electronic health services. The health of the Danish population is significantly higher than the EU average. The National Health Digitization Strategy for 2018-2022 can be achieved if Denmark focuses on active patient participation, timely information and prevention as well as trustworthy and secure data. The national eHealth portal in Denmark is Sundhed.dk, which allows its citizens and healthcare professionals to access and communicate information through the health information system. Patient health data can be accessed by the patient himself, and records relevant to treatment are accessible to general practitioners, specialist doctors, and hospital doctors. When enrolling in Sundhed, the patient has to be identified with their NemID. NemID serves as a single sign-on on the Internet to all public and private electronic solutions. A healthcare professional logs in to Sundhed through their NemID and CPR number - a unique employee identification number. (Kirkegaard, 2013). EHealth services in Denmark are available through Sundhed, which includes an Electronic Health Book. E-recommendations, eMedical Documentation, eExamination and many other eHealth services in Denmark have similar functionality to the Slovak variant. In addition, eRecept includes a health card that provides an overview of currently prescribed and previously selected drugs. eLab gives doctors access to laboratory results as soon as they are registered with Sundhed. eConsultations provide a comprehensive overview of patient visits to a doctor. eVaccination is a uniform overview of the vaccines that the patient has undergone or is about to undergo. In addition, the system provides the possibility of a reminder of compulsory or pre-departure vaccination. The Patient Information System is an overview of all medical operations in Danish hospitals. It is mainly used as a source of statistical data. (Eysenck et al., (2019). Denmark is one of the world leaders in the field of eHealth, has an elaborate health care system, resulting in an above-average level of population health, has developed a national strategy directly for health care digitization in Denmark for 2018-2022, appealing to the general public health and disease prevention through eHealth, Tele-medicine and Mobile Health services. The TeleCare North project and the Virtual Hospital contribute significantly to reducing the number and length of hospitalizations and increasing the comfort of chronically ill patients. Mobile Healthcare brings many mobile applications. The national eHealth portal provides information to its users.

The portal provides access to the Sundhed Health Information System. The Sundhed system provides citizens with access to the Citizens' Electronic Health Book that has the functionality of eRecommendation, ePicture Medical Documentation, eInvestigation, eRecept, eLab, eVaccination, eJournals, eConsultations, eScreening, Patient Information System, Life Act and Testament on Treatment.

3.3. Electronisation of eHealth in Slovakia

The national health portal in Slovakia is Npz.sk operated by the National Health Information Center. The portal provides access to the National Health Information System. eHealth. The system is the gateway to the citizen, or the patient, in the world of eHealth. Through the portal, the citizen gains access to his / her electronic health book The eHealth system, launched January 1, 2018, provides access to the functionality of the e-Order and the electronic health book of the citizen, where current information on health care is located. The eHealth system is the central repository of the patient's medical records and is a source of important information about the patient's health that can save his life. (EC, 2018). On the eHealth portal is the description, availability and usability of the following functions, which are provided through the eHealth system to patients and healthcare professionals: access to the eHealth system, eHealth services currently running, eHealth services being prepared. Patients and healthcare professionals have the opportunity to join the eHealth system via the npz.sk portal. With respect to the security of the system, the patient is required to identify with an electronic chip (eID) ID and the Healthcare Professional is identified by the Healthcare Professional's electronic ID. He needs to have a smart card reader. The electronic health card (EHB) includes digitized healthcare records and information systems. The patient can access his / her health book via the National Health Portal. An electronic health book is used to transfer information between doctors, patients and pharmacies. (Carbnoch, 2011). Through hyperlinks, the patient can access the eExamination and eReceipt modules. eInvestigation is an electronic record of the investigation that is stored in the eHealth system. As part of the eExaminations function, a discharge message can be electronically inserted into the eHealth system. Display device description and eRecommendation. E-Recept is an electronic replacement for the classic paper recipe, enhancing the convenience and safety of treatment. The latest functionality available is the long-awaited eOrder, which allows the patient to quickly and easily order doctors. In April 2019, 59 438 661 eReceptes, 17 396 602 examinations, 12 642 health workers and 8 852 health care providers are prescribed. The Slovak Republic is a country whose population health is lower than the EU average. The eHealth implementation is implemented through the eHealth Implementation Program. Slovakia does not currently have a separate strategic plan for the development of eHealth in the country and health care direction is defined only in the Strategic Health Care Framework for 2014-2030. Ehealth2018, is fully functional and accessible to all users.

4. SURVEY ON PATIENTS SATISFACTION WITH EHEALTH IN SELECTED REGION

The survey was carried out by the questionnaire concerning satisfaction of citizens with the quality of electronic health services in Slovakia. Data collection was carried out by a questionnaire survey among citizens of the Slovak Republic. Electronic questioning using an online questionnaire. In 2019, 526 respondents participated in a questionnaire survey of patients' satisfaction with eHealth services, while the analysis of merit questions is carried out on a sample of 392 respondents who have already encountered the concept of eHealth services. Research shows that 75% of respondents have already encountered the concept of ehealth (392). The patient questionnaire survey is aimed at finding out the use and satisfaction of patients with the offered eHealth services.

Therefore, people who have not met this term are not decisive for the following research questions. Up to 51% (201) of respondents looked for information of their own interest on the Internet, 35% (139) were informed by friends and acquaintances, and only 23% (89) received information through the media, 22% (88) were informed by doctors and 16% (63)) by school or by training. Most respondents, 73% (290) used e-prescription and dispensing services, then description from electronic display device - 36% (142) respondents, electronic record of professional examination - 23% (92) of respondents, • electronic doctor appointment - 21% (83) of respondents, electronic exchange ticket - 12% (48) of respondents, enrollment in electronic health book - 10% (40) respondents.

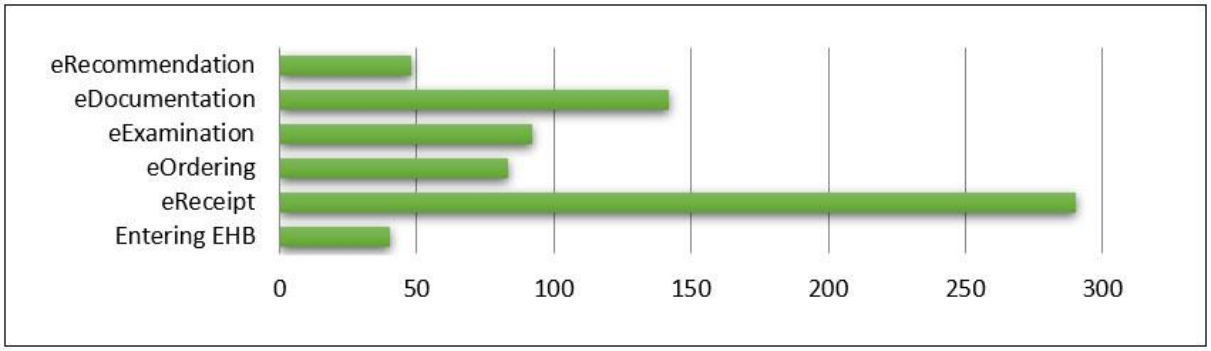

Figure 1: Which eHealth services have you used?

The availability of health data in one place is the most beneficial advantage provided by organic farming compared to the traditional paper variant. Respondents said it was very important for them:

1. Availability of health data in one place - 82% (323);
2. Time saving - 79% (311);
3. Increased safety of treatment - 72% (282);
4. Availability of home comfort services - 69% (269);
5. Removal of paper prescription - 68% (265);
6. Reduction of duplicate examinations - 60% (235).

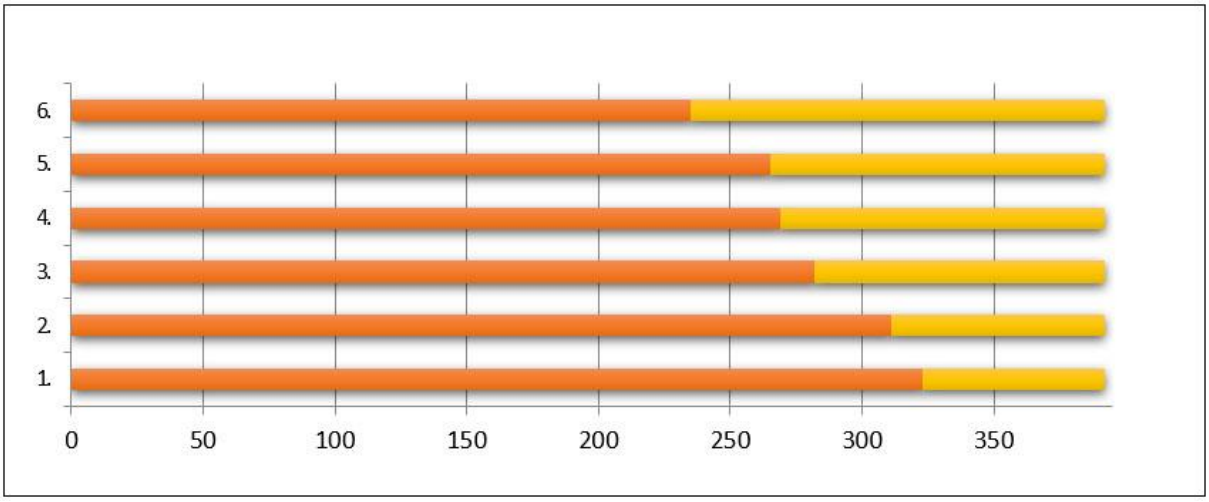

Figure 2: The following benefits of ehealth are essential from the point of view of respondents

Which eHealth services would improve your life the most?

1. Access of other health care workers to health records - 61% (242);
2. Selected family members access to health records - 32% (127);

3. Possibility to insert your own note into the eHealth system - 21% (83);
4. Electronic record and reminder of vaccinations required - 58% (228);
5. Invitation to preventive examinations - 79% (308);
6. Information available on the Internet about diseases and their treatment, prevention and medicines (dosage, contraindications) provided by specialists in the field - 63% (246);
7. Remote consultation of a doctor via the Internet - 22% (87);
8. Consultation of the specialist via video - 44% (174);
9. Monitoring, collecting and sending health information to a doctor - 19% (75).

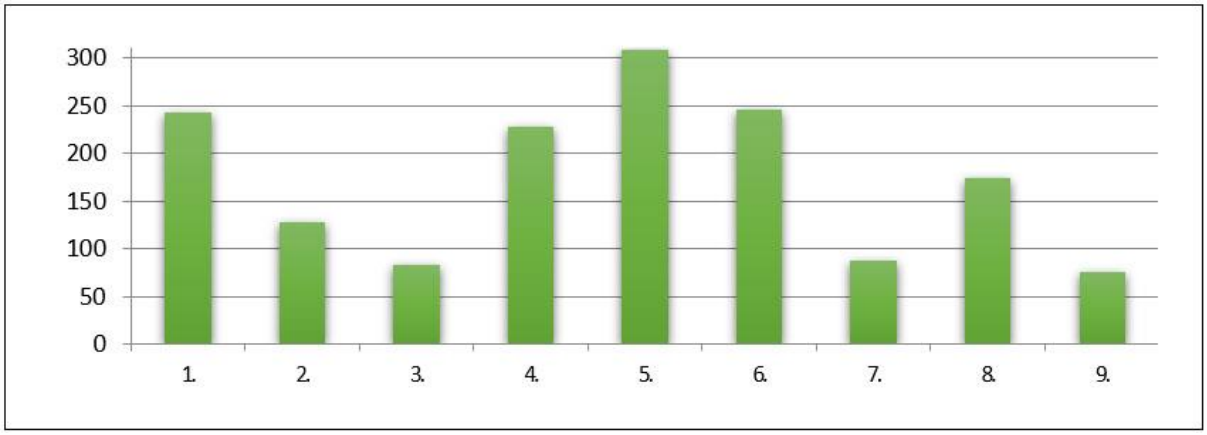

Figure 3: Which eHealth services would improve your life the most

In the opinion of 51% (198) respondents, eHealth will improve the quality of healthcare services provided and 49% (194) respondents think they do not. It is clear that 70% (154) of satisfied or rather satisfied respondents with eHealth services think that eHealth services will improve the quality of health care. who have used at least 2 electronic services. Most (55%) respondents over the age of 60 or retirees learned about eHealth opportunities solely through information from doctors. It is clear that 70% of young respondents receive information about eHealth through the Internet. It is clear that 29% (40) of respondents who have an ID card activated have registered their electronic health register, while 71% (96) of respondents did not. However, 40% of respondents who enrolled in the electronic health book consider the application to be complicated.

5. DISCUSSION

Benefits of eHealth, which defines various benefits of health care electronization and examples of a specific effect on health care quality. The most important benefits of eHealth include improving health, saving money and saving time for both patients and physicians. Quality of Life Measurement, which lists the quality of life indicators of people, how the mentioned benefits of the health care electronicization affect the factors affecting the quality of life of people Human health is one of the most important indicators of quality of life and is mentioned in almost every method that measures quality of life. The introduction of an eHealth system will lead to reducing the number of medical errors, improving the efficiency and effectiveness of health care by reducing the number of duplicate examinations, Improving health by improving the efficiency and effectiveness of health care, reducing the number of medical errors, through improved health, easier detection of unfair practices and overall transaction savings, Time savings through easy communication, availability of health data in one place, availability of home comfort services and faster and easier communication and sharing of information between doctors Improving health, saving money and saving time are, in other words, named factors affecting quality of life according to the Continuous Progress Index

method. The electronization of health care also affects the overall economic development of the country and thus supports the increase in the quality of life of its inhabitants. Technological progress and human capital are among the most influential factors affecting the growth of the country's economy. The development of modern systems develops the educational level of the population, improves the effectiveness of treatment and is a major driver of the economy. Proposal of implementation of electronic health care in Slovakia Ehealth is based on services and their innovations. The most widely used eHealth service in Slovakia is eRecept and therefore it is necessary to extend the functionality of this eHealth service. In the opinion of doctors and patients, the most demanded electronic service is a reminder of mandatory examinations, vaccinations and examinations. The research assumptions show that citizens are not sufficiently informed and it is therefore necessary to raise citizens' awareness of modern healthcare options. The problem of lack of information is also encountered by physicians themselves, especially inadequate instruction in working with the system. Physicians would receive training / teleconsil in case of a major software update, video information available on the Internet, text information available in medical journals, or individual training directly in the outpatient department. The respondents considered the most important benefits: availability of health data in one place, saving time, increasing the safety of treatment, accessibility of services from the comfort of home. The task of the research was to find out whether Slovak patients are satisfied with the quality of provided electronic services in Slovakia. Research shows that satisfaction with the quality of e-services provided is increasing among citizens who make more frequent use of ehealth services. If patients' awareness and interest in using eHealth services would increase, their satisfaction with the services provided is also likely to increase. At the same time, almost three quarters of respondents satisfied with eHealth services think that eHealth can positively influence the state of health care in Slovakia and improve the quality of health services provided.

6. CONCLUSION

The most important benefits of eHealth increasing citizens' quality of life include the availability of health data in one place, increasing the safety of treatment, accessibility of services from the comfort of home and the associated time savings. Currently, the most widely used electronic service in Slovakia is electronic prescription of medicines and a description from an imaging device in electronic form. Life-enhancing services are, according to the majority of citizens, an invitation to preventive examinations, information on diseases and their treatment, prevention and medicines provided by specialists in the field available on the Internet and access of other health care workers to health records, eg. access by emergency services. Slovak patients have sufficient information and interest in getting information about eHealth. Relatively few citizens have a chip in their identity card and only a third have actually registered the citizen's electronic health book. this is due to a lack of awareness of the possibilities of eHealth. Despite the fact that only one in ten respondents is concerned about the lack of computer literacy, almost three quarters of the applicants consider the application to be complicated. Logging into the eHealth system is challenging, requires a lot of computer skills and special equipment (self-experience). The greatest benefits from point of view of physicians are the availability of patient data in one place, the reduction of duplicate examinations and the control of medicines that interact. They do not feel time saving and speeding up examinations, on the contrary. Among physicians, eRecept and eOrdering are currently the most widely used eHealth service. Services that would be most helpful in the work of doctors, Family doctor, Telemedicine, patient information about the occurrence of diseases in the area (epidemics), Reminders for compulsory examinations, vaccinations and examinations.

The electronization in this region will be sufficiently adapted to the changing market and over time will increase the interest of doctors and patients in their use and thus contribute to improving their quality of life.

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MULTINATIONAL BANKING IN THE TIMES OF CORONAVIRUS OUTBREAK: TRENDS AND CHALLENGES

Fahri Murshudli
Azerbaijan State University of Economics
Baku, Istiqlaliyyat str., 6, AZ1001, Azerbaijan
fahri_murshudli@yahoo.com

Roksolana Zapotichna
Lviv State University of Internal Affairs
Lviv, Horodotska str., 26, US79000, Ukraine
roksolana.zapotichna@gmail.com

ABSTRACT

The article provides an analysis of the changes that has recently occurred in the activities of multinational banks, taking into account the consequences of the coronavirus outbreak. Given the importance of multinational banks in many countries, understanding the scale and direction of these changes for the world economy has become essential. Over the last two decades we have been witnessing the following trends in multinational banking: the credit strategies transformation – from aggressive into conservative; the rise of South-South banking; the shift toward alternative sources of funding; the dramatic increase in banks size; the expansion of Chinese banks; the strengthening position of fast-growing markets as multinational banks' home countries and the growing importance of developing and emerging markets as multinational banks' host countries; the geographic expansion and regionalization of their activities. Our findings show that the aforementioned trends are driven by the economic downturn in developed countries and the increasing economic importance of developing countries. On the basis of this finding we forecast a low likelihood that banks from developed countries will be active lenders in the nearest future. Banks from developing countries have much better financial positions, which increase their relative importance as foreign lenders, especially within their geographical region. It looks like the year 2020 will become a year of tipping points in the development of multinational banking. A decade after the 2008-2009 global economic crisis banking industry faces a new challenge, which seems to have influenced almost every sector of the world economy, – the coronavirus outbreak. Given the background, the consequences of the coronavirus outbreak on multinational banking should be carefully examined.

Keywords: *Coronavirus outbreak, Credits, Determinants, Multinational banks, Trends*

1. INTRODUCTION

Over the last three decades the importance of multinational banks (MNBs) for most countries of the world has dramatically increased. MNBs from both developed and developing countries have not only boosted their cross-border capital flows but have also overcome national borders and established their physical presence in foreign markets. Given the growing role of MNBs for the host countries, exploring the main directions of their evolution as well as challenges facing them, including the consequences of 2008-2009 economic crisis and 2020 coronavirus outbreak, is a matter of extreme importance. The rest of the paper is organized as follows. In the next chapter, which is divided into four subchapters, the main trends in multinational banking since 2008-2009 economic crisis has been summarized. The overview of the latest scientific publications and up-to-date data on multinational banking in the times of 2020 coronavirus outbreak is presented in chapter 3, which in turn, consists of four subchapters. The last chapter concludes.

2. TRENDS IN MULTINATIONAL BANKING SINCE 2008-2009 ECONOMIC CRISIS

For the purpose of the study the period after the 2008-2009 economic crisis has been chosen for several reasons. Firstly, the data for our study is based on economic statistics from «The Bankers» and «The Bank for International Settlements», which contain accessible and comparable data on banking since mid-2000s. Secondly, it was during these years that the main economic, technical and regulatory factors evolved, which led to the rapid growth of MNBs, the acceleration of their external expansion, and the growing importance of MNBs in the international economy. The most important factors contributing to the development of MNBs in mid-2000s were as follows: economic globalization; acceleration of scientific and technological progress, especially in the sphere of information and telecommunication technologies; liberalization of cross-border capital movement and financial services; accelerated development of national and international stock markets; economic and financial market recovery; privatization of banks in a number of developing countries (Arsenova, 2011, 99). Supplementing the list compiled by Arsenova, we consider that financial crises are equally important, because they weaken the position of small and medium-sized local banks, but contribute to the development of MNBs. Based on the analysis of scientific publications covering multinational banking, we have systematized several key trends. In our opinion, the main trends in the development of multinational banking since 2008-2009 economic crisis are as follows: strengthening position of the MNBs from fast-growing markets (in particular, from China); the growing importance of developing and emerging countries as MNBs' host countries; geographic expansion of MNBs' activities; the shift toward decentralized banking system and conservative credit strategy; the rise of South-South banking; the dramatic increase in banks size. The most important trends in multinational banking since 2008-2009 economic crisis are overviewed in the next subchapters.

2.1. The strengthening position of MNBs from China and other fast-growing markets

On the basis of «The Banker» and «Global Finance» database, we tracked how the TOP-20 largest banks by market capitalization has changed during the years 1990-2019. In 1990, Japanese banks dominated, because the Japanese economy experienced relatively rapid growth. Among the TOP-20 largest banks there were 9 Japanese (Sumitomo Bank, Dai-Ichi Kangyo Bank, Fuji Bank, Sanwa Bank, Mitsubishi Bank, Industrial Bank of Japan, Tokai Bank, Long-Term Cr. Bank of Japan, Bank of Tokyo), 3 French (Credit Agricole, Compagnie Financiere de Paribas, Banque Nationale de Paris), as well as 2 Swiss (UBS, Swiss Bank Corp.), 2 British (Barclays Bank, National Westminster Bank) banks. And finally, only one bank of the USA (Citicorp), Germany (Deutsche Bank) and China (Bank of China) is listed. The situation changed in the 2000s, when the TOP-20 list was headed by US banks Citigroup and Bank of America. Although most of the banks were Japanese, their number decreased to 7. At the same time, the number of US banks doubled. As of 2010, 11 of the TOP-20 largest banks were European, 5 were US, 3 were Chinese, and 1 was Japanese. In 2015, the list of the largest banks was headed by Industrial and Commercial Bank of China. However, if in 1990 only one China's bank - Bank of China was in the TOP-20, in 2015 there were 5 of the 20 largest banks in the world. Along with this, only 1 Japanese bank - the Mitsubishi UFJ Financial Group entered the TOP-20, while, as noted above, in 1990 Japanese occupied almost half of the list. In 2019, the list was still dominated by US and Chinese banks respectively 7 and 5 (Table 1).

Table following on the next page

Table 1: TOP-20 banks by market capitalization

Countries	Years				
	1990	2000	2010	2015	2019
Australia	0	0	0	2	1
Canada	0	0	0	2	2
China	1	2	3	5	5
France	3	2	4	1	1
Germany	1	1	1	0	0
Great Britain	2	1	4	2	1
Hong Kong *	1	-	-	-	-
India	0	0	0	0	1
Italy	0	0	1	0	0
Japan	9	7	1	1	1
Netherlands	0	1	0	0	0
Spain	0	0	1	1	1
Switzerland	2	2	0	1	0
USA	1	4	5	5	7

**Since 1997, Hong Kong has been a special administrative unit within China*
Source: authors' calculations based on the datafrom «The Banker» and «Global Finance»

The dominance of Chinese banks was the result of a number of reasons, the crucial, in our opinion, were:

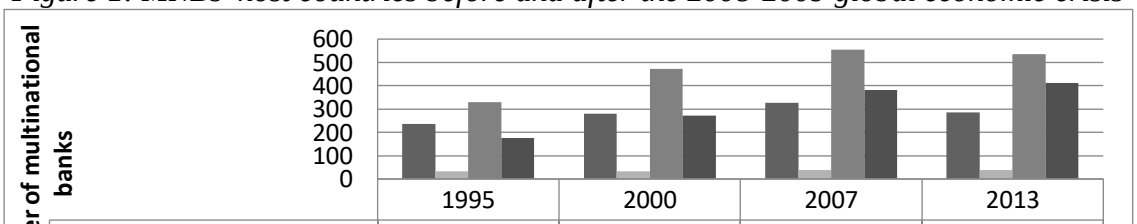
1. the foreign economic policy of the Chinese government, which has been called «Going out» or «Going global» (Nash, 2012; Wang, 2016; China Policy, 2017; Li, Cheong, 2018; Abeliansky, Martínez-Zarzoso, 2019). The aim of this policy is to encourage Chinese corporations and banks to invest abroad and enter foreign markets. The purpose of the banks' aggressive overseas expansion strategy is, first and foremost, to provide access to natural resources and to help Chinese businesses expand abroad (Zhang, Zhang, Tan, 2020). The implementation of this policy was also facilitated by China's accession to the World Trade Organization (Graham, 2012; Borst, Creehan, 2015; Mavroidis, Sapir, 2019);
2. Chinese banks, due to their relative isolation from the financial systems of developed countries, were less affected by the global financial crisis and, as a consequence, were more favorably positioned than banks from developed countries and were able to expand and grow. Chinese banks pursued an active foreign expansion strategy at a time when Western banks were forced to consolidate their operations abroad, overcoming the effects of the global financial collapse and the Eurozone debt crisis (Calkins, 2013; Murshudli, 2013; Pan, He, Sigler et al, 2018; Shenglin, Yu, Gu et al, 2018);
3. the separation of the political functions of Chinese banks from the commercial ones, which resulted in the creation of China Development Bank and China Export-Import Bank, the key task of which was to achieve the political goals of the Chinese government. This allowed the Big Four Banks (Bank of China, China Construction Bank, Agricultural Bank of China, and Industrial and Commercial Bank of China) to focus on sound market-oriented lending (Berger, Hasan, Zhou, 2009; Fungáčová, Pessarossi, Weill, 2013; Xu, Gan, Hu, 2013; Tan, 2015);
4. tight regulation on the activities of foreign banks. In China, foreign banks expansion is hampered by local supervisors and regulators, that consistently pursue a policy of limited admission of foreign banks capital into the national financial system. In the banking sector, China's government is primarily focused on establishing joint institutions in which the Chinese side could access technological and management innovations of foreign partners (Xu, 2008; He, 2014; PwC, 2014; Luo, 2016; Wang, Chenavaz, 2016; Yang, 2017; Pham, 2018);

5. Chinese banks conduct their activities in the markets of a substantially different group of countries (usually those countries for which access to international capital markets is restricted) than international financial institutions or Western banks, which reduces the level of competition between them. Consequently, Chinese banks have expanded their network by operating in the markets undervalued by Western banks, in particular, the resource-rich countries of Africa (ERA, 2009; Bräutigham, 2011; Haroz, 2011; Ayodele, Sotola, 2014; Abdulai, 2017) and Latin America (Gallagher, Irwin, Koleski, 2012; Kaplan, 2016; Avendano, Melguizo, Miner, 2017; Bersch, Koivumaeki, 2019; Roby, 2020). At the same time, it should be noted that a tendency of decreasing investment activity of Chinese banks in Latin America has been evidenced for the last 4 years. According to new research from Boston University and think-tank the Inter-American Dialogue, their loans dip to 10-year lows as oil-backed deals wane and new lenders and partnerships emerge (Ray, R., Barbosa P.H.B., 2020). Experts are providing an opinion, that total combined Chinese finance to the region is unlikely to ever approximate to its peak level (Myers, Gallagher, 2020).

2.2. The growing importance of developing and emerging countries as MNBs' host countries

Another trend that is worth noting is the growing importance of developing and emerging countries as MNBs' host countries. According to data compiled by S. Claessens and N. van Horen, in 1995, 35% of MNBs were located in developed countries, and 65% in developing countries, whereas in 2013, 25% and 75%, respectively (Claessens, Horen, 2012, 22-23; Claessens, Horen, 2015, 877). In other words, developing countries have become the main focus of MNBs' external expansion in post-crisis years.

Figure 1: MNBs' host countries before and after the 2008-2009 global economic crisis



	1995	2000	2007	2013
OECD	237	280	326	286
Other developed countries	32	34	38	38
Developing countries	330	473	555	536
Emerging contries	175	271	382	412

Source: authors' calculations based on the data from Claessens, Horen, 2012; Claessens, Horen, 2015

The advantages of developing and emerging countries as MNBs' host countries include higher interest rates, value of foreign currency, and demand for foreign credits. They also guarantee a significant share of the market (about 80% of the world's population live in developing countries). According to S. Prahalad and L. Hart, developing and emerging countries form up a multi-trillion market with a population of about 6 billion people and this figure will continue to grow. Even the world's poor, mainly living in developing countries, can, under certain circumstances and relevant policies, be a profitable market for business (Prahalad, Hart, 2008, 4, 7). However, in most developing countries, the scale of MNBs presence is still quite limited. This is primarily due to the unpredictability of political and legal changes in these countries (some of them have strict currency laws that may vary depending on the state of foreign exchange reserves and the balance of international payments) and the difficulties in profits repatriating (host countries may require to ensure that revenues are spent domestically rather than transferred to the home country).

2.3. Geographic expansion of MNBs

One of the important trends in the development of MNBs since 2008-2009 economic crisis has been the dramatic expansion of the geography of their activities. While in 1995 there were 19 countries with no MNBs, in 2009, 11 (Cuba, Ethiopia, Haiti, Iceland, Iran, Libya, Oman, Qatar, Saudi Arabia, Sri Lanka and Yemen) (Claessens, Horen, 2012, 10), and in 2019 only 2 - Ethiopia and Iceland (based on the analysis of data from the Central Banks of these countries).

2.4. The shift toward decentralized banking system and conservative credit strategy

After the Latin American debt crisis of the 1980s and the Asian financial crisis of 1997–1998 there was a dramatic change in banking system and MNBs' credit strategy. The shift toward decentralized banking system slowed down in mid-2000s. Direct cross-border credits to developing countries have recovered due to the dollar appreciation. In addition, the introduction of the euro and significant investments by European banks in US securities had a similar effect (McCauley, 2009). Both direct and indirect credits peaked in the first quarter of 2008, and subsequently began to decline. During 2008-2009 global economic crisis trends differ significantly depending on the analyzed group of the host countries: while in developed countries direct and indirect credits declined annually by 0.9% and 3% respectively, in developing countries volume of direct credits decreased (annually by an average of 0,3%) and indirect loans grew up by 0.8% (Zapotichna, 2016). Credit reductions can be explained by various factors, three of which, according to E. Cerutti and S. Claessens, are decisive. Firstly, the deterioration of MNBs' balance sheet, when many of them faced capital shortages and liquidity deficits, especially during 2008-2009. Secondly, the decline in demand for credit due to deteriorating economic conditions, as well as the increase in defaults and other risks from the host countries. Thirdly, increasing regulatory constraints and uncertainty about the future of the world banking system, as well as the rules governing it, including the possibility of free movement of resources within multinational banking groups and across borders. All these factors have forced banks not only to adjust their credit strategies in foreign markets, but to do it in a specific way, in particular, to reduce the volume of direct cross-border credits to a greater extent than indirect credits (Cerutti, Claessens, 2014, 15). After the global economic crisis, the previous trend towards a shift towards a decentralized banking system has intensified. One of the major post-crisis trends has been the slowdown in growth and contraction in cross-border lending. Due to financial difficulties, many MNBs, especially from Europe, have been forced to reduce their cross-border credits and relocate their financial resources on domestic market (market of the home country). This trend has raised concerns among economists that the global financial system is experiencing a period of «deglobalization» and fragmentation. However, the dramatic growth of direct cross-border credits in Asia, in our view, is not a reduction in multinational lending, but a shift in global credit flows and the growing importance of Asian banks.

3. TRENDS AND CHANGES IN MULTINATIONAL BANKING AFTER 2020 CORONAVIRUS OUTBREAK

The 2008-2009 global economic crisis took more than a year to spread from the suburbs of California and southern Spain to the financial centers of the world. The 2020 coronavirus outbreak has taken just three months to engulf first China and now Europe and North America. Westward spread of COVID-19 coronavirus infection triggered an economic crisis whose violence is set to exceed anything the multinational banking has previously witnessed (Tooze, 2020). The coronavirus outbreak, which has quickly evolved from a public health concern to a serious challenge to the global economy, may accelerate reshape previous trends in international banking. Most economists and scholars underline that banks have entered this crisis in a better position than the 2008-2009 economic crisis, when a sharp decline in bank

lending exacerbated the impact of the global crisis on the economy. According to J. Marous, before the coronavirus outbreak, the banking industry has been experiencing an unprecedented period of growth and prosperity. Despite increasing consumer expectations and increased competition from nontraditional financial institutions, most banks and credit unions were stronger than at any period since the crisis of 2008-2009 (Marous, 2020). The higher levels of capital buffers, enhanced supervision and strengthened regulations, central bank liquidity support, put MNBs in a better position than at the onset of the 2008-2009 global economic crisis. This time the banks are even seen as potentially part of the solution and are given a chance to improve their image. But it also presents them with some painful dilemmas. The resilience of banks, however, may be tested in some countries in the face of large market and credit losses, and this may cause them to cut back their lending to the economy, amplifying the slowdown in activity. As mentined in the «Global Financial Stability Overview: Markets in the Time of COVID-19», this crisis «presents a severe threat to the stability of the global financial system. Following the coronavirus outbreak, financial conditions tightened at unprecedented speed. Market volatility spiked and borrowing costs surged on expectations of widespread defaults» (IMF, 2020, 3).

3.1. The weakening position of MNBs from China

Given the fact that coronavirus outbreak was firstly identified in China, the Chinese MNBs can't be bystanders as the crisis develops. According to B. Caplen, «Chinese banks will take a hit from a rise in bad loans as a result of the outbreak of coronavirus, and international banks need to relook at the financing of supply chains» (Caplen, 2020). In times of trouble China turns to its banks. They were the avenue used by the government to pump demand into the economy following the financial crisis 12 years ago. It is likely, therefore, that they will be called upon again to support the economy as it suffers from the spread of coronavirus. The problem is that the banks are less well placed to assist than during 2008-2009 global crisis and they will also take a direct hit to their balance sheets resulting from coronavirus, which was not the case previously. Back in 2008-2009 the Chinese banks did not take a direct hit to their balance sheets as the subprime bad assets that caused the financial crisis were mostly held by Western banks. On top of this they were in robust health, with lots of spare capital, allowing them to make billions of dollars-worth of new loans and help keep China's growth rate high as the global economy, and the economies of China's major trading partners, contracted (Caplen, 2020). Moreover, China's banking regulator was already under pressure to address a shadow banking (Bryane, 2014; Jiang, 2015; Xi, Xia, 2017; Li, Hsu, 2019) and a rising amount of non-performing loans (Kossof, 2014; Zhu, Wang, Wu, 2015; Zhang, Cai, Dickinson, Kutan, 2016; Rehman et al., 2019). The coronavirus, however, and its direct influence on the Chinese economy means that all reform plans will need to dial back to focus on the country's banking system with hundreds of billions of dollars worth of new non-performing assets. Country's big four banks also risk rise in bad loans amid economic recovery effort (Mann, Ridgers, 2018; Peresa, Vidon, 2019). Profit growth of China's big four state-owned commercial banks, which rank among the TOP-20 banks and world's largest lenders, is expected to be eroded and bad debts are likely to stack up in 2020 as banks do their national duty to help battle the economic destruction caused by the pandemic. This, in our opinion, will affect the decrease in lending by Chinese banks in certain regions of the world. For example, this trend has already been noted in Latin America even before the global spread of COVID-19, predicting a bleak economic outlook for 2020 (Soutar, 2020). We can assume that for this region a similar trend will not be long-term, given that these MNBs provide for the resumption of financing and the creation of projects that contribute to the formation and development of the New Silk Road in Latin America (Ugarteche, de Leyn, 2020). Since the outbreak of coronavirus in January, Chinese government has ordered the country's banks to assist to the national recovery by continuing to

lend to troubled companies while also lowering interest rates. Such «national service» is a common practice for state-owned companies in China and often includes making non-commercial decisions to help the economy at the expense of profits. The People's Bank of China has already cut the benchmark lending rate in order to help struggling companies borrow at reduced costs, and analysts expect it to lower the rate several more times this year, further squeezing net interest margins a key gauge of banks' profitability. Industrial and Commercial Bank of China, the world's largest commercial bank by total assets, posted a net profit of $44bn for 2019, up 4.9 per cent from the previous year. Bank of China reported a 4.1 per cent rise in profit, but also noted in its annual report that coronavirus would probably have an impact on the group's asset quality. Agricultural Bank of China, the country's third-largest commercial bank, warned the pandemic could cause distress among its manufacturing customers (Weinland, 2020).

3.2. The changing role of developing and emerging countries as MNBs' host countries

In economic publications the coronavirus outbreak has already been called the biggest emerging markets crisis ever. With their populations at risk, their public finances stretched, and financial markets in turmoil, many developing and emerging countries face a huge challenge. The global shock has an uneven chronology. In the West it was the virus that triggered the financial crisis. In the large emerging countries of the world economy (like Argentina, Brazil, sub-Saharan Africa, India, Thailand, and Malaysia) the virus has yet to arrive at full strength. For them, the financial shock wave is running ahead of the disease. Back to back, the two crises threaten to create an overwhelming whirlpool for developing and emerging countries whose impact on the world economy will be terrific. Historically large capital outflows intensified domestic shocks in developimg and emerging market economies. These developments have raised the risk that the inability of borrowers to service their debts would put pressure on banks and cause credit markets to freeze up. A long-lasting period of dislocation in financial markets could trigger distress among financial institutions, which, in turn, could lead to a credit crunch for nonfinancial borrowers, and this, of course, will further exacerbate economic recession (Tooze, 2020).

3.3. Moving from globalization to regionalization

The experts say that after the coronavirus outbreak the world will be a very different place, as the pandemic is starting to destroy the foundations of the globalization. At the same time they mention, that the coronavirus outbreak is not threatening the future of globalization and is not likely to end globalisation, but is likely to change it for the better. In 2008, the world successfully pulled together when faced with the threat of economic crisis. In 2020, confronted with the threat of the coronavirus outbreak, it is every country for itself. Governments and banks are not coordinating their economic response to the threat (Hutton, 2020). The virus's impact is highly regionalized, but the public policy effects are becoming increasingly nationalized. Globalization can become the biggest victim of the pandemic. A highly interrelated global economy not only facilitates the spread of the coronavirus, but also exacerbates the negative economic consequences. Open economies and economies with a prominent banking sector are particularly vulnerable to economic shocks related to the coronavirus outbreak. The economic losses, in turn, will strengthen forces of protectionism and isolationism. As a result, banking may become more localized and regionalized (Huang, 2020). European banks are under intense pressure as the coronavirus halts all major economies, at a time when these institutions were still struggling with the legacy issues of the 2008-2009 economic crisis. The region's lenders have undergone a massive transformation since 2008 by increasing capital positions and complying with tougher regulations. They have, nonetheless, struggled to return to their precrisis market levels. The European banking index was still down by more than 50% from

March 2008 to the start of this year. Virus-fueled selling in global markets means that the same index is now down 70% from March 2008. «European banks remain vulnerable and fragile from the financial and debt crises and the coronavirus crisis delivers a fresh hit to the financial sector, compounding investor uncertainty» (Amaro, 2020). Scientific literature emphasizes that lending at the regional level may be more attractive than lending at the global level. Banks can benefit from regional specialization because they acquire specific knowledge. Therefore, when MNBs are already active in a particular region, they are likely to seek to expand their presence in the same region. Moreover, MNBs tend to concentrate their activities on the markets within their geographical region or on the markets of countries that have close historical ties (colonial dependence, etc.) with their home country (Ehlers, Wooldridge, 2015).

4. CONCLUSION

Based on the study, the following conclusions and suggestions can be made:

1) the banking industry was much stronger before 2020 coronavirus outbreak than before 2008-2009 global economic crisis. This time the banks are even seen as a potential remedy for the crisis. One of the main legacy issues from the 2020 crisis on multinational banking is the level of bad loans;
2) after the 2008-2009 crisis the financial position of MNBs from China and other fast-growing markets strengthened; their importance for global economy increased dramatically. In contrast, due to the coronavirus outbreak and its consequenses for the Chinese economy, China is very likely to lose its position as a major MNBs' both home and host country;
3) during and after the period of coronavirus outbreak there will be a steady trend in multinational banking towards regional model, as opposed to the global model which they used to implement earlier. In other words, MNBs are likely to focus their activities on local and regional markets, rather than global market.

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MARKETING OF SOCIAL TOURISM

Farhad Rahmanov
Azerbaijan State University of Economics (UNEC)
Baku, Istiqlaliyyat str., 6, AZ1001, Azerbaijan
farhad52@live.ru

Nataliia Letunovska
Sumy State University
Sumy, Rimsky-Korsakov str., 2, 40007, Ukraine
n.letunovska@kmm.sumdu.edu.ua

Oleksii Lyulyov
Sumy State University, Ukraine
Sumy, Rimsky-Korsakov str., 2, 40007, Ukraine
alex_lyulev@econ.sumdu.edu.ua

ABSTRACT
The article explores the issues of social tourism marketing as a driving tool for ensuring the growth of regional socio-economic development. Within the concept of social tourism, a large number of local market entities interact, so it is appropriate to pay attention to its research. Within the study, the authors give hypothesize that the same regional entity that develops in the field of social tourism is perceived differently by subjects that interact with it. In particular, the perceived quality of services and the level of available information will be different for representatives of different regions of the same nationality. A systematic survey of respondents who used the services of the typical regional business entity providing health services for locals, employees of the city-forming industrial enterprise, and the population of Ukraine was conducted. One uses the Smart PLS program to analyze the answers of a marketing survey. It was selected the target outer and inner model variables. The authors obtained discrete results in two cases of analyzes. The same result in both cases was the coefficient of determination that determined customer loyalty. At the same time, for the respondents from other regions, the variables that determined their expectations from the future consumption of services were more important. For the local entities and employees of the enterprise, the actual perceived quality of services was crucial. In the first case, emotional and informational support for service provision prevails, and in the second case, rational motives for consumption. Such a psychological feature of service perception should be taken into account by regional businesses in the field of social tourism while formating their marketing programs of development.
Keywords: *Customer loyalty, Marketing survey, Regional development, Service perception, Social tourism marketing*

1. INTRODUCTION

The tourism industry has become one of the world market leaders. In recent years, this industry has been called the global market driver. According to 2018 data, tourism employed about 300 million people worldwide (Zanuda, 2020). Tourism is accessible in both developed countries and developing countries. A large number of countries are trying to improve their position in the tourism industry (Olefirenko, Olefirenko, 2010; Olefirenko, Karpischenko, 2011; Melnik et al., 2016; Pryima et al., 2017). Tourism from a service that only a select few could afford has become a mass service that can be enjoyed by citizens of any state, regardless of their profession and status. However, everyone chooses to travel both to their taste and to focus on their financial resources or features, such as their health status (individual tourists cannot visit mountain

resorts, it is difficult to carry cruise tours for some of them, a separate category of tourists is formed by people with children, etc.) (Teletov et al., 2013; Khan et al., 2017; Bhandari, 2018; Bilan et al., 2019; Tielietov et al., 2019). Considering the features of the modern tourism industry, we can distinguish its branches: mass tourism (under the special attention of practitioners and scholars of different countries today) and niche tourism (includes several specific destinations). Thomas Cook's, the first tourism marketer, formed the main principle of success in this field, namely "the ability to catch the wave". He organized the first trips for workers from union organizations on their vacation, railroad tours when it first appeared, and its services became available to many citizens, literary trips in places, which were described in works of art of that time, etc.). The process of decentralization, which has been going on for several years in Ukraine, facilitates the transfer of responsibility for resources to specific regions and creates the need for local authorities to take care of revenue part of the local budget (Morscher et al., 2017; Shvindina, 2017; Singh, 2018; Tiutiunyk, 2018; Saher et al., 2018; Pimonenko et al., 2020). The tourism industry can supplement it (Melnyk et al., 2019; Rybina, 2020; Bojarko ey al., 2012; Bozhkova et al., 2018). Many Ukrainian regions include tourism as one of the critical areas of territorial economic development (Kotenko, Illyashenko, 2015; Leonov et al., 2017; Lyulyov, Pimonenko, 2017; Hrytsenko et al., 2018; Vasylieva et al., 2017; Grenčíková et al., 2019). However, the domestic tourism industry is still far from ideal. According to polls (Zruchno.travel, 2018), about 30% of domestic tourists are dissatisfied with the Ukrainian level of tourist service. Furthermore, a higher percentage of dissatisfaction will be for foreign tourists. Much attention soon should be expected to social tourism, including health, medical, green tourism. It is essential to understand the needs of clients properly and, at a high level, to satisfy their requests for successful activities in this field. The authors dedicated the study to investigating social tourism services marketing.

2. THE ESSENCE OF SOCIAL TOURISM

2.1. Literature review of the study of social tourism concept

Scientists have been researching various aspects of the development of social tourism in their works. Their thoughts and experiences are in line with the 2016 Tourism Day celebration in Bangkok's slogan: "Tourism for All: promoting universal accessibility" (Tourism, 2016). The concept of social tourism in modern studies is considered in particular as the accessibility of tourism to the general public regardless of the person's status, age, and gender, which is an especially relevant limitation for some countries. To analyze the term of social tourism, we apply the methods of bibliometric analysis. Thus, the analysis of Scopus scientific-metric base on the keywords "social tourism" showed that the publication activity by a given parameter is low, that is, the field of research is at an early stage of growth, although the first article was recorded in 1953, in 2019 there is a noticeable comparative increase of research. At the same time, 2020, with four indexed documents, is not yet indicative, especially the particular complexity of the subject of the study due to the crisis of the tourism industry, caused by the worldwide pandemic coronavirus (Figure 1. As the pie chart shows, most studies on the concept of social tourism are in the field of social and economic sciences (Figure 2).

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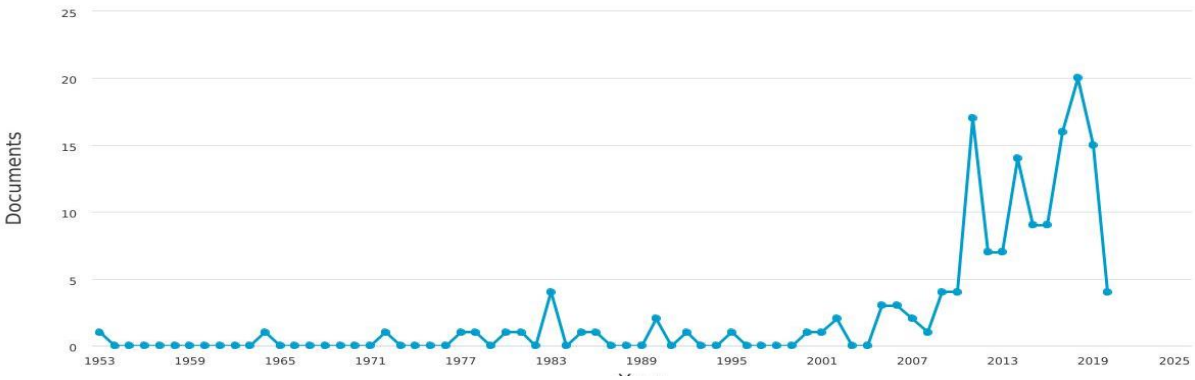

Figure 1: Trend in academic publications in the field of social tourism

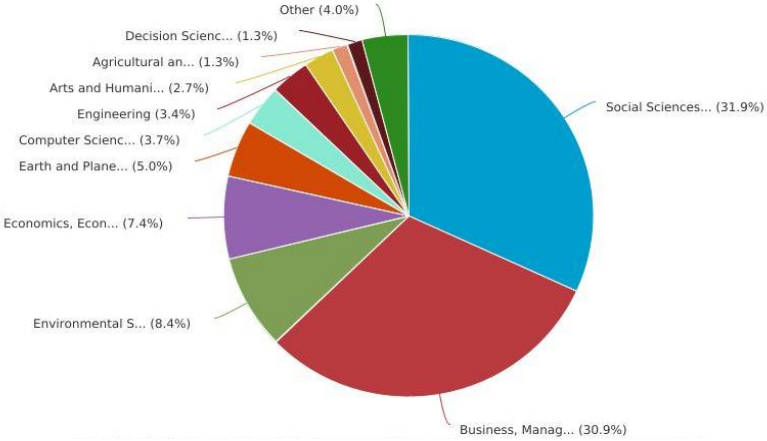

Figure 2: Classification of academic works on social tourism by research of scientific sources

2.2. Development of social tourism in Ukraine and all around the world

The Law of Ukraine "On Tourism" does not mention social tourism (Zakon, 2018). However, the Ukrainian Tourism and Resort Development Strategy until 2026 (Tourism, 2017) notes the obligation to provide access to tourism services for all populations. The official documents refer to the social tourism product as a product that should be accessible to every member of society, meaning that subsidies for recreation and health for low-income citizens are available. This document outlines the predicted indicators of domestic and foreign tourist flows, which should increase by five times and by 2.5 times, respectively, if the Strategy is successfully implemented. However, according to the statistical indicators of 2019, the planned indicators were not reached, namely the increase of the number of domestic tourists by two times (compared to 357 thousand people in 2015) and foreign by 1.5 times (compared to 12.9 million people in 2015) (Table 1). The statistics up to 2018 does not show any significant positive dynamics on these indicators.

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	The 2015 year	The 2016 year	The 2017 year	The 2018 year
Domestic tourists in Ukraine, served by Ukrainian tour operators and travel agents	357,027	453,561	476,967	456,799
Foreign nationals coming to Ukraine	12,900,000	11,600,000	12,600,000	12,400,000
of them: foreign tourists served by Ukrainian tour operators and travel agents	15,159	35,071	39,605	75,945

Table 1: Indicators of tourist flows in Ukraine, persons
(Source: generated by the authors according to the data of State Statistics, 2020)

Statistics on household income and household composition in 2018 (Figure 3) shows that, although 21.3% of full-time workers have more than 315 euros in pay, only one person works in the vast majority of households (the rest of the household are minors, retirees, students or the disabled). That is, even such income should be distributed according to the characteristics of a particular household. The majority of the working population received salaries of up to 250 euros in 2018. It is low compared to European indicators. In 2018, among the European countries, Ukraine was second to last in the average wage - 276 euros (below it Azerbaijan with value in 271 euros) (List, 2018).

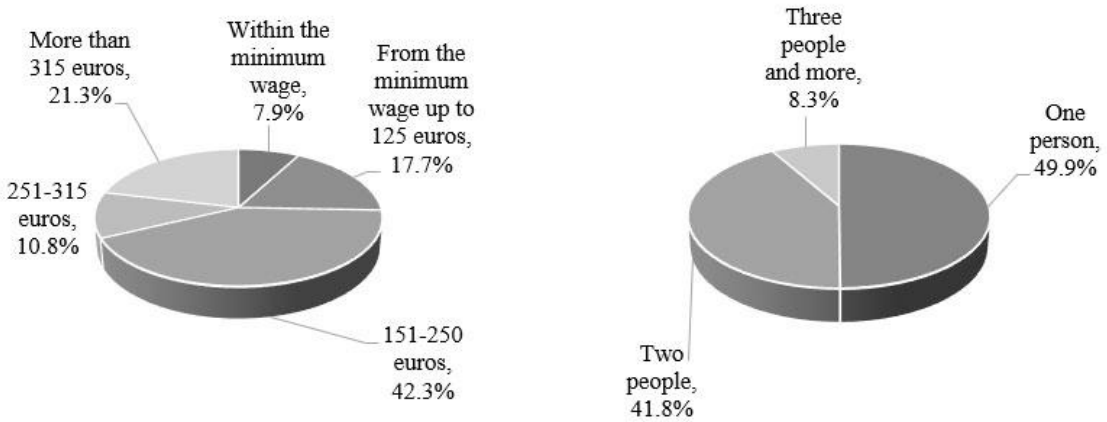

Figure 3: Labor market indicators of Ukraine (Left: salary of full time employees in Ukraine in 2018., Right: Structure of Ukrainian households by the number of presons employed in 2018.)
(Source: built by the authors according to the data of State Statistics, 2020)

By the Numbeo resource rating (Europe, 2018), Ukraine is in the last place among 30 countries in Europe by the quality of life index. It is noteworthy that the index of purchasing power is more than 20 units lower in Ukraine than in the nearest neighbor of the rating Russia. Expenditure on recreation in the total expenditures of households in Ukraine remains low. Comparing the share of Ukrainians' spending on recreation with European households, Ukraine is inferior to the percentage of these spendings. However, when compared to health care costs, they are, in percentage terms, identical to European ones.

Figure 4 shows percentage ratios for the share of expenditure on items in the dynamics. At the same time, four out of five Ukrainians consider their health status to be good (43.1%) or on the medium level (40.8%). Half of the respondents (50.2%) say that they are middling looking after their health (Results, 2017). In terms of socio-demographic features in assessing one's health, Ukrainians are generally similar to Europeans (Health, 2020): men rate their health higher than women. Assessment of human health is influenced by several factors, including environmental, cultural, and socio-economic conditions. With age, self-esteem becomes less. For example, in European countries between the ages of 16 and 44, about 88% of men report good and perfect health. About 86% of women in this age group estimate their health at such level. By the age of 45-64, the percentage of people who are satisfied with their level of health drops to 68% and 65% respectively.

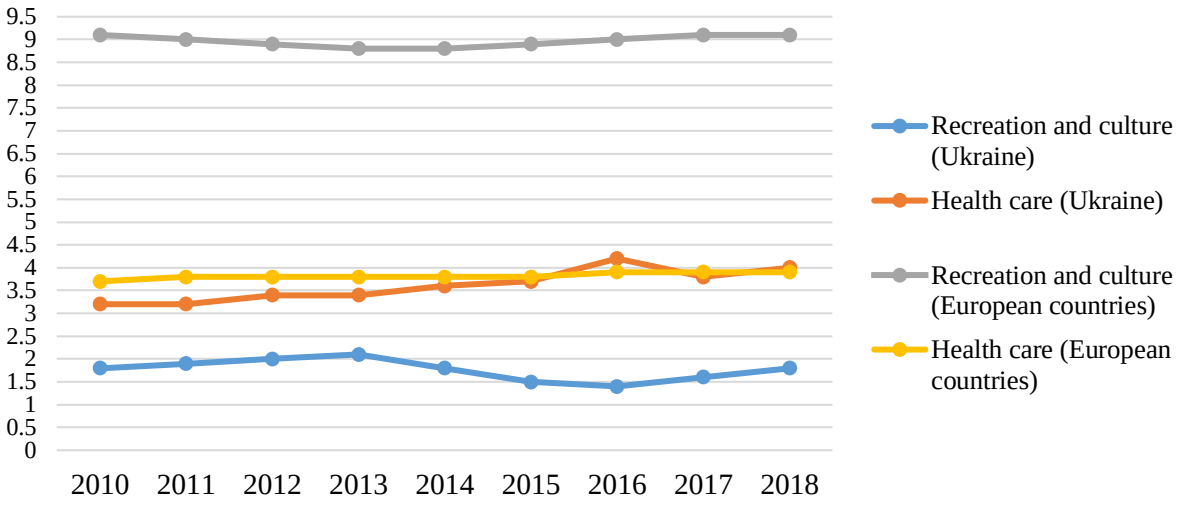

Figure 4: Household expenditures by directions, % of total expenditures
(Source: built by the authors according to the data of State Statistic, 2020 and Household, 2019)

In Ukraine, in Soviet times, almost all tourism was called social because it was paid for 70% of the cost of permits by union organizations of enterprises or existing specialized agencies. Today, incentive tourism, a kind of social tourism, is becoming popular in many countries. These are travel trips organized by companies as a reward for honest work, which is a dominant motivating factor for employees. One often equals social tourism with medical tourism – a niche category that interests tourists that are looking after their health, seeking to recover, or want to combine medical procedures with rest. Niche tourism is a contrast to the concept of mass tourism and implies that such services are of interest to a select category of customers with a specific motivation to purchase a tourism product. Figure 5 demonstrates the classification of social tourism for a better understanding of this category.

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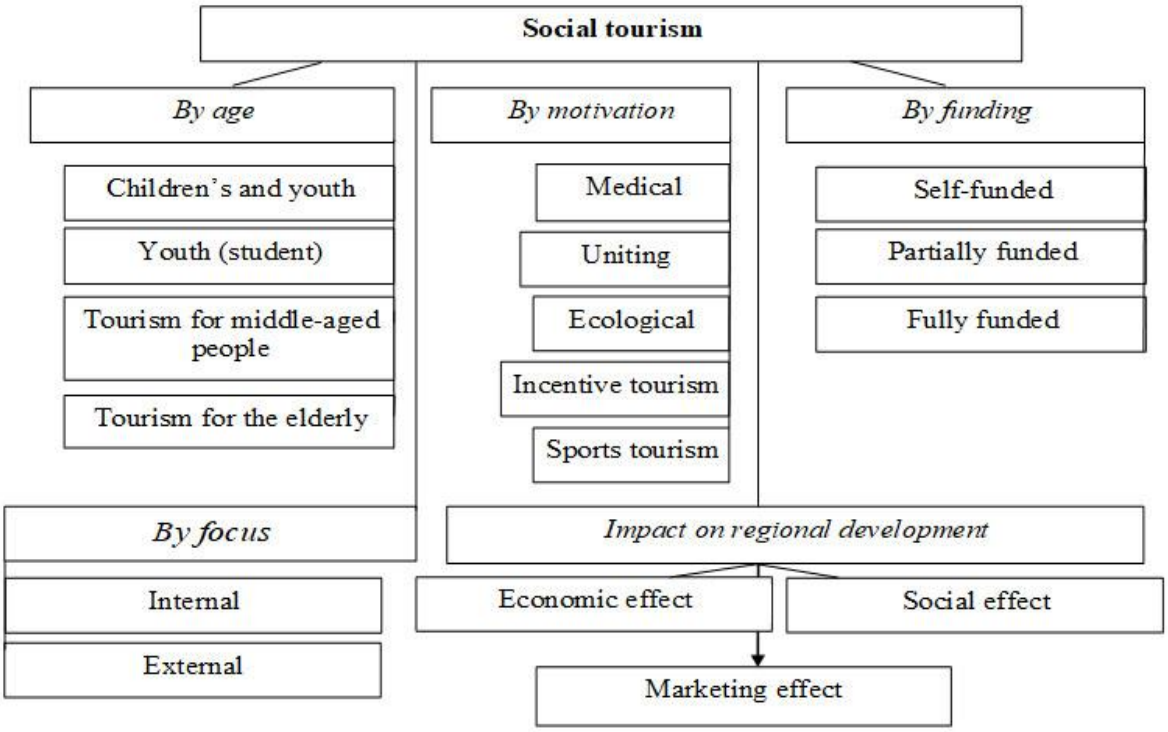

Figure 5: Classification of social tourism
(Source: formed by the authors)

An essential feature of child-youth tourism, because of which it belongs to the category of tourism with a significant social role, is its medical and biological function, which lies in the healing of the younger generation. Despite the high potential of this type of social tourism and its important socio-economic role, only 21% of children aged 7-16 were in Ukrainian health and recreation facilities according to the statistics data of summer 2019 (State Statistics, 2020). The segment of youth (student) tourism in the world is increasing every year. UNWTO estimates (UNWTO, 2020) that by 2030, the number of young tourists in the world will increase to 1.8 billion. A separate segment of this tourism is educational tourism and tourist exchanges. Indeed, most researchers in this field argue that the primary purpose of youth travel is education. In Ukraine, according to surveys, young people aged 14-29 cannot afford to travel abroad (62%) or travel Ukraine (50%) due to a lack of funds. Only about 20% of young Ukrainians took advantage of volunteer travel opportunities (Results, 2017). Tourism for middle-aged people is the largest segment of the domestic tourism industry. According to the results of 2019, this age category accounted for more than half of the tourist departures from the leading tour operators of Ukraine (Join, 2020). Social tourism has significant relevance for people of working age, who form human capital, professional resources for the development of the national economy (Kolomiiets, Petrushenko, 2017; Shvindina, 2017). Maintaining and restoring physical and emotional health is an essential foundation for high human productivity (Kotenko et al., 2015; Artyukhov, Liuta, 2017; Pimonenko et al., 2018; Hens et al., 2019; Ibragimov et al., 2019). In highly developed countries, the travels of the elderly are widespread and popular (Letunovska et al., 2017; Kyrychenko et al., 2018; Kuzior et al., 2019; Kwilinski et al., 2019). The same category of tourists in Ukraine can count only on a sufficiently limited spa treatment. According to the authors' mind, the best description of the phenomenon of social tourism is given by the following types: medical (the search on the Internet also shows the phrase "health tourism"), uniting, ecological, incentive tourism and sports tourism. While much of the world is drawn to the concept of "medical tourism", the phrase "health tourism" is more prevalent in some European countries (e. g., 60% versus 40% in Great Britain) (Figure 6).

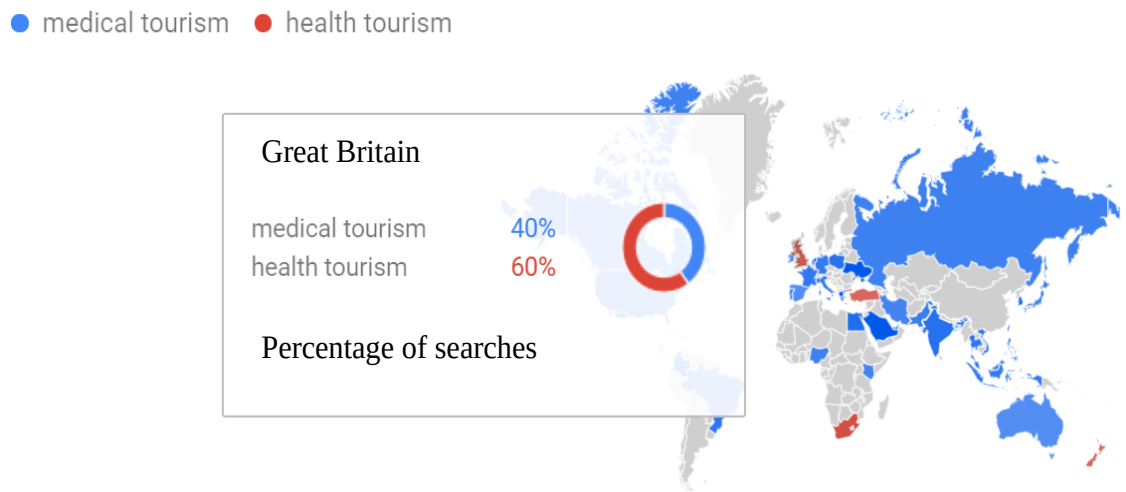

Figure 6: Search Query Ratio in Google Trends for phrases "medical tourism" and "health tourism"

Sports tourism, developing on the verge of sports and active leisure in the natural environment, promotes the development of domestic tourism. It is a low-cost, socially accessible type of tourism due to minimizing the costs of material and technical infrastructure (Chigrin et al., 2011). Uniting tourism is still only gaining popularity. Some of its elements are implemented to domestic realities. Its communicative role is essential (Letunovska, 2013). This type of tourism one can divide into two subspecies: (1) tourism for geographically remote populations (for persons living in remote territories to increase their opportunities for communication); (2) tourist attractions that bring people together (all kinds of thematic tourist establishments that gather visitors for a specific purpose, for example, the famous Peter's Cafe that allows discussing innovative ideas or domestic examples of cat cafes for cat lovers). The thematic focus of catering establishments is becoming an increasingly popular concept in the world. Moreover, it has the potential for the growth of its social role. It is necessary to consider the concept of incentive tourism which is determined by the priority of the need for it by a consumer (an employee of a particular company) and is a determinant of building effective interaction in the four-component system "employee - enterprise - tourist entity - tourist destination" (Letunovska, 2017). This type of tourism is particularly popular among Ukrainian start-ups with foreign capital that send their employees on annual vacations, group trips or team-building trips, and this is part of their motivation system. The first incentive tour was organized in 1910 in the United States by the National Cash Register Company of Danton when its agents and dealers were rewarded with a free trip to New York for excellence in work, but regular use of promotional travel began to be used only in the 1960s with the launch of civilian jet flights (Incentive, 2015). The popularity of MICE manager positions is increasing among the vacancies of large and medium-sized Ukrainian and foreign companies, whose primary responsibilities include organizing of incentive tours. Experience in organizing events and projects on different scales and the ability to follow a 360-degree marketing and organizational approach are crucial to such a professional. Social tourism improves the economic situation in the region through the activities of a network of thematic tourist establishments. In addition to the economic and social effects, social tourism has an important marketing effect. It is manifested in the awareness of the tourist product among a large number of a potential audience after its consumption and in the formation of a certain image of a territorial product. There are many requirements for professionals in the field of tourism marketing, in particular social tourism. Glassdoor site analysis (Glassdoor, 2020) by influential global tourism market players showed vacancies in the tourism industry that are offered (Table 2).

Company	Country	Vacancy	The need for knowledge in marketing
American Express Global Business Travel	Great Britain	Travel Counselor	Ability to deliver excellent customer service through professional communication to a client base with very high expectations.
Expressions Holidays	Great Britain	Personal Travel Specialtist	Marketing aptitude and be very numerate.
Uniglobe Candes Travel, Inc.	USA	Tourism Manager	Main responsability is to develop, negotiate, consolidate and complete tourism products and packages to feed the operation and to selling them to both markets, B2B and B2C, locally, domestically and internationally.
uAdventure	USA	Travel Agent	Ability to understand clients travel goals and needs and exceed their expectations.
BKM Vacations	USA	Travel Consultant	Be adept about using social media.
MelRose Travels	USA	Travel Consultant	Candidates should apply proven marketing travel techniques.
Satguru Travel & Tourism LLC	USA	Travel Consultant	Excellent customer service and marketing skill required

Table 2: Jobs in the field of tourism marketing from global companies and the role of marketing experience for applicants
(Source: created by the authors based on the results of the analysis of vacancies on the site Glassdoor)

Most vacancies assumed that the specialist should understand marketing and successfully apply marketing tools when offering and providing services in the tourism sector.

3. CONCLUSION

Considering the popular concept of the Ps in marketing in the sphere of tourism, in particular social, it is appropriate to expand the content by adding the "Perception" component which includes satisfaction with the quality of the tourist product (Figure 7).

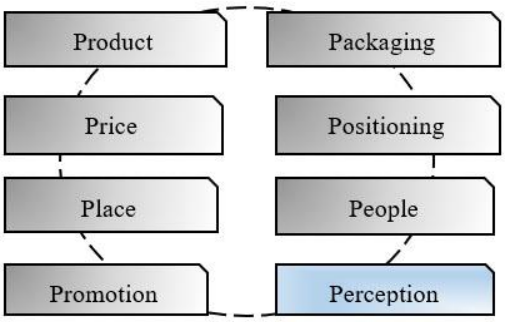

Figure 7: 8 P in social tourism marketing
Source: formed by the authors

In the field of providing social tourism services, the perception of the quality and content of a particular customer's product according to his or her characteristics is a determining factor for a positive impression and re-use of a product. Successful marketing should be based on identifying the characteristics of a tourism product that are distinctive and most relevant to each customer. The well-known fast-growing tourist company "Velocity" noted: "Passion for delivering a great service to customers" (Glassdoor, 2020) is the key to successful and productive work in the tourism field. The importance of such a marketing component of the tourism product as its perception by consumers, without which it is impossible to build effective interaction with the target audience and to form a loyal customer group, will be analyzed. In order to analyze the authors' assumptions, a survey was conducted among clients of a typical institution in Ukraine (Sumy), providing medical tourism services (recreation services in the forest area, sanatorium treatment). The respondents are people aged 28 to 65, women and men (56 and 44% respectively), who consumed services (fully-funded and partly-funded). In the summer of 2019, this facility provided services for partial financing for clients, when an enterprise bore part of the costs of employee health care. That is, all respondents under partial funding are employees of a local enterprise. There were 35 such respondents in the sample. And there are 23 respondents on terms of full payment in the sample. Most of them are people from other regions of Ukraine who came to rest in another region and receive health services in parallel. The questionnaire consisted of statements that had to be ranked according to the Likert scale: (1) completely disagreed with the statement; (2) disagree; (3) to some extent disagree; (4) more agree than disagree; (5) to some extent agree; (6) agree; (7) fully agree. "Expectation" component of social tourism service delivery that precedes the receipt of the service is decisive: "I will receive what I expect" ("Perception" from the components of the marketing complex). The internal relationship model of the components ("Quality", "Expectation", "Satisfaction" and "Loyalty" with the use of Smart PLS software shows that expectation most influences the further formation of customer loyalty (coefficient 0.377) receiving services at conditions of partial payment, which is enhanced by the acceptable quality of service provision (coefficient 0.342) (Fig. 8). It follows that it is essential to work first and foremost with informing potential consumers about the services they can get. It is important to note that feedback from other employees of the enterprise is essential, which forms the expectations of future consumers. It should be noted that the coefficient of determination of R^2 for the loyalty parameter is calculated at 0.727, which means that three latent variables ("Quality", "Expectation", "Satisfaction") influence the "Loyalty" parameter quite strongly. For example, "Quality" and "Expectation" by 77.2% determine the value of the parameter "Satisfaction".

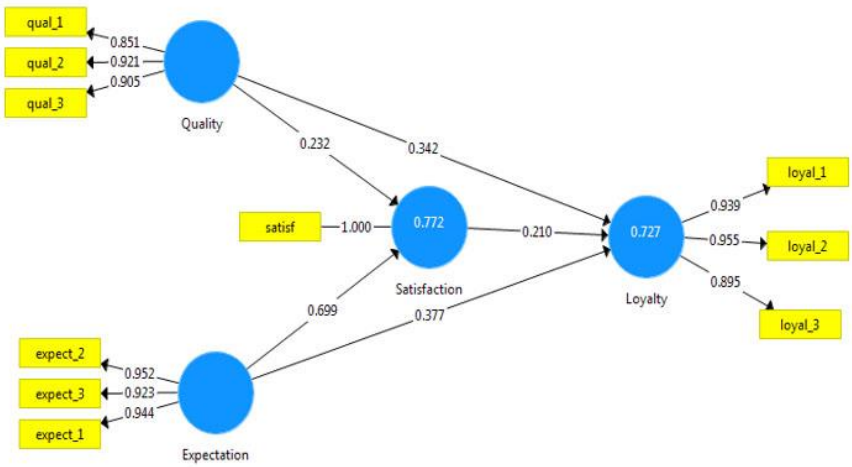

Figure 8: The results of the analysis of the respondents answers
(Source: Services of the tourist institution in terms of part payment)

quil_1 - services are provided at a high level; quil_2 - services are available; quil_3 - full information about tourist offer; expect_1 - the institution has a wide range of primary and additional services; expect_2 - the institution has "great atmospheric element"; expect_3 - using the service, I got the desired result; satisf - complete satisfaction with a service; loyal_1 - I recommend the institution to others; loyal_2 - I will visit this institution in the future; loyal_3 - if I choose between similar establishments in different regions, then I will choose this one. For the category of clients receiving full-payment services, the results of the analysis of the answers to the questionnaire are somewhat different (Figure 9).

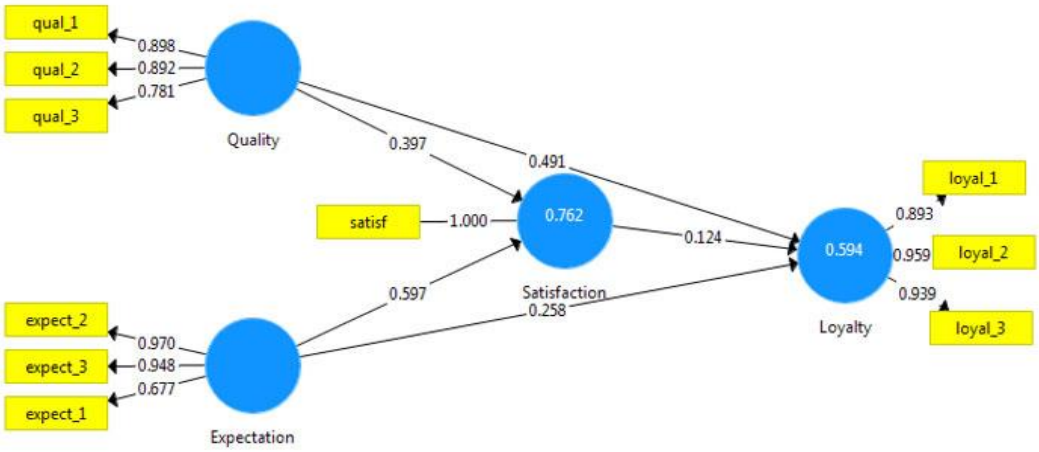

Figure 9: The results of the analysis of the respondents answers
(Source: services of the tourist institution in terms of full payment)

quil_1 - services are provided at a high level; quil_2 - services are available; quil_3 - full information about tourist offer; expect_1 - the institution has a wide range of primary and additional services; expect_2 - the institution has "great atmospheric element"; expect_3 - using the service, I got the desired result; satisf - complete satisfaction with a service; loyal_1 - I recommend the institution to others; loyal_2 - I will visit this institution in the future; loyal_3- if I choose between similar institutions in my region, then I will choose this one Customers on full payment terms are more demanding about the quality of the services they receive directly at the place of their provision (the value of the coefficient of concordance R^2 is 0.491 versus the value of 0.258 for the "Expectation" parameter). For such target consumers, the defining components of the marketing mix are "Product" and "Place".

4. CONCLUSION

An analysis of the response base of the respondents who were clients of the medical tourism establishment in two cases showed slightly different results. In both cases, for both partial pay customers and full-pay customers, the loyalty indicator is mostly determined by the aggregate interaction of the three parameters - "Quality", "Expectation", and "Satisfaction". At the same time, for respondents with full pay, mainly from other regions, the variables that determine their expectations from future consumption were more important ("Perception" component with the proposed concept of the supplemented marketing concept). For part-time customers, mostly local business employees, the perceived quality of service was more important ("Product" and "Place" components of the marketing concept). In the first case, emotional and informational support for the provision of tourist services prevails. In the second case - rational motives for consumption. Such features of social tourism product promotion should be taken into account by regional businesses when developing and modernizing their marketing strategies in the tourism field.

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RESEARCH OF INDICATORS OF QUALITY OF RIVER CANCER, (ASTACUS LEPTODACTYLUS) FISHED FROM MINGECHAUR RESERVOIR

Farida Guliyeva
Azerbaijan State University of Economics (UNEC), Azerbaijan
farida- qulieva76@ mail.ru

ABSTRACT
The article provides data on the organoleptic and physico-chemical assessment of the quality of crayfish caught from the Mingachevir reservoir. When assessing the organoleptic characteristics of crayfish, the appearance, taste, smell and texture were determined. The meat of crayfish is dietary, easily digestible, contains a large amount of protein (16%), calcium, vitamins E and B12 and a minimum of calories (68 kcal or 292k J), fat (0.5%), cholesterol. Crayfish is a delicacy. The main volume of nutritious crayfish meat is in the abdomen and its somewhat smaller amount in claws. In benign crayfish, the carapace is clean, without growths and strong enough. Crayfish with external injuries, a soft shell with claws down or torn off with signs of disease and other defects from the place of catch should not be shipped. To study the quality of crayfish (Astacus leptodactylus), in 2019, samples were taken from the Mingachevir reservoir. The fishing length of the samples taken for research was 13 cm, weight 119 g, respectively. The first duty during the study period we determined organoleptic indicators (appearance, size, smell, color, the presence of damage and disease, the condition of the shell). The samples taken have an intact and sufficiently strong chitinous cover, the body is clean, greenish-brown. The smell of crayfish corresponds to the smell of fresh cancer, without extraneous and unpleasant odors. Thus, the results of the organoleptic studies of crayfish showed that the organoleptic quality indicators of crayfish samples met the requirements of the state standard, and there were no special cases of deviation from them. From the physicochemical parameters in the meat of crayfish, the mass composition, the amount of nitrogen-containing substances, and fat are determined. The results of the study showed that the crayfish samples taken were fresh and suitable for human consumption.
Keywords: *Assessment, crayfish, physicochemical method, Mingachevir reservoir, organoleptic method*

1. INTRODUCTION

As you know, the seas and oceans store huge wealth of non-fish food: these are crayfish, crabs, mollusks, squids, cuttlefish, all kinds of edible seaweed, etc. These products have the same nutritional qualities as fish, and in some cases surpass it . For example, their fat is characterized by a high content of phosphatides and polyunsaturated fatty acids, especially arachidonic. The meat of crayfish is dietary, easily digestible, contains a large amount of protein (16%), calcium, vitamins E and B12 and a minimum of calories (68 kcal or 292k J), fat (0.5%), cholesterol. Chitinous cover containing biologically active substances is an excellent antiseptic and has a wound healing property. The use of cancers has a stimulating effect on the body, it is recommended for people with diseases of the liver and cardiovascular system. More than 8500 species of Decapoda are known in the world fauna, of which 280 species are recorded in the CIS, and 6 species in the Caspian Sea. In fresh water bodies of Azerbaijan, a total of 5 types of crayfish were found. Of these, the crayfish Astacus pylzowi (Scor.) Is found in the Ganikh, Agrichay, Aljiganchai, Gekchay, Girdymanchay rivers and is endemic to Azerbaijan. However, long-crawfish - Astacus leptodactylus Esch., Which can be used as a valuable food product due to its relatively high abundance, is widespread in the fresh waters of Azerbaijan. Along with the nutritional value of this product, its quality plays an important role.

The quality of any product, including crayfish, is determined by organoleptic and physico-chemical methods. The main goal of the research work is to identify the compliance of the quality indicators of crayfish sold on the consumer market of the republic with the requirements of regulatory and technical documentation. To assess the quality of crayfish meat according to organoleptic and physicochemical parameters, research methods generally accepted in commodity science were used.

2. ASSESSMENT OF QUALITY INDICATORS OF CRAYFISH (ASTACUS LEPTODACTYLUS) BY ORGANOLEPTIC METHOD

When assessing the quality of crayfish, attention is paid to the appearance, size, condition of the carapace, the presence of injuries and diseases. The quality of crustaceans is determined by the adopted legislative act of the European Union CAC / GL 31-1999. Sensory assessment of fish and crustaceans in laboratories. According to the size of the crayfish, they are divided according to their fishing length: on large ones - more than 11 cm, medium - 9-11 cm and small ones - 8-9 cm. Crayfish less than 8 cm cannot be caught. Fishing length is the length measured from the back from the eye to the end of the tail plate. The larger the crayfish, the higher their value. In benign cancers, the shell is clean, without growths and strong enough. Crayfish with external injuries, a soft shell with claws down or torn off with signs of disease and other defects from the catch should not be shipped. To study the quality of crayfish (Astacus leptodactylus), in 2019, samples were taken from the Mingachevir reservoir. The fishing length of the samples taken for research was 13 cm, weight 119 g, respectively. The first duty during the study period we determined organoleptic indicators (appearance, size, smell, color, the presence of damage and disease, the condition of the shell). The samples taken have an intact and sufficiently strong chitinous cover, the body is clean, greenish-brown. The smell of crayfish corresponds to the smell of fresh cancer, without extraneous and unpleasant odors. Thus, the results of the organoleptic studies of crayfish showed that the organoleptic quality indicators of the samples taken of crayfish meet the requirements of the state standard, and there are no special cases of deviation from them.

3. EVALUATION OF THE QUALITY OF CRAYFISH BY PHYSICO-CHEMICAL METHOD

Assessment of the quality of crayfish (Astacus leptodactylus) by the physicochemical method
By physicochemical methods in crayfish, we determined the mass composition, the content of volatile nitrogenous bases, and fat.

3.1. Determination of the mass composition of crayfish (Astacus leptodactylus)

The mass composition of crayfish is the ratio of the mass of individual parts of its body and organs as a percentage of the mass of crayfish in general. The mass composition of crayfish varies depending on the type, physiological condition and method of cutting crayfish. Therefore, the study of the mass composition of crayfish is of great practical importance. To determine the mass composition, we took and weighed 30 individuals of crayfish. The arithmetic average value of the mass of crayfish was 119 g. The first debt we weighed crayfish as a whole. After that, the tail, internal organs and other parts were removed, the cephalothorax was carefully separated. First, we determined the mass of these parts separately, then the total amount of edible parts. The crayfish sample taken for analysis has a total mass of 119 g. Of these, the cephalothorax is 63.2 g, the chitinous cover is 4.2 g, the internal organs are 8.8 g, the limbs are 15.3 g, and the tail is 27.5 The calculation is made with an accuracy of 0.1. The results are shown in table 1.

The name of the parts of the crayfish		Mass, grams	The yield of crayfish by mass in%
Total length of crayfish		119	100
1	Cephalothorax	63,2	53.1
2	Chitin cover	4,2	3,5
3	Internal organs	8,8	7,4
4	Extremities	15,3	12,9
5	Tail	27,5	23,1

Table 1: Mass composition of parts of crayfish

By the percentage of the volume of crayfish meat compared to other crustaceans consumed by people, crayfish is not a record holder, although it exceeds a number of food crabs. In other words, there is little meat in adult crayfish. If the kilogram of whole shrimp contains about 400 grams of meat, then the kilogram of crayfish is only 100-150 grams (abdomen and claws), while crayfish are about 3-4 times more expensive. It is likely that the consumption of crayfish itself mainly rests on a rather attractive appearance of all kinds of dishes decorated with boiled crayfish, and partly a long tradition

3.2. Determination of nitrogenous volatile bases in meat of crayfish (Astacus leptodactylus)

When spoilage of crayfish as a result of the activity of proteolytic microflora in the meat of crayfish, nitrogenous bases accumulate - ammonia, primary amines and trimethylamine. The essence of the method is the distillation of volatile bases, which are captured by sulfuric acid. The total number of volatile bases is determined by titration of the obtained distillate of 0.1 N. NaOH solution in the presence of methyl red indicator (methylroth). Trimethylamine in distillation from crayfish is determined by the principle of formal titration; while ammonia and primary volatile amines are bound in distillation by formalin. Trimethylamine nitrogen is determined by the difference between the nitrogen content of all volatile bases and the nitrogen content of ammonia and primary amines. Determining nitrogenous volatile bases, we obtained the following results: the amount of nitrogen of all volatile bases is 16.8 mg%, while in fresh crayfish the amount of nitrogen of all volatile bases does not exceed 15-17 mg%; in the muscles of stale river cancer, its content is more than 30 mg%. The amount of trimethylamine according to our results was -5.6 mg%, while the amount of trimethylamine in fresh crayfish should be no more than -7 mg%, in crayfish of suspicious freshness -7-20 mg%, in stale - more than 20 mg%. Our data make it possible to say that the meat of the taken samples of crayfish according to the content of nitrogenous volatile bases and the content of trimethylamine are normal. This means that the meat of the test sample of crayfish is fresh and suitable for consumption.

3.3. Determination of fat content in crayfish (Astacus leptodactylus) by the acidometric method

The essence of this method is that the non-fat part of the sample is dissolved in sulfuric acid. Fat diluted with amyl alcohol is separated from the solution by centrifugation and quantified in the butyrometer. Determining the fat content in meat of crayfish, according to the above method, we obtained the following data.

$$X = \frac{0,7 \times 0,01133 \times 100}{2} = 0.37\%,$$

Comparing the results with the literature data, we can say that the fat content in the studied meat of crayfish almost coincides with the author's data.

4. CONCLUSION

1) The results of organoleptic studies (appearance, size, smell, color, damage and disease, condition of the carapace) of crayfish (Astacus leptodactylus) showed that these quality indicators in the samples taken meet the requirements of the state standard (CAC / CL 31-1999) and special cases of deviations from them were not noted.
2) By laboratory methods in crayfish meat, the mass composition, the content of volatile nitrogenous bases, and fat were determined. The results of the study showed that the crayfish samples taken were fresh and suitable for human consumption.
3) The meat of crayfish is dietary, easily digestible, contains a large amount of protein (16%), calcium, vitamins E and B12 and a minimum of calories (68 kcal or 292k J), fat (0.5%), cholesterol. Crayfish is a delicacy. The main volume of nutritious crayfish meat is in the abdomen and its somewhat smaller amount in claws.

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THE ROLE OF BIOKIBERNETICS IN THE HUMAN IMMUNOLOGICAL SYSTEM

Vladimir Nikolayevich Golubev
Professor, Scientific Director of the Biotechnological Center,
Institute of Agrotechnology at the State University of Girona
17071, Girona, Spain
vlgolubev@hotmail.com

Farzaliyev Elsevar Baba Oglu
Associate Professor, Candidate of Technical Sciences,
Department of Food Technology, Azerbaijan State Economic University,
1001, Istiglaliyat Street, 6, Baku, Republic of Azerbaijan
elsevar60@rambler.ru.

ABSTRACT

This article discusses the influence of xenobiotics on the human immunological system and the relationship of the new science of bio-cybernetics. The formation of a healthy nation is the foundation for any state through safe food and healthy nutrition. Recently, there has been a tendency towards a growth in food products of a foreign producer, and the population has observed malnutrition. This fact leads to a violation of the nutrition of the population. One of the important components of proper nutrition is the use of plant products that have dietary, therapeutic and prophylactic properties. The importance of theoretical justification and practical application lies in the fact that providing the population with BIO-, ECO food products. The actual question is considered: how does the chemical external environment "communicate" with the internal environment of the body? Great opportunities have been established for implementing the principle of immunochemical education in pharmacology, toxicology and dietetics.

Keywords: *Immunological system, xenobiotics, cytochrome P-450, environment, bio-cybernetics*

1. INTRODUCTION

The huge role of immunological mechanisms in protecting the body against bacteria and their toxins is well known. It is also well known that the immunological mechanisms of binding and removal from the body extend to a wide variety of macromolecules. It is also axiom that the immunological system controls cellular and macromolecular homeostasis. But it is much less known that the immunological system reacts in the same way to organic low-molecular compounds. It is quite possible that all together known harmful substances: carcinogens, mutagens, poisons - make up only a certain fraction of the danger caused by the existence of foreign substances in the environment [1]. It has been established that antibodies capable of binding them in the body and inactivating can be produced for low-molecular substances. This is indicated for various drugs: for morphine, barbiturates, cardiac glycosides, etc. The ability of antibodies to inactivate endogenous substances is also already known. This situation is proved by the example of antibodies to steroid hormones, prostaglandins, serotonin, melatonin, histamine, pyridoxal, etc. The same can be said for various environmental substances, including carcinogens [2-4]. According to the intensity and quality of the xenobiotic oxidation system (according to metabolic parameters), several genetically determined groups can be distinguished among people or animals. Recently, there are facts showing that it depends on which group an individual depends on whether he will get sick, for example, with carcinogenic cancers or not.

In general, it is becoming increasingly clear that the immunological system is able to participate in homeostasis not only at the cell level (and reject alien or own, but altered cells) and at the level of macromolecules, but also at the level of low molecular weight compounds, that is, immunological control is total and spreads on a variety of molecules: high molecular and small, alien and own [5]. Every living organism is an open system for the surrounding chemical environment and is inseparable from it. An intensive stream of various natural chemical compounds (bacteria, algae, fungi, higher plants, animals) passed and passes through the organism, which is at any stage of the evolutionary ladder. With the evolution of the animal and plant world, the spectrum of chemical compounds acting on this world has steadily expanded. Probably, chemical evolution and evolution of living things are interconnected. Here there is a self-developing system, organized in such a way that chemical evolution triggers biological evolution, leading to the emergence of new substances that re-act on the living and cause it to change to infinity. The proportion of xenobiotics among this stream depends on the rate of change of the chemical environment surrounding the organism. The severity of the situation for humanity consists precisely in the fact that recently the chemical environment for humans is changing rapidly [6-7]. The question arises: how does the chemical environment "communicate" with the internal environment of the body? This question is very complex and relevant.

2. THEORETICAL ANALYSIS

In our opinion, one of the main places of such "communication" is cytochrome P-450, which is present in every living organism: from bacteria to humans. This chemical oxidation system has gone through millions of years of evolution and has retained a central role in the metabolism of chemical compounds. In the form of cytochrome P-450, nature has created an enzyme that provides optimally open and at the same time maximally safe genetically "communication" with countless chemical compounds of the most diverse chemical structure [8]. Xenobiotic somehow "communicates" with the genetic apparatus of the cell. Therefore, cytochrome P-450 containing monooxygenase system can be considered as an adaptive (optimizing) device (a peculiar chemoreceptor or chemoanalyzer) that reacts to changes in both the external and internal hydrophobic environment [9]. It is extremely important for understanding the operation of this chemoreceptor intracellular device once again to draw attention to the following. At the level of cytochrome P-450, two streams of compounds are mixed — exogenous and endogenous. They belong to the most important regulators of the function of the cell and the organism as a whole, and in particular (such as steroids, for example) directly change the activity of the genome. It would seem that this "confusion" is evolutionarily inexpedient: it is dangerous to combine the internal environment with the external at the metabolic level. But this mechanism has withstood the selection for millions of years and is highly evolutionary expedient [10]. We believe that this mechanism allows the cell to obtain information about the external and internal chemical environment and to react to it with the synthesis of certain macromolecules. Moreover, foreign substances (with certain exceptions) are not allowed to the genetic apparatus (this is very dangerous), "communication" with them proceeds indirectly, for example, through steroids [11]. The mechanism for entering the xenobiotic information to the DNA is probably also extremely simple in principle. Oxidized on cytochrome P-450, xenobiotic changes the metabolism of steroids and, consequently, their level in a given cell. A change in this level leads to the activation of certain genes and the induction of RNA synthesis, and then the enzyme [12–13]. The hypothesis we expressed, naturally, requires various experimental support, however, there seems to be no apparent contradictions with the available scientific data. We, like many other researchers, believe that the main goal of science is to discern the basic concept behind a variety of facts and highlight the principles on the basis of which predictions can be made.

Environmental chemicals can be selected by evolution and become necessary components of cells and cell communities, if an alien compound finds its own specific, that is, adequate functional application. The monooxygenase system can also be involved in this conversion of xenobiotics to the endogenous substance [14]. So, the communication of living organisms with the chemical environment takes place with the indispensable participation of a universal monooxygenase system with a mixed function. From a practical point of view, the ability of the organism to quickly process information about chemical compounds through the recognition of "substrate images" of the environment provides a fundamentally new way of developing the structure of nutrition and creating combined foods with predetermined functional properties. These functional properties provide not only the system of protection of the organism, not only against foreign agents, but also low-quality (sick) cells of the organism itself [15-17]. This path opens up real opportunities for the creation of fundamentally new biologically active substances based on the principle of directed synthesis of chemical compounds that could become "functional components" of food products of the XXI century, capable of solving actual problems of human health and efficiency. All of the above creates a theoretical basis for a fundamentally new diet - the science of proper and appropriate nutrition of a healthy and sick person. This science is a bio-cybernetic diet that relies on the chemical regulation of the function of various homeostatic systems and subsystems, through its influence on direct and feedback links and on the induction of the synthesis of biologically active structures (antibodies, receptors, mediators, hormones, etc.). In the modern world they are called - "food additives of the XXI century". The highest task of the bio-cybernetic diet is to develop the principles of body training using chemical information, which will make the body significantly more stable and adaptable to various external environmental influences and disturbances to the internal human environment. It is quite obvious that by introducing chemical information in conditions conducive to its memorization in the immunochemical functional system of homeostasis, one can increase the stock of "ecological knowledge" regarding chemical structures and enrich the range of food additives. The success of this science can be based on the fact that the immunochemical functional system of homeostasis contains the natural ability of an organism to recognize a huge number of chemical compounds with which it has not previously interacted, and also to create, in accordance with the ecological situation, new structures, structures [18]. A wide variety of conjugated antigens have been synthesized to induce an immune response in the body against a wide variety of xenobiotics, as well as hormones, neurotransmitters and other regulatory molecules.

3. CONCLUSION

It should be noted that the principle of immunochemical training of the body through the introduction of chemical information into it has long been widely implemented in medical practice, in particular, by vaccination. Until recently, only immunologists were engaged in this. Now there are great opportunities for the implementation of the principle of immunochemical education in pharmacology, toxicology and dietetics. Thus, on the threshold of the twenty-first century, all initial conditions have been created for the development of a "training immunochemical dietology," that is, a bio-cybernetic diet.

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HOW TO INCREASE THE EFFICIENCY OF UTILIZATION OF CREDIT RESOURCES BY THE PRODUCTION SECTOR

Javadov Ramiz Javad
Associate professor at
Azerbaijan State University of Economics (UNEC)
Baku, Istiqlaliyyat str.6, AZ1001, Azerbaijan
ramizjavad@mail.com

Feyzullayev Mushfig Ahad
Candidate of Economic Sciences,
Associate Professor at Surgut State University
628400, Tyumen Region, Surgut, 1.Lenin Str., Russia
feyzullaev@bk.ru

ABSTRACT

The article is devoted to the determination of the role of credit resources in improving of production efficiency in the economic space. The influence of various factors on the investment potential of the country have been substantiated by the authors, including the assessment of the devaluation mechanism of replenishing the budget and the chronicle decline in real incomes of the population over the five years. The researches have been carried out and analyzed the development of various authors of world and domestic economic science in the theoretical part of the article. The authors analyzed the factors affecting the pace of development of the country's economy, analyzed the influence of the key rate of the central bank on the cost of borrowing credit resources in the credit market. Based on the analysis of the world countries experience, a three-factor model was developed and proposed, and a formula for the effectiveness of credit resources was formulated depending on the bank margin indicator and the key rate of the central bank. Examples of the utilization are given by leading countries of the world of the key rate as the main element of economic development. The main directions are proposed in the framework of the formation of an effective monetary policy, contributing to the improvement of the investment climate and the development of the manufacturing sector of the economy. The influence mechanisms and the possible effectiveness of the proposed areas of monetary stimulation of the production sector are determined. In particular, attention is focused on targeting, innovativeness and investment efficiency, where the banking sector plays a high role and responsibility.

Keywords: *production efficiency, key rate of the central bank, bank margin, credit resources, real income of the population, investment potential, devaluation mechanism, monetary policy*

1. INTRODUCTION

The stagnation of the Russian economy over the past few years has led to a decline of real incomes and slowdown of demand. Despite the growth in lending, the real increase in gross domestic product lags far behind world average levels. The relevance of the article is connected with the importance of carrying out researches of the main factors affecting the growth of the country’s economy, and develop recommendations for improving the efficiency of the use of credit resources by enterprises. Large-scale measures of state stimulation and support of economic transformations, filling the world economy with cheap financial resources, have become catalysts for the growth of developing economies in the last decade. World central banks, such as the US Federal Reserve System, the European Central Bank, the Bank of Japan and other banks, by keeping key rates near zero, support their own economies. Our country, which has enormous potential, provided with all the resources, the last decade is alternately in

recession, then in stagnation. Many scientists suggest that the main reasons for this situation are disproportions in the economy, lack of a competitive environment, and capital flight from the country. Many scientists suggest that the main reasons for this situation are disproportions in the economy, lack of a competitive environment and the flight of capital from the country[1] [1; 2; 3; 4].. Analyzing the internal and external factors of restraining economic growth, we should highlight several of the most important of them. The paradox is that economic profitability in Russia is higher than in other countries. The outflow of capital to countries with low capital income, in the context of the investment deficit in the country, is an extremely unfavorable picture. So the reasons for the outflow are not economic, but some other factors and reasons. Therefore, first of all, it is necessary to pay attention to internal factors, in particular to creating processes of attractiveness of internal Russian investments. Today, the main factors affecting the rate of development of the country's economy are:

- economic sanctions;
- investment climate;
- lack of access to cheap foreign investment;
- expensive domestic investment resources;
- high share of income from the export of raw materials (hydrocarbons, oil, gas, metal, wood, etc.);
- poor development of high-tech industries;
- high rate of the key rate of the central bank.

The impact of economic sanctions on the Russian economy according to different estimation is about 1 percent of the country's[2] GDP [5]. After the adaptation of the economy, this influence will decline every year. The transition on the utilization of domestic potential and the search for new options for economic incentives can completely neutralize the negative effect of sanctions. The problem of creating an attractive investment environment has more large scale character. According to the statistical data over the past 25 years (from 1994 to 2017), the capital inflow to Russia was ahead of the outflow only twice*(table 1).

Table 1: Capital outflow from Russia by years, billion dollars

years	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
outflow	14,4	3,9	23,8	18,2	21,7	20,8	24,8	15	8,1	1,9	8,9	0,3
years	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
outflow	-43,7	-87,8	133,6	57,5	30,8	81,4	53,9	60,3	152,1	58,1	15,4	31,3

** Based on our own analysis and data collection (outflow +, inflow -)*

Capital inflows to Russia accounted for 2006-2007, when the growth of the Russian economy exceeded more than five percent, world energy prices were at the maximum level, which were good reasons for the attractiveness of speculative investments. However, the global crisis of 2008 made adjustments and the process of capital outflow began with new forces. According to the data of the Central Bank of the Russian Federation, the value of capital outflows for 2018 is $ 67 billion. According to official data for 25 years, the net outflow of capital from the country according to table 1 amounted to more than $ 718.7 billion (taking into account 2018).

[1] JRL NEWSWATCH: "Russia faces sharp outflow of private investment; More than $67bn shifted out of the country's economy last year" – Financial Times/ Henry Foy. URL: http://russialist.org/russia/capital-flight/ Johnson's Russia List (дата обращения: 25.01.2019)

[2] Anastasia Bashkatova Deputy Head of the Department of Economics, "Independent Newspaper" Sanctions continue to be beaten on GDP / URL: http://www.ng.ru/economics/2017-03-06/1_6942_vvp. html(address: 01/25/2019)

Such data only confirm the seriousness of the problems in this direction. The chronic character of the capital outflow process has several important critical reasons:

1. Political reasons;
2. The instability of economic policy;
3. Lack of guarantees of the inviolability of investments;
4. Security of capital storage in Russia;
5. The devaluation mechanism of replenishment of the budget system, which implies a phased depreciation of the Russian currency.

Another important problem is the unattractiveness of ruble (Rbl.) savings from large businesses. The main suppliers of ruble savings are the country's population, when the large business tries to keep free reserves in foreign currency. The constant demand for foreign currency from the business, together with the purchases of the central bank, which complies with the requirements of the budget rule of the Ministry of Finance, does not allow the Russian currency to strengthen against other currencies, and the ruble is much cheaper than at purchasing cost parity. This fact will be aggravated when the central bank acquires deferred volumes of foreign currency purchases within 36 months. The representative of the central bank stated about this[1]. The daily demand for the American dollar will be increased by 42-43 million dollars a day. This factor will have a strong impact on the ruble exchange rate in the third and fourth quarter of the current year. On the other hand, the real income of the population continues to fall, which is certainly reflected in the volume of savings. According to studies of the economists of HSE and RANEPA for the first quarter of 2019, the real disposable income of the population decreased by 2.9 percent. In total, from 2014 to 2019, the decrease of this indicator amounted to 13.4 percent[3]. A very dangerous and depressing moment is the factor of population emigration from the country. According to independent analytical studies, the difference between official and unofficial data of emigration indicators vary by five to six times. The flight of the population from the country is one of the indicators of dissatisfaction, disagreement with existing economic motives, and also the loss of labor power. If we analyze the qualitative composition of immigrants and emigrants, then it is evident that influx of low-skilled specialists into the country, with a simultaneous outflow of highly qualified specialists from the country[4]. Together, these factors are constraining instruments of the country's investment potential. The raw material model of the Russian economy, the predominance of extractive industries in the country's gross domestic product, and the orientation of exports to more developed countries are also constraining factors for economic growth. There is an increase of the influence of government intervention, support and management of economic processes in the country. Over the past decade, the state has expanded its influence both in the extraction sectors (for example, through Public Joint-Stock Company-“Rosneft”) and in the banking sector as well. Today, eight banks with state participation are located in the top ten banks in terms of assets. These banks manage more than 75% of all financial resources of the country’s banking system. Another problem of the Russian economy is the weak institutional support of long-term strategic development plans of the state, the lack of effective investment and innovation policies, supported both at the state and private levels. Poor financing for basic and applied research in the country leaves a negative imprint on scientific activity and is reflected in the country’s technological backwardness.

[3] Nordea and PSB commented on the strengthening of Central Bank interventions against the ruble / URL: http://www.profinance.ru/news/2019/01/25/bqmy-nordea-i-psb-prokom mentirovali -usilenie-interventsij-tsb-protiv-rublya .html (accessed date: 01/26/2019)

[3]Poor Russians: there will be even less money. URL: http: //www.gazeta.ru/business/2019/05/29/12381925. shtml (accessed date: 05/30/2019)

[4] Goodbye, Russia: how many Russians actually leave the country? URL: http://news3day.ru/obshhestvo/gudbaj-rossiya-skolko-rossiyan-na-samom-dele-uezzhayut-iz-strany.html

A small share of high-tech industries in the structure of production in the country is due to similar costs for the development of science and innovative developments. For comparison, the data should be analyzed in table 2.

Table 2: Expenditures on scientific research and development [4]

Region / Country	2017	2018
North America	27,72%	27,29
Asia	42,67%	43,53%
Europe	20,98%	20,64%
Russia	2,87%	2,87%

In terms of budget expenditures, Russia ranks tenth position, and in terms of relative spending on science as a percentage of gross domestic product, is ranked 35th position in the world. This indicator has not changed for the better for twenty years. The USA, China and Japan[5][9] hold the first place in the world ranking for this indicator. And most importantly, why the investment attractiveness of Russia is not improving? If foreign investors do not invest in Russia due to economic sanctions, the reason for the lack of domestic investment lies elsewhere. In particular, in his speech during a business breakfast at Sberbank, the Chairman of the Budget and Taxes Committee of the State Duma of Russia Andrei Makarov noted that at the beginning of 2019, financial resources in the amount of three state budgets were on the accounts of enterprises and the population. Moreover, these financial resources are not invested in the economy in conditions of acute shortage of funds[6] [10]. Makarov considers the fear of business about the untouchability of investments as the reason for such disinterest. Thus, the purpose of this analytical study is to develop recommendations to increase the effectiveness of the central bank's monetary policy instruments in determining the key interest rate, establishing effective market credit rates for enterprises in the real sector of the economy in order to achieve stable growth in the country's gross domestic product.

2. METHODS

The monetary regulation problem of the economy have been discussed by representatives of various economic schools for centuries. The founders of the study of the theory of money are Sh.L. Montesquieu [5], D. Hume, D. Ricardo and others. In particular, D. Hume in his work noted that "a sufficient amount of money is a condition for the successful development of trade and manufactories. The influx of gold and silver from America led to the growth of industry in all European countries. "Changes in commodity prices are determined by fluctuations in the amount of money in circulation. But this dependence is by no means proportional. Production growth in itself requires an increase in the amount of money in circulation [6]. The works of D. M. Keynes played a significant role in improving the theory of money and capital which are still practical manuals of state economic policies of many countries [7]. Later, the appearance of representatives of a new direction of monetary policy - monetarism, represented by M. Friedman, I. Fisher, P. Browning, C. Snyder, A. Schwartz, T. Mayer, K. Bruner, R. Selden, R. Bacon , W. Eltis, T. Sargent, D. Leider, and other economists have formed new approaches to the implementation of monetary regulation of the economies of world countries. D.M. Keynes in his famous work "The General Theory of Employment, Interest and Money" laid the foundation for modern macroeconomics, for the first time adequately appreciating the role of state regulation and interference in the country's economy [8]. The increase in government expenditures, along with the growth of employment and incomes of the population, according

[5] Expenditure on science as a percentage of GDP, Russia ranked 35th place in the world. URL: http: //philologist.live journal.com/9605867.html (accessed June 19, 2019)

[6] Makarov: there is nowhere to spit in the Tax Code - there are only benefits there! URL: http: //www.vestifinance.ru/videos/48761 (date of treatment 06/20/2019)

to the author should have led to the development of the economy. As history has shown, the mechanism proposed by Keynes has allowed many countries of the world to achieve great success in developing the economies of their own countries. However, excessive growth in government expenditures today has become a threat to the global economy. Opponents of Keynesian theory are monetarists, in the person of M. Friedman, argue that "state intervention in the economy blocks the action of spontaneous regulators that contribute to achieving equilibrium; it is focused on the short term, since any unforeseen external influences can cause deviations from the intended direction" [15, 16]. According to another representative of monetarism, K. Brunner, "the dynamics of the amount of money in circulation does not affect real economic indicators." He believed that "there is a natural level of production that cannot be arbitrarily increased by increasing money supply" [17]. The another model of demand for money was suggested by T. Sargent. In addition to applying a simple model of demand for money - in accordance with the quantitative theory of money, the Sargent – Wallace model should be constructed using the Keynesian function of demand for money, which assumes its dependence not only on real income, but also on the nominal interest rate [18]. Pragmatists, or left-wing monetarists, under the leadership of D. Leider, occupy an intermediate position between the orthodox economists of current monetarist and Keynesians. Based on the requirements of the "monetary constitution", they allow the utilization of government loans for budget deficit financing. To put into the practice the application of the recommendations of the monetarists did not produce tangible results and caused serious criticism from economists. So J.K. Galbraith, as a result of an analysis of the economic policy of the US administration, expressed serious doubts about its final effect, since, as he stated "both monetarists and theorists of the concept of "supply" suppose a classical market that does not exist now" [19]. The development of the world financial system, along with new developments by the monetary authorities of leading countries, has now led to the formulation of four main objectives of monetary policy:

1. supporting constantly high levels of employment;
2. stimulating sustainable economic growth in the country;
3. relatively stable level of domestic prices;
4. maintaining a stable exchange rate of the national currency and protecting its international reserve position.

In addition to the above mentioned objectives, in some countries, especially developed ones, long-term support of low interest rates is applied to facilitate the investment process. The main problem of the monetary policy of the country is related to the compatibility of such numerous goals. Can all these goals be achieved simultaneously and to an acceptable extent? As the monetary authorities should we support a high level of employment, real growth of population income and low level of inflation? The answer to these questions to a considerable degree depends on the development of the existing system of economic transformations, the reaction of the production sector, employment, wages and prices for changes in aggregate demand. The most favorable option may be a situation in which the supply of products is fully elastic at existing price levels. In such cases, an increase in demand will only lead to an increase in production until the economy reaches its maximum production capacity. Price inflation will appear only when demand becomes excessive in relation to productive potential [14]. In order to stimulate sustainable economic growth rate, aggregate demand must be increased. For this purpose, it is necessary to control the processes of real growth income of population and money supply in economy [15]. However, the problems of coordinating goals associated with production, employment and a stable price level arise when the supply of products does not respond in such a favorable way to increased demand, when prices rise before economic entities begin to produce [16]. Even in conditions of significant unemployment, labor costs can grow

faster than the volume of production, which will lead to higher production costs. And for this reason, enterprises can raise prices for their products, even despite the maintenance of significant volumes of excess capacity. In such circumstances, it becomes impossible to achieve all the goals of monetary policy solely by controlling aggregate demand. High aggregate demand, sufficient to ensure full employment and capacity utilization, can lead to inflation, while low demand can lead to increased unemployment and an excess of unused production capacity [17]. Over the past decade, developed countries have been applying new models of interaction between the state and business society. In particular, the policy of easing monetary regulation, stimulating investment through zero interest rates of central banks, negative deposit rates of banks, are forcing economic entities to look for alternative options for investing savings. Some modern economists believe that the European Central Bank (ECB) artificially maintains low rates in the money market at the expense of depositors [18].

3. ASSESSMENT OF EFFICIENCY OF THE UTILIZATION OF CREDIT RESOURCES

One of the external sources of financing investments is credit resources. The utilization of credit resources affects the indicators of business activity of the company, as well as the structure of capital of the enterprise. Credit resources accelerate the turnover of funds of the enterprise. At the same time, the positive difference between economic profitability and the interest rate on credit funds leads to an increase in the efficiency of the production process. The lower the interest rate on credit funds, the more effective their use by the enterprise. The practical application of the results of monetary measures influence on economic processes, is reflected at the level of production entities and shows the degree of their acceptability at this stage of development. To study the results of the effective utilization of credit resources by enterprises, we can use the following formula:

$$\mathbf{E = (P - IL) * D} \qquad (1)$$

Where: **E** – is the **effectiveness** of credit funds;
P – is the economical **profitability;**
IL- interest on **loan** funds;
D – is the ratio of borrowed and own sources of financing of the enterprise.

Indicators **P, I, D** can be considered as follows:

$$\mathbf{P = \frac{G}{K}} \qquad (2)$$

Where: **G** –is the profit from industrial investments;
K – is the sum of all cash investments used for additional profit-making.

$$IL = Pr + Pb \qquad (3)$$

Where: Pr – is the key rate of the central bank;
Pb- Bank interest margin.

$$D = \frac{C}{L} \qquad (4)$$

Where: C – is received loans;
L – is own funds.

In this calculation, the main role is played by the sizes of **P** and **I.** Since a positive result can be obtained only when **P** >**I**. In the structure of **P** is the main component of **Pr** and it is from this element that the attractiveness of credit resources to the production sector depends. From this point of view we can conclude that for the attracting and investing credit resources in the production sector, it is necessary to achieve the following equation:

$$P - Pb > Pr \qquad (5)$$

Thus, designating Pb as a concrete number ***n***, we obtain (where ***n > 0***)

$$P - n > Pr \qquad (6)$$

$$\frac{P}{n} - 1 > \frac{Pr}{n} \qquad (7)$$

$\frac{P}{n}$- means the ratio of economic efficiency to the level of bank margin;

$\frac{Pr}{n}$- is the ratio of the key rate to the level of bank margin.

Therefore, $\frac{P}{n}$ express - R, and $\frac{Pr}{n}$ - r. Then we get:

$$r < R-1 \qquad (8)$$

$$R - r > 1 \qquad (9)$$

Summing up, it should be noted that in the structure of both indicators: ***R*** and ***r*** there is one and the same element - ***n***, which represents the coefficient of bank interest. And ***n***, in its turn, may change depending on **Pr**. A decrease in **Pr** can lead to a decrease in ***n***. The smaller ***n***, the more efficient and effective the use of credit resources. Depending on the above approaches to calculating and making a factor analysis, we can create a formula for the factor dependence of the effectiveness of credit investments as follows:

$$E\mu = \alpha * \beta * \gamma \qquad (10)$$

Where: **α** – is the factor of economic efficiency of the production process
β – is the influence factor of the monetary policy of the interest settlement of the central bank;
γ- is the factor of banking interest.

Based on the above mentioned, it turns out that 2 out of 3 factors affecting the effectiveness of credit investments in the production process are nothing more than elements of the impact of monetary policy on the economic process. For the economic growth, GDP indicators and population welfare, factor **α** must exceed the sum of factors **β** and **γ**. Taking into consideration that **γ** is a banking margin, and it depends on **β**, it can be assumed that for the attractiveness of borrowed funds, the inequality **β + γ < α** is the most optimal variant that will allow economic entities to attract borrowed sources without particular risk to increase the production process. However, when considering the impact of monetary instruments on the production process in the industrial sector of the economy, it is necessary to highlight the features of their macro- and microeconomic impact. Conducting analysis in this context, we should divide them into direct and indirect instruments of influence.

The former directly affect the process by their targeted nature. This includes gratuitous funds: subventions, subsidies and other types of assistance. These instruments can charitable impact on the development of the production process of individual entities, while reducing the business activity of other economic agents. Excessive utilization of such instruments can lead to lower competition, weakening the investment attractiveness of individual sectors of the economy. These same instruments can trigger a surge in inflationary processes. Representatives of different schools of economic thought, neoclassicism [19], and neo-Keynesians [20] mentioned this at different times in their works. Therefore, the utilization of these instruments require a special approach in cases of targeted and exclusive use to support efficient and vital production, as well as a measure of stimulating investment activity in areas with a high degree of assessment of the commercial viability of production projects. From this point of view, we can assess the process of state support for entrepreneurship in the country. The experience of many years in the development of the given direction show that, over the past fifteen years, the main consumers of such support have become economic entities with a state share in the capital, or large holdings and corporations that conduct risky and aggressive forms of industrial and economic activity. In particular, the list of important enterprises that received state assistance after the 2008 crisis included: Joint Stock Company Gazprom, Joint Stock Company Rosneft, Joint Stock Company LUKoil, Joint Stock Company Russian Railways, Joint Stock Company AvtoVAZ, Joint Stock Company KamAZ, Joint Stock Company Norilsk Nickel ", Rusal JSC, as well as credit organizations of Sberbank of Russia OJSC, VTB JSC, Gazprombank JSC, Russian Agricultural Bank JSC, etc. Almost all of these companies are on the list of needing help after the 2014 currency crisis. But at the same time, no one can evaluate the effectiveness of these investments. As world experience shows, over time, these activities can lead to a sharp increase in the share of the public sector in all sectors of the economy. Such property expansion gradually gives a negative result due to the low efficiency of the public sector of the economy. Thus, from an economic point of view, it is advisable to use indirect instruments of the monetary sphere, which are state loans, compensation of interest rates on them, tax benefits for banks and investors who have invested in long-term production programs. The degree of utilization of various indirect instruments depends on the state of aggregate supply and demand in the economic system and on the nature of these instruments, characterizing their significant differences among themselves. The main tool for the indirect impact of the monetary mechanism on the production process should be a loan in the following forms: public credit directed to the sphere of industrial production; investment tax credit; bank loan - in the form of long-term loans; imported credit - in the form of investments of foreign states, companies, banks, private person. After the global financial crisis of 2008, the world powers adopted various methods of stimulating the economy in order to weaken the influence of crisis phenomena and stimulate economic development. One of the most effective measures applied by developed countries has been a sharp decrease in the key rate by central banks. This measure led to a decrease in bank rates and an increase in money supply in the markets. The key rates of developed countries before and after the crisis have been shown in table 3 [7].

Table following on the next page

[7] How much is the money in different countries? / Valentin Katasonov / [Electronic resource] URL: http://ruskline.ru/opp/2016/maj/27/pochyom_dengi_v_raznyh _stranah / (accessed January 15, 2019)

Table 3: Key rates of leading Western countries in the period 2007-2014 (average annual values, %)

Country	2007	2008	2009	2010	2011	2012	2013	2014
USA	4,25	0,13	0,13	0,13	0,13	0,13	0,13	0,13
Eurozone countries	4,00	2,50	1,00	1,00	1,00	0,75	0,25	0,05
Great Britain	5,50	2,00	0,50	0,50	0,50	0,50	0,50	0,50
Canada	4,25	1,50	0,25	1,00	1,00	1,25	1,25	1,25
Switzerland	3,25	1,00	0,75	0,75	0,25	0,25	0,25	0,25
Sweden	3,50	2,00	0,50	0,50	1,91	1,14	0,75	0,00
Denmark	4,00	3,50	1,00	0,75	0,75	0,00	0,00	0,00

However, at the same time, some countries began to increase the key rate of their country. The increase in the key rate was a necessary measure in the conditions of capital outflow from the country. Particularly those countries have been affected and oriented to external demand, and mainly exporting raw materials, to which Russia belongs. The main reason of the appreciation of monetary resources in the context of a decrease in gross domestic product is the increase in inflation at times of devaluation of domestic currencies. As can be seen from table 4, Russia is among such countries.

Table 4: Key rates for developing countries in 2007-2014

Country	2007	2008	2009	2010	2011	2012	2013	2014
Russia	**10**	**13**	**9**	**8**	**8,25**	**8,25**	**8**	**17**
Turkey	11	13	8	7,5	8	7,5	5	16
Brazil	11,5	13,75	9,25	9,5	12	8	7	11
China	6	7,5	5,5	5,5	6,5	6	6	6
India	7,5	9	5	5,5	8	8	7,5	8

***** *Data on the results of the author's own analysis*

An increase in the key rate and consequently, an increase in rates on bank loans leads to a decrease in the loan portfolio of manufacturing companies. Which is ultimately reflects the development of the economy, in terms of gross domestic product, average wages, per capita incomes. This is indicated by the statistical data on the level of economic development of world countries[8]

Table 5: GDP growth in countries of the world in% per year

Country	2008	2009
Russia	5,2.	-7,8
Turkey	0,7	-4,8
Brazil	5,2.	-0,3
China	9,6	9,2
India	3,9	8,5

As can be seen from table 5, in three out of five countries, with the exception of China and India, after an increase in the key rate of the country's central bank, the GDP growth rate declined sharply and even had a negative value. This is once more evidence that the monetary policy of the country's central bank in determining the key rate value plays a significant role in the development of the economy. In spite of the fact that more than ten years have passed since the global financial crisis, developed countries do not hasten to increase the value of money in their money markets.

[8] GDP growth (annual %). World Bank national accounts data, and OECD National Accounts data files. URL: http://data.worldbank. org/indicator/NY.GDP. MKTP.KD.ZG (date of treatment: 27.01.2019)

The main reason for this approach remains low inflation and investment activity of the business. According to the latest data, as of mid-2019, the key rates of the central banks of the United States and the Eurozone remain at a fairly low level, amounting to 2.5 and 0 percent, respectively. Which situation had been arisen on the Russian financial market today, is there really an investment famine, and what is the reason for the low level of economic growth? We have already noted above that rather considerable financial resources have accumulated in the economy in the form of deposit funds in the accounts of the banking system. With the structure of deposits should be consulted on the tables 6 and 8.

Table 6: Deposits of natural persons at the end of the year, billion rubles

years	2010	2011	2012	2013	2014	2015	2016	2017	2018
total	9805,3	11853,5	14222,6	16938,4	18683,1	23259,5	24303,4	26092,6	28577,8
National currency	7909,5	9690,6	11743,1	13985,2	13699,1	16347,1	18472	20640,8	22348,4
Foreign currency	1895,8	2162,8	2479,4	2953,1	4984	6912,4	5831,4	5451,8	6229,4

As can be seen from table 6 over 9 years, deposits of the population increased almost 3 times, while deposits in foreign currency grew 3.3 times. Over the same period, the volume of lending to natural persons in the country increased 3.4 times (Table 7). Only in 2018, the credit load of citizens before the banking system increased by 22.4%, to 14.9 trillion rubles. This is the maximum growth since the pre-crisis 2013. The level of citizens' debt burden (that is, the ratio of monthly loan payments to the monthly income of the borrower) approached the historical peak of 2014, stated by the Central Bank in March 2019. The reason for the decline in real incomes of the population, according to A.G. Siluanova, is also a reduction in the share of the shadow sector of the economy. "We are reducing the so-called shadow sector - an additional calculation of the shadow sector. This influenced to a decrease in the indicator of real incomes of the population," the first Deputy Prime Minister explained[9]. An increase in lending to the population should have led to an increase in aggregate demand, but this does not happen. The main reason for this, we believe the decline in real incomes. According to our estimates, over the past five years, real incomes have declined by more than thirteen percent. And the process of increasing loans is the result of a lack of money, the restructuring of previous loans. This all leads to a reduction in consumer demand while increasing the income of the banking sector.

Table 7: The volume of loans granted to natural persons, billion rubles

years	2010	2011	2012	2013	2014	2015	2016	2017	2018
total	3649,1	5438,7	7226,4	8778,2	8629,7	5861,4	7210,3	9233,7	12456
National currency	3506,7	5289,2	7075,4	8612,5	8461,4	5765,8	7100,6	9132,5	12366,7
Foreign currency	142,4	149,5	151,1	165,6	168,3	95,6	109,7	101,2	89,4

The opposite picture is observed with lending to legal entities. Over the study period, deposits of enterprises in banks increased by 3.3 times. But at the same time, the volume of loans issued to enterprises grew only 2.2 times. And if we conduct an in-depth analysis of the structure of deposits, we become witnesses to an amazing situation: the main owners of deposit accounts in banks are non-production sector companies, enterprises that provide services to the state, have access to budget funds and large oil companies (for example, PJSC Surgutneftgas).

[9]Siluanov called the factors hindering the growth of real incomes of Russians. URL: http: //professionali.ru/ Soobschestva / biznes-klub / siluanov-nazval-meshajuschie-rostu-realnyh / (accessed June 22, 2019)

Table 8: Deposits of legal entities at the end of the year, billion rubles

Years	2010	2011	2012	2013	2014	2015	2016	2017	2018
total	5292,3	7382,6	7493,1	7897,7	11152,9	13151,4	11564	13665	17672,7
National currency	3726,5	5445	5596,9	5598,9	6566,8	6857,7	6966,7	8936,1	12106,8
Foreign currency	1565,8	1937,6	1896,2	2298,8	4586,1	6293,7	4597,2	4728,9	5565,9

This once again proves that in order to stimulate economic growth, it is necessary to increase loans, not of the population, but of enterprises in the manufacturing sector. The growth of production in this case will become a catalyst for the growth of real incomes of the population and will lead to an increase in aggregate demand.

Table 9: The volume of loans granted to legal entities, billion rubles

Years	2010	2011	2012	2013	2014	2015	2016	2017	2018
total	20662,2	28412,3	30255	36224,6	38529,9	34236,3	35579,6	38453,5	44991
National currency	17966,5	25436,2	27531,1	31582,8	33241,4	29995,7	32395,6	34818,8	40000,6
Foreign currency	2695,8	2976	2723,9	4641,7	5288,5	4240,6	3184,1	3634,7	4990,5

But for now, banks prefer to hold excess reserves, rather than lending to the business, controlling their risks. The reason for this is the uncertainty of repayment of loans issued, the fear of default of borrowers in a depression. John Maynard Keynes proposed another reason — his famous “liquidity trap”. He confirmed that there is a certain long-term interest rate that is not much lower than the previous one, which the public considers “normal”. No one will hold securities with a lower yield due to fear of loss of capital when interest rates return to normal levels [21]. Below this normal rate, the public would increase their stocks of cash balances indefinitely, rather than lend at a lower rate. Obviously, such a situation can be considered a “trap”, but why is it considered a “liquidity trap”? Just because these two words represent a trap caused by liquidity. Does it follow that the trap is caused by too high liquidity? Paul Krugman considers that the liquidity trap does not follow from the activities of central banks, in particular, the conditions created by them for the emergence of an excessively large amount of money [22]. At present, the central banks of developed countries have increased their money supply to the maximum volume, the further growth of which is no longer able to effectively influence economic growth. However, many economists believe that modern money demand is flexible enough and able to absorb any additional amounts of money. However, today the trap is based on completely different reasons. Central banks continue to inject money into the economy, including through tax cuts. In the past, when the economy went into a phase of decline, people and businesses preferred to hold money. However, in the post-crisis years (2011–2018) the situation differs from the usual one. According to traditional theory, asset prices fall during a depression. However, after the crisis, treasury bond prices rose even in the face of falling interest rates. Another circumstance worked: investors prefer more reliable liquid assets, even taking into account the loss of profitability. Krugman called this option “the eternal trap of liquidity.” Further, Keynes's ideas about the “liquidity trap” were developed by Hyman Minsky. He used the liquidity trap argument in the usual manner, but gave it a clearer form. If some post Keynesians tried to give the term a certain mystery and uncertainty, then Minsky practically brought it close to formalization, but he had not yet translated it into a mathematical formula [23]. Some representatives of the Austrian economic school reject not only the theory of the “liquidity trap”, but Keynes’s position on liquid preferences. They confirm that reduced investments during periods of low interest rates are not the result of liquidity preferences, but a consequence of previous misinvestments and

temporary preferences [24]. So, in modern conditions, monetary and fiscal authorities are losing the opportunity to use the usual methods and instruments to stimulate economic growth. The reason is that the accumulated instruments were never sufficiently gift edged and reliable, and the triggering of the usual mechanism of macroeconomic stabilization in the past was determined by a combination of circumstances. The policy of expensive money, the contraction of the money supply leads to investment famine and a reduction in the manufacturing sector.
Along with the fight against inflation, the central bank should develop a balanced money supply policy, using the world experience of the leading countries of the world.

4. RESULTS AND DISCUSSIONS

Thus, based on the conducted analysis of theoretical developments of such scientific economists as D. Hume, D. Ricardo, D.M. Keynes, M. Friedman and others we note that the main constraints of the growth of the Russian economy have internal roots, and these include inefficient monetary policy, expensive loans, lack of stimulating factors for investment development and demand, insufficient sources of long-term investment resources, inconsistency methods for achieving the goals of strategic programs of today's realities, continuous multi-year outflow of capital from the country. The only way out of this situation may be to develop more effective monetary policy aimed at stimulating domestic demand through the supply of targeted investment resources for special programs for the development of individual sectors of the economy. It is necessary to accumulate sources of long-term investment resources in order to further invest them in investment projects of enterprises in the real sector of the economy. But unfortunately, the economic reforms taking place in Russia, the increase in the tax burden, the increase in energy prices on the domestic market, the indexation of tariffs, in the face of declining real incomes of the population, so far only hinder the growth of the economy. And there is no reason to hope for a change in existing economic policies in the next five years. Considering the problems listed above and taking into account the international experience with our main recommendations in the field of improving the efficiency of credit resources stand for:

1. A gradual, phased decrease in the key rate of the Central Bank of Russia to inflation plus one percent. Having analyzed the dynamics of inflation indicators over the past five years, and forecasts, the expected effective rate of the central bank in the next two years should be in the range of 5.2-5.5 percent. In this case, the final cost of credit resources for a business may drop to 7.5-8 percent per annum. What will undoubtedly become available for many manufacturing enterprises. The availability of cheap borrowed funds can become an element of development mainly of small and medium enterprises. Entrepreneurs whose economic profitability has declined in recent years can develop their business again due to the positive effect of the effect of financial leverage.
2. Development and implementation of project financing through bank lending to investment programs of manufacturing enterprises. The mechanism of such lending involves an initial analysis and assessment of the attractiveness and effectiveness of the investment project of a manufacturing enterprise by specialists of a commercial bank, followed by lending at preferential interest rates. In this case, the difference between the market and preferential interest should be compensated by the Ministry of Economic Development at the expense of budget allocations. Thus, before issuing a loan, the bank will analyze and give a real assessment of the investment project [25]. Such a deal structure will be effective for all parties. A prerequisite for such a mechanism is the rapid development of contract lending to companies by banks. Where the bank fully checks and controls the implementation of contractual obligations of enterprises within the framework of loans issued.
3. Since 2012, the Russian economy has been in condition of stagnation. This is mainly monopolistic stagnation. The main sufferer are the enterprises of the manufacturing sector.

In recent years, we have observed that GDP growth near zero, a decline in per capita GDP, a decrease in real incomes, with a simultaneous increase in inflation and rising prices for essential goods. All of these are signs of stagflation. The main factor in the manifestation of stagflation in Russia is a change in the conditions of economic growth, which was accompanied in 2001-2008, focused on high energy prices. After the global crisis of 2008, investment in fixed assets fell sharply. Therefore, an important area should be the financing of programs for updating the fixed capital of production enterprises. Along with the development of concessional lending programs for such programs, it is also necessary to apply preferential taxation to such production companies [26].

4. A promising direction of enhancing production activities may be the formation of a cluster approach to regional development. From the experience of developed countries it is clear that the main requirements for implementing the cluster approach to the development of the region are: the strategic goal of cluster regional policy; determining a strategic location that meets the requirements for the development of this cluster area; favorable taxation system; the availability of labor resources; scientific and investment potential. In our opinion, the southern regions of Russia can be defined as an agricultural (food) cluster, the central part of the country as an engineering cluster, the eastern part as a fisheries cluster, etc. Based on such a policy, a program of investment support should be developed at the governmental level to stimulate a cluster approach to regional development. The roles of power structures in the formation of public-private partnerships in this process should be determined. The Central Bank, as a mega-regulator of the monetary market, should stimulate commercial banks to participate in financing these regional programs on behalf of the Ministry of Economic Development. Each direction of the clusters should have its own strategy with the definition of the horizon for achieving the goals and the amount of funding. In order to study the existing experience, we can turn to the history of Soviet Russia, since in the Soviet Union this direction was strongly developed.

5. CONCLUSION

Thus, all the above mentioned postulates can serve as the main principles for the formation of an effective monetary policy, supplying the country's economy with investment resources necessary for the formation of a new economic policy and economic development at a more powerful pace. The main instrument of the new approach in the field of monetary regulation should be long-term borrowed capital for a period of ten to fifteen years, issued for the implementation of investment programs of industrial enterprises at a rate of no more than a key rate plus one percent. The tasks set in the programs of the country's development strategy cannot be accomplished without a thorough review of the existing incentive system for the production sector. One of the main tasks set for the country – the entry of the Russian Federation into the five of the strongest economically developed countries, can be solved precisely thanks to a reasonable state policy in the field of monetary regulation, stimulation and activation of the process of supporting enterprises in the manufacturing sector.

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MANAGERIAL DISRUPTIVE STRATEGIES IN THE GLOBAL MUSIC INDUSTRY: BUILDING OF THE COMPETITIVE ADVANTAGES OF SPOTIFY AND PANDORA DIGITAL STREAMING CORPORATIONS

Josko Lozic
University North, Varaždin, Croatia
josko.lozic@unin.hr

ABSTRACT
Spotify and Pandora are corporations competing within the global music industry as disruptive entities in the existing industrial structure. Both are streaming corporations that operate in the form of a platform economy. The aim of this paper is to point out the opposite models of development of two corporations whose key activity is related to streaming music production. The fundamental difference between business models relates to the collection of ad revenue. Corporations compete within technologically advanced industries and take advantage of economies of scale in the global music market. The key competitive advantage of corporations over "classic" music corporations is based on a user community that consumes music on mobile devices and does not purchase music to store it permanently. Streaming music platforms are a key factor in revenue recovery within the music industry. Generation Z, who are users of streaming music platform services, contributed most to this.
Keywords: *disruptive strategy, music industry, streaming, platform economy*

1. INTRODUCION

The movie, music, book, and television industries together account for about one - twentieth of the world's income. And not only do the cultural industries generate large amounts of revenue and profit, they also account for a lot of jobs—an estimated 5 percent of workers around the world and 5 million in the United States alone (Waldfogel 2018: 3). The digitalisation of production processes has particularly strongly affected the media industry. Within the media industry, publishing, newspapers, magazines and books were the first to be hit, and the editorial concept completely changed. The book industry, as well as the newspaper and magazine industry, was under strong editorial control. With the advent of digital record carriers, anyone could publish digitized content without the editor's entry barrier, or without all other gatekeepers. Print media fell without any hope of a return to high print times. The music industry went through similar difficulties, but with the same final outcome. Digitization and the Internet have provided unlimited possibilities for unauthorized copying and distribution of music content. The advent of Napster in 1999 opened up unlimited possibilities for pirating music. The losses of music publishers were twofold: a) losses were accumulated on the one hand because the content could be distributed free of charge and unauthorized; b) on the other hand, digital technology allowed anyone to publish content on the Internet, and large publishing corporations began to lose new talented artists. Napster is a powerful example of how at the end of the 1990s systems for peer to peer sharing of MP3 digital files began to flood the market. While Napster was legally shut down in 2001, several other services (e.g. Limewire) attempted to establish themselves in this free market space (Prey 2018). Napster was banned from work in 2002 until the release of iTunes in 2003. The music sales model has changed, but overall sales revenue has not started to recover. The golden age of vinyl revenue will never return, but its rapid decline has stopped. Just a few years after that, Generation Z is changing its music usage habits again and the first streaming services to emerge. Pandora was among the first, and shortly after, Spotify appeared. Unlike peer- to- peer file "sharing" via Napster, Spotify streaming is not stealing.

YouTube, Pandora, and Spotify pay artists and record companies for the right to stream music. But many artists believe that the payments are too small to support continued music making (Waldfogel 2018: 7).

2. THEORETICAL FUNDATION

This digitalization of music has evolved through a series of transformative phases; from vinyl to CDs, from CDs to mp3s and from mp3s to streaming services. Each such phase has involved a rearranging of the socio-technical infrastructure of music, affording new modes of production and consumption, similar to previous shifts in music technology (Fuentes et.al. 2019). Until the 2000s, the recorded music industry had been mostly marked by technological breakthroughs that boosted physical sales that grew steadily from 1984 on, and reached a peak in 2006. In the 1980s, cassettes were replacing vinyl albums (or LPs), and by the 1990s, CDs were replacing cassettes. Then the sales of physical goods started declining (Simon 2019). While it was by no means the first innovation in sound recording devices or formats, the CD represents one of the first digital disruptions to emerge in the music industry. It laid the foundation for a series of further digital developments, in fact, by the end of the 1990s (Ryan 2019). Before the internet and streaming took over, large record companies had a balanced mutual dependency with commercial radio and retailers and a mostly negative asymmetric dependency vis-à-vis national television and non-commercial radio (Kask, Oberg 2019). The arrival of the ICTs and the internet brought a profound disruption of its legacy business model and production processes. The digital revolution has rapidly had a severe effect in the recorded music industry, where several changes happened over a brief period (Hadida, Paris 2014). Current and ongoing period of digital disruption may ultimately prove to be as significant as the original industrial revolution (Kenney et.al. 2015). While occurring across a range of media (e.g. newspapers, cinema, books), digital disruption certainly had a significant impact in music, with this disruption upending 'many basic assumptions of how recording industries function' (Barnett, Harvey 2015). By the time of the 21st century, digital transformations affecting the music industry were profound, with a new stream of entrants to the market, such as Napster, iTunes, Pandora, Spotify, MySpace and Youtube. Napster is a powerful example of how at the end of the 1990s systems for peer to peer sharing of MP3 digital files began to flood the market (Ryan 2019). The development of music technology has led to increased mobility and accessibility and has progressively afforded consumers increased control over music content. Many changes associated with music digitalization thus predate digitalization (Dholakia et al., 2015). The development of streaming services such as Spotify, Deezer, and Apple Music has also meant that consumers can access large catalogues of music on the go (Sinclair, Tinson 2017). The playlist has become the central form of music curation on streaming platforms. Logging on to Spotify […], you are immediately confronted with a wall of playlists, personalized by your listening history, the time of day and other specific cues (Pray 2019). In the 21st century, the primary means of music consumption involves downloading or streaming music through the Internet on personal computers, gaming systems, and mobile devices (Arditi 2017). Streaming services differ from these traditional products. A song streamed through a service is not durable, as access ceases once the subscription has expired (Hiller, Walter 2017). The recording industry has developed partnership with streaming music services from Apple Music to Spotify, which monetize music consumption by eliminating the collector's mentality (Arditi 2017). At the beginning of this millennia, the music industry was characterized by plummeting music sales brought on by Internet piracy, but also by a dawning hope for the new medium to generate revenues. On this topic, IFPI reports a 23% decline in global sales between 2000 and 2005, and in 2007, it estimated that for each music track sold, 20 was illegally downloaded (Skog et.al. 2018). Streaming revenue has been reported since 2006. They grew year by year and for the first time in 2017 were higher than psychical income.

Streaming became the main engine of the growth of the revenues of the music industry providing nearly half of the revenues of the labels (Mulligan 2019). The sudden rise in revenue from streaming caused a dramatic change within the global music industry. The revenue growth most reflected on segment recorded music. Further development of convergence within the music industry will affect the growth of live music revenue, as in the video music segment. The growth of revenue was mostly attributed to the consumer habits of Generation Z (Lozić 2019a). While piracy ravaged the music industry and Apple dominated the digital music market, the Spotify company was started in May 2006 (Skog et.al. 2018). Spotify was founded by Swedish entrepreneurs who – in contrast to previous streaming service attempts – were able to raise enough capital for operations, marketing, and prepayments. Despite the fact that Spotify was founded as a new entry by non-record company people, its successful start was made possible by trading ownership in Spotify for access to songs from all majors (Kask, Oberg 2019). Spotify and others have replaced the record stores (Bustinza et.al 2013). Pelly (2017) quotes a music-industry insider who explains that 'lean-back' listening is an "ever more popular Spotify-induced phenomenon". Spotify was first developed for desktop computers, but latterly mobile devices became the centrepiece for the streaming experience (Kask, Oberg 2019). Pandora was founded in Oakland, California, in 2000. Pandora users seed an Internet "station" with the name of a song or artist. The Pandora serves up music that resembles, and would likely interest fans of, the seed song or artist. Users provide feedback on songs by clicking the "thumbs up" or "thumbs down" button (Waldfogel 2018: 51). Pandora provides an internet radio service, using revealed preferences of the consumer and playing music to suit tastes (Hiller, Walter 2017). These types of services remain popular in the digital world. In North America, music-cantered digital satellite radio SiriusXM and personalized radio Pandora together reported over 90 million subscribers in 2013 (Perez 2020).

3. HYPOTHESIS

Both corporations use a disruptive development model in the already existing music industry. The old music industry was based on the sale of physical sound carriers. Music streaming services use new management strategies, and the habits of new generations of music listeners have changed completely. In this context, we set out two hypotheses that we will analyse in a research based on Spotify and Pandora corporations:

- H1: Music streaming platforms make high profits because they do not have the cost of distributing content as a corporation in the old media industry.
- H2: The number of user od streaming platforms content is steadily increasing as they are given the opportunity to listen music while they are in movement.

By the analysing results of research, we want to open up a new perspective on the financial results of corporations in the music streaming industry.

4. CORPORATE STRATEGY AND ANALYSIS OF STREAMING CORPORATIONS

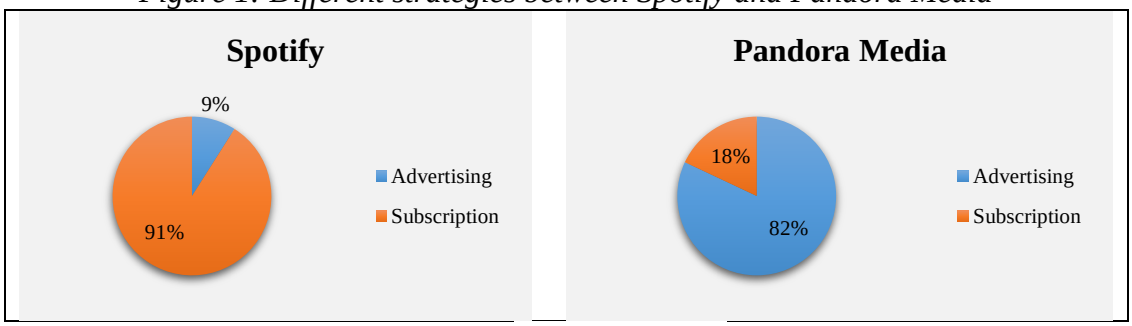
The fundamental differences of corporate strategies between Spotify and Pandora are shown in Table 1 and Figure 1. The fundamental difference is referenced in the way revenue is generated. Spotify makes the most of its revenue from subscriptions and Pandora Media from advertising. Spotify's main difference was the ability to play any music on-demand, where Pandora only offered radio-style playlists with limited options to skip songs (Griffith 2018a). A new study by internet radio service Pandora shows that too many ads can motivate users to pay for an ad-free version, but push many more to listen less or abandon the service. The study found that the additional subscription revenue does not make up for the lost ad revenue from those who listen less or leave the service (Griffith 2018b).

Table 1: Management strategy differentiation between Spotify and Pandora

	Spotify	*Pandora*
Music list	Contract with record label	Customer list
Distribution	Premium option	Marketing revenue
Market	Global, mostly Europe	Global, mostly USA
Number of customers	Still grow phase	Mature phase
Mod of use	Preferring playing list	Preferring radio mod

Source: own illustration

Figure 1: Different strategies between Spotify and Pandora Media



Source: Nagarkar, 2015.

Spotify is in the growth phase and is steadily increasing its number of subscribers. Pandora Media has reached a mature stage and the number of subscribers has started to decline. Spotify is focused on the playlist and subscribers themselves create playlists to listen to. Pandora Media is a radio that uses big data processing to define the music that subscribers want to listen to in the indexing process. Spotify listeners are younger. Younger and more tech-savvy. Whatever the reasons may be: The Spotify user experience or its' youthful branding, there's no disputing it. According to the latest numbers, "nearly two-thirds of US Spotify users were between the ages of 13 and 29, with 18-24 year olds accounting for the largest share," while Pandora users skewed a bit older, with the largest group of users falling somewhere in the 35-44-year-old range (Emarketer.com). There is a subtle difference in the way Spotify and Pandora operate. Spotify is an online music streaming service whereas Pandora is an online radio service. Due to "licensing constrains", Pandora is available only to listeners in the U.S., Australia and New Zealand. In contrasts, Spotify has a presence in 58 countries (Nagarkar 2015). Tan (2017) notes that there are several other competitors within the music streaming industry. Deezer, which was founded in 2007, but has not evolved as Spotify by number of users. Apple Music, founded in 2015, and already had 30 million subscriptions in 2017. Apple Music is a relative newcomer known for its high-profile exclusive releases, large library, human-touch radio, and full integration into Apple's popular iOS ecosystem. This meaty concoction helped Apple reach impressive growth in listeners, with 60 million premium subscribers vaulting it atop Spotify in the U.S. (Levinson, J.; Kennemeer 2020). Streaming platforms operate in a platform economy model (Lozić 2019b; Parker et.al. 2016).

4.1. Spotify

Spotify categorizes with digital service platforms without a proprietary device that, as its core service, mediates service exchange between commercial content producers and end-customers, e.g. Netflix or Hulu (Skog et.al. 2018). In contrast to mobile product platforms (e.g. Android or iOS), the Spotify platform solely occupies the service layer and does not rely on a coupled proprietary device (Eaton et. al. 2015). Table 2 provides an overview of the corporation's financial results over the past five years. In the analysed period, total revenue increased by almost five times or 484.70%.

Direct costs increased by 428.76%, which enabled the growth of gross profit by 777.59%. Cost-based costs include all costs associated with the acquisition and payment of royalties. Costs are paid based on the number of broadcasts, as well as the average number of published music content. Controversy persists over how copyright payments are paid and who owns the copyright if a music number is broadcast on a streaming service. Gross profit margin increased from 16.04% in 2014 to 25.73% in 2018.

Table 2: Spotify revenues from 2014 to 2018, by segment (in millions euros)

	2014	**2015**	**2016**	**2017**	**2018**
Revenue	1.085	1.940	2.952	4.090	5.259
Cost of revenue	911	1.714	2.551	3.241	3.906
Gross profit	**174**	**226**	**401**	**849**	**1.353**
Research and development	114	136	207	396	493
Sales and marketing	184	219	368	567	620
General and administrative	67	106	175	264	283
Cost	365	461	750	1.227	1.396
Operative loss	**-191**	**-235**	**-349**	**-378**	**-43**

Source: own illustration

Other operating expenses in the analysis include general operating expenses and finally, as a sum of all costs, total operating expenses. General operating costs include the costs of operating and maintaining the music platform, ie all those costs that maintain the system and are not directly related to the core business. The bulk of these costs include the salaries of the management and employees of the corporation. Over the analysed period, overheads increased by 422.30%, which was less than the increase in direct costs and less than the increase in total revenues. Overhead expenses accounted for 6.18% of total revenue in 2014, falling to 5.38% of total revenue in the last analysed period. One of the factors behind a successful corporation's business is reflected in the rise in overall costs. Total expenses, except for direct operating expenses, increased by 382.70% in the analysed period, which is far below the total increase of revenues by 484.70%. Total operating expenses were 33.64% of total revenue in the first analysed period, to fall to a higher 26.64% in 2018. The coefficients for determining the four analysed items from the account and Spotify's profit are shown in Table 2. All four coefficients are greater than 95% of interpretation, and the coefficient of total revenue has the highest coefficient of interpretation and is 97.36%. Table 3 shows the exponential trend equations for the four items analysed. The survey results show an average increase in the total corporate income over the analysed period of 47.74%. The average increase in revenue over the last five years is five percentage points higher than the increase in direct operating expenses. Direct operating expenses increased by 42.60% on average and are the largest expense in total expenses and are the most important indicator of the movement of the total business of the corporation. The average increase in general operating expenses was 46.14%, which is one percentage point less than the average increase in total revenues, but the general expense is a relatively small item relative to other types of expenses, so it does not significantly affect the overall operating result.

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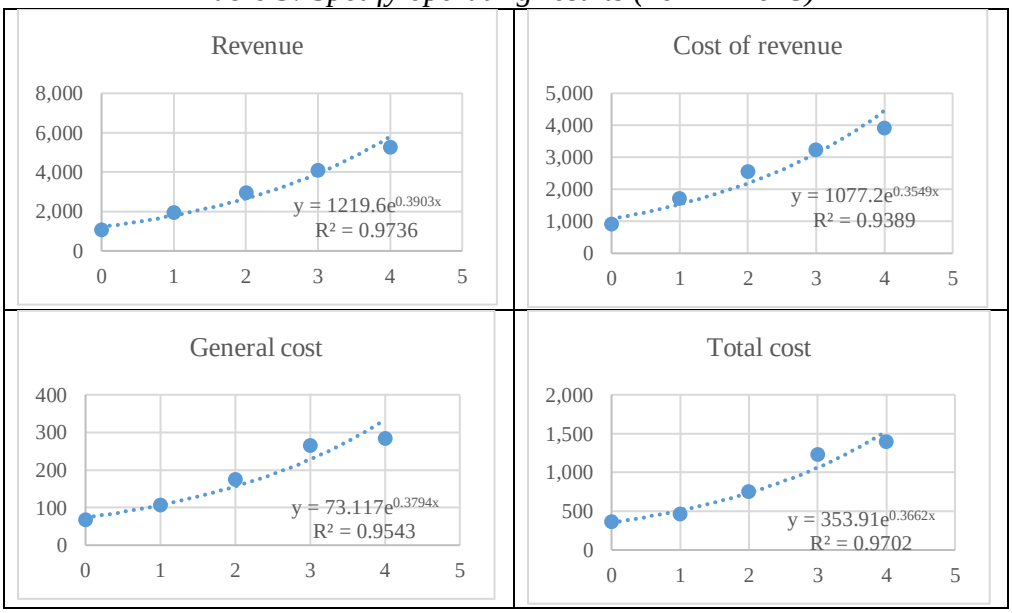
Table 3: Spotify operating results (2014 – 2018)



Source: own illustration

Table 4: Exponential trend equation (Spotify 2014 – 2018)

Revenue	Cost of revenue	General cost	Total cost
$Y = 1219*1{,}4774^x$	$Y=1077{,}2*1{,}4260^x$	$Y=73{,}117*1{,}4614^x$	$Y=353{,}91*1{,}4422^x$

Source: own illustration

Spotify's profitability was questioned throughout the business. Analysts warned of this yet in 2011. Losses were an eye-watering 147% of revenue in 2009. In 2010 they were 42% of (fast-growing) revenue--still very scary, but a narrowing gap nonetheless (Gobry 2011). Some experts are sceptical about its potential profitability, since, after ten years of operation, Spotify's future is still uncertain. The new company does not have the bargaining power of Apple or Amazon to change the contractual conditions for royalties. Spotify is facing an oligopoly with Universal Music Group, Sony Music Entertainment, Warner Music Group, and Merlin hold rights for music accounting for 87 per cent of Spotify's streams in 2017 (Roof, Constine 2018). The high fixed costs come from the very high fees paid to record labels. Owens makes a comparison between Neflix and Spotify, pointing out that when Netflix licenses a show like Friends, it pays a fixed licensing fee, and so that means every time a new customer streams that show there's no additional cost to Netflix. Spotify, on the other hand, has to pay a royalty for every stream, so every time it adds a new customer, it's also increasing its costs (Owens 2018). Netflix built its own production and each new broadcast has a marginal zero cost, while Spotify pays for each new artist and additionally by the number of performances. Both corporations operate in zero marginal cost models (Rifkin 2015; Lozić 2019c). Kaufman emphasizes that in 2018 U.S. Copyright Royalty Board ruled that songwriters must be paid more for their songs. Now, streaming companies must pay 15 percent to music publishers, the largest portion in history (and a 43 percent increase). For the big players in the streaming industry — the likes of Spotify and Apple Music — this could look like bad news: Streaming companies already don't make money (Kaufman 2018).

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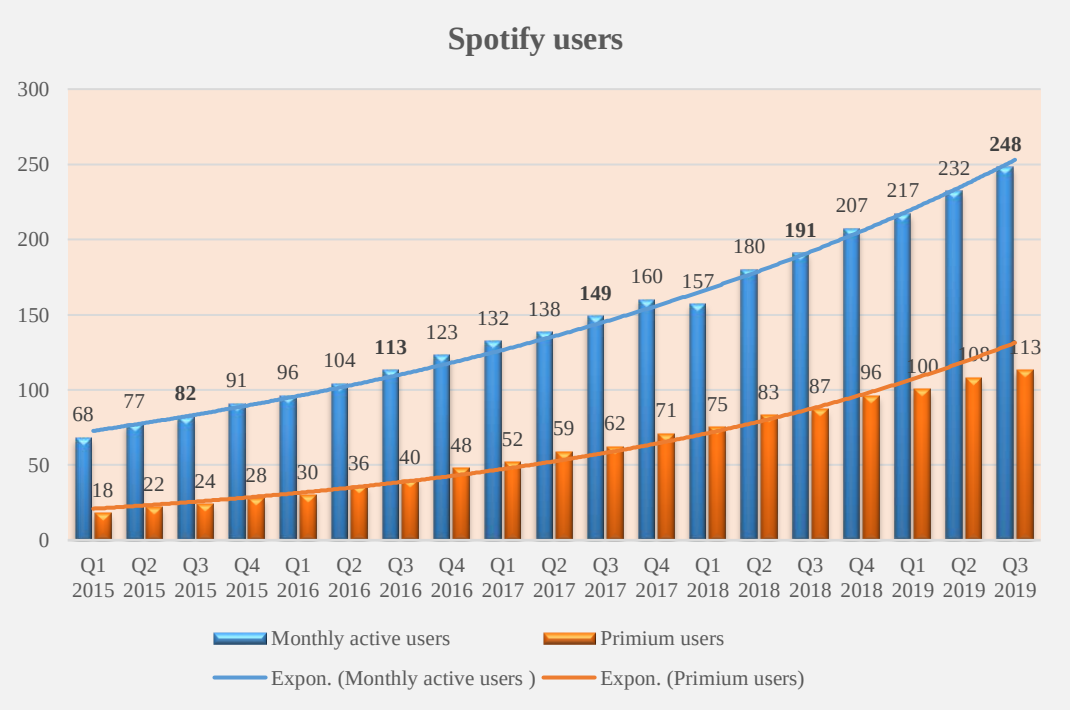
Figure 2: Number of Spotify monthly active users (MAUs) worldwide (by quarters; in millions)



Source: own illustration

The financial result is directly related to the number of users of the service. Spotify derives most of its revenue from a subscription. In relative terms, subscriptions account for about 90% of revenue, while advertising revenue is only about 10%. In the last quarter analysed, Spotify had 248 million users who used the app. As a monthly user, every visit is recorded by a non-registered visitor who views or listens to some content on the app in a time that is recorded in milliseconds. The users who pay for the subscription and have personal accounts on the app are called premium users. The number of such users increased over the analysed five-year period from 28 million to 113 million. Data on the increase in the number of users are shown on Figure 2. Analysis of Spotify's financial results cannot confirm the first hypothesis of very high profits in a platform economy referencing streaming services. Total revenue in the analysed period grew at an average rate of 47.77%, but also cost revenue grew at a rate of 42.60%. In addition, total costs grew at an average rate of 44.22%. In the last period, Spotify has significantly improved its operating loss result, but is still at a loss of € 43m. The number of users is increasing, which is also reflected in an increase in revenue and a decrease in operating loss. Here we can partially confirm the second hypothesis.

4.2. Pandora Media

The financial performance of Pandora Media's business is shown in Table 5. For research and analysis purposes, only data referring to the revenue and production costs of the music program were taken. Revenue is classified into three basic categories: advertising revenue, subscription revenue, and ticket sales and other activities related to that business activity. Pandora Media's business strategy is based on advertising revenue, accounting for the largest share of the corporation's total revenue. In the five-year period analysed, revenues grew from $ 489.34 million in 2013 to $ 1.07 billion in 2017, a 220% increase. Advertising revenue in the first analysed period was 81.52% while in the last analysed period it was 73.28%. The decline in the largest revenue share in total revenue is already indicative of the business problems that will occur in the Pandora Media business.

Table 5: Pandora Media (Consolidated statements of operation in thousand $)

	2013.	**2014.**	**2015.**	**2016.**	**2017**
Revenue advertising	489.340	732.338	933.305	1.072.490	1.074.927
Revenue subscription	110.893	188.464	220.571	225.786	315.853
Ticketing services	0	0	10.167	86.550	76.032
Total revenue	**600.233**	**920.802**	**1.164.043**	**1.384.826**	**1.466.812**
Cost revenue	357.083	508.004	697.341	894.922	967.067
Gross profit	**243.150**	**412.798**	**466.702**	**489.904**	**499.745**
Product development	31.294	53.153	84.581	141.636	154.325
Sales and marketing	169.005	277.330	398.169	491.455	492.542
General and administrative	69.300	112.443	153.943	175.572	190.711
Goodwill impairment	n/a	n/a	n/a	n/a	131.997
Contract termination fees	n/a	n/a	n/a	n/a	23.044
Total operating expenses	269.599	442.926	636.693	808.663	992.619
Loss from operations	**-26.449**	**-30.128**	**-169.991**	**-318.759**	**-492.874**

Source: Own illustration

Tables 6 and 7 show the growth structure of Pandora Media's revenue and expense growth. Total revenue increased from $ 600,233 million to $ 1,466,812 billion, which is an average rate of 24.55% annually over the five-year period analysed. However, the cost structure reveals the other side of Pandora Media's business. Cost revenue costs grew at an average rate of 29.16%. General cost grew at a rate of 28.02%. All this directly affected the increase in total operating expenses of 37.84%. The total cost increase was on average 13 percentage points higher than the total revenue increase. The coefficient of determination in all the analysed categories is greater than 90% and the research results can be accepted.The increase in direct costs should be accompanied by an increase in general operating costs, which include system maintenance and employee costs, which grew at an average annual rate of 28.02%. The movement of total overheads, ie all costs without direct production costs, indicates the need to change the business management model. Total overheads grew at an average annual rate of 37.84%. Direct costs grew at an average rate of about 5 percentage points above the rate of total revenues, while total operating expenses grew at a rate of about 13 percentage points above the rate of total revenues.

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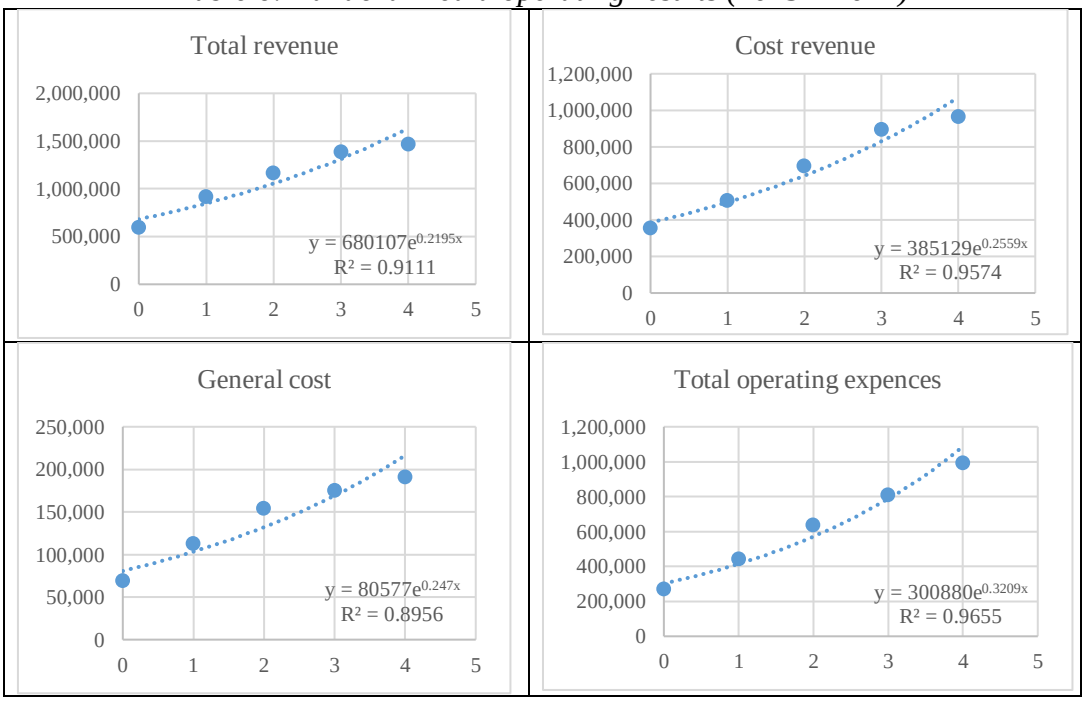
Table 6: Pandora Media operating results (2013 – 2017)



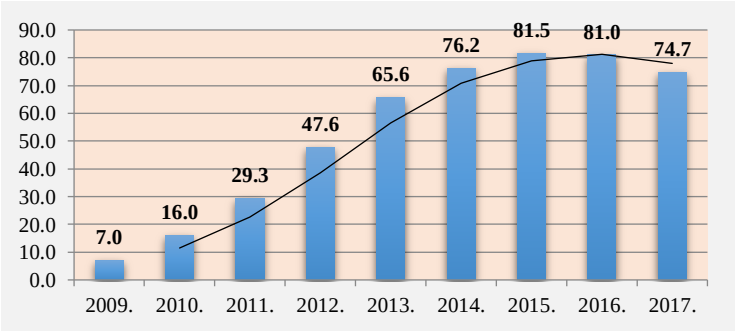
Source: Own illustration

Table 7: Exponential trend equation (Pandora Media 2013 – 2017)

Revenue	Cost of revenue	General cost	Total cost
$Y=680107*1,2455^x$	$Y=38129*1,2916^x$	$Y=80577*1,2802^x$	$Y=300880*1,3784^x$

Source: Own illustration

Figure 3: Number of Pandora's active users from 2009 to 2017 (in millions)



Source: own illustration

The trend in the number of active users of the Pandora Media service is shown in Figure 3. The increase in the number of users was recorded between 2009 and 2014. Since 2015, the number of users has begun to decline. Survey results, published in a Pandora Media report titled 10-K, showed that approximately 90% of Pandora Media listeners are from the US, with the majority of other users being in Canada, Australia and New Zealand. According to the small print in Pandora's latest results, the company ended June 2018 with 71,4m active users. That was down 4,6m on the same period last year, and down 900,000 quarter-on-quarter. It was also lowest base consumers Pandora has seen for five years, since back in mid-2013 (Ingham 2018). Costs rise above the rate of increase in revenue as a result of the closure of business operations in Australia and New Zealand. The corporate stabilization strategy is aimed at users in the United States, that is, the audience listening to country music in the United States.

5. DISCUSSION

Spotify and Pandora Media, corporations from the streaming service sector in the music industry, use two completely different management strategies. By comparing financial results, we can compare the success of these strategies:

- Spotify uses a subscription relationship strategy to help users create their own personal playlists. In the analysed period, revenues grew at an average rate of 47.77%. In the last analysed period, revenue increased 25.58%, while cost of revenues increased 20.51%. This has a significant impact on the gross profit increase of 59.36%. Operating lost has been significantly reduced, but Spotify is still at a loss.
- The number of premium Spotify users in the last five years has grown at an average annual rate of 44.38%, while the number of monthly users has been increasing at an average rate of 31.50%. A higher percentage of premium users' growth than monthly users allowed Spotify's revenue growth to drive them to a profitability threshold.
- Pandora Media's total revenue grew at an average rate of 24.55%, but cost of revenue grew at a rate of 29.16. A continuous increase in costs directly contributed to a continuous increase in loss from operation.
- In 2016, the number of users for the first time decreased compared to the previous year and continued to decline in the following year. All this resulted in the final sale of the corporation to SiriusXM Group.

The results of the analysis showed different strategies of the analysed corporations as well as completely different financial results. We cannot confirm the first hypothesis with any of the corporations analysed. Total revenue was rising, but operating expenses were negatively impacted by EBIT measurements. However, the cost of revenue turned out to be too high for corporations to be very profitable. The second hypothesis can only be confirmed by Spotify, which has opted for a premium user strategy, that is, advertising-free subscription while listening to music. Users form their own playlists and listen to selected music at any free time. Pandora Media opted for a free access strategy, but users were not prepared for many advertisements. In addition, they could not form their own playlists and started leaving the platform. Spotify's strategy has proven to be much more successful than Pandora Media's strategy. Meanwhile, the Apple Corp. has entered the music streaming industry with the Apple Music platform, and the relationship within the industry has changed dramatically. As Pierce (2017) pointed out: The streaming wars might be over, and Pandora might have missed them.

6. CONCLUSION

The music streaming industry has replaced models of pirated music consumption. Although only 15 years old, it is nearing saturation and maturity. Within the industry, a process known as the zero sum game has begun, and is known from the physical product industries. Spotify has grown into a leading music streaming platform, but has not yet achieved full profitability. Pandora Media has changed its management strategy, and by switching to the management of the SiriusXM media group, it has expanded its business model to different segments of the media industry. Apple Music is growing at a high rate of speed and it will be interesting to analyse the continuing battle in the top streaming music industry.

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CLUSTERING AS A DRIVER OF REGIONAL ECONOMIC COMPLEXES INNOVATIVE DEVELOPMENT IN CONDITIONS OF KNOWLEDGE ECONOMY FORMATION

Elena Kostuchenko
Polotsk State University,
Novopolotsk, 29 Blokhin Street, 211440, Republic of Belarus
e.kostuchenko@psu.by

Sevinj Abbasova
Associate Professor at
Azerbaijan State Economic University(UNEC), Azerbaijan
sevinj.abbasova@yandex.ru; sevinj.abbasova@unec.edu.az

Vladimir Klyunya
Polotsk State University,
Novopolotsk, 29 Blokhin Street, 211440, Republic of Belarus

ABSTRACT

The article substantiates that clustering is a driver of innovative development of regional economic complexes in conditions of formation of knowledge economy and network economy. In this regard, traditional approaches to innovative development and increase of competitiveness in the Republic of Belarus should be supplemented by cluster approach. Clusters are self-organizing systems where strategic competitive advantages are created through the synergistic effect of network cooperation and public-private partnership. Innovation-industrial cluster is a set of geographically localized in a certain area, complementary, competing businesses (including suppliers, producers and consumers) linked by relations of cooperation to each other and with state and local authorities, united around the research or scientific-educational centre on an informal basis, with a purpose of creating a favourable environment for the dissemination of innovation, and enhancing innovative activity and competitiveness of organizations-actors of the cluster, regional and national economy. The growth of innovation activity in clusters is the result of positive externalities: exchange of knowledge, technologies, high innovative activity of firms due to high competition. There is no generally accepted method for identifying clusters. All methods of identifying clusters are divided into quantitative and qualitative ones. In order to identify clusters the localization coefficient, the coefficient of per capita production and the coefficient of specialization of industries were calculated. It is concluded that there is a sufficient degree of localization of the organizations of relevant economic activities for identifying potential petrochemical, leather, footwear and textile clusters in the territory of Vitebsk region. The innovative development of regional economic complexes is considered in the framework of clustering regional industrial complexes on the example of Novopolotsk petrochemical cluster. The goal, objectives and promising results of the cluster are formulated. The directions of activating the mechanisms of cooperation in the cluster are identified.

Keywords: *clustering, innovative development, cluster, network cooperation, knowledge economy network platform, privet-public partnership, Novopolotsk petrochemical cluster*

1. INTRODUCTION

The priority areas for the development of the Belarusian economy are to accelerate economic growth and increase competitiveness, both of the economy as a whole and of its individual sectors. In the context of globalization and increasing competition, the stability of the Belarusian economy largely depends on the effective development of the economy of regions and sectors.

One of the main priorities of the state policy of the Republic of Belarus is the transfer of the economy to an innovative path of development, since the intensification of innovative activity allows us to raise the level of competitiveness of the national economy and ensure stable progressive development of the country. In the Republic of Belarus, the use of a sectoral approach prevails in the management of innovative activities, which does not fully contribute to the innovative renewal of the national economy. The level of research intensity of the country's GDP is not high enough. In this regard, the search for new approaches to organizing and managing innovative activities at the country level, as well as creating an enabling environment for the development, dissemination and commercialization of innovations, becomes relevant. For the economic development of the country's regions, it is necessary to build continuous and regular interaction of science and production, as well as the full-scale application of competitive scientific and technical solutions and achievements. Organizational, legal and economic conditions are needed that will accelerate the development of production and the launch of competitive and high-tech products on the market. In regions of the country there are necessary prerequisites for it, namely a significant number of organizations and the developed potential of research and educational institutions of the same profile. In the modern economy, the cluster approach is one of the most effective tools for developing regional economies and increasing the competitiveness and innovative activity of organizations, as evidenced by the vast experience of clustering of economically developed countries [6]. In the context of the formation of innovative economy of the Republic of Belarus, there is a need to develop new and effective mechanisms for the development of regional and sectoral complexes that operate in conditions of fierce competition and dynamically changing external environment. In recent decades, cluster theory has become increasingly popular not only among foreign researchers, but also among domestic economists. Ensuring a steady pace of development of the territory, achieving the strategic goals of the regions is impossible without an interested partnership of the authorities with business representatives. Cluster approach to managing regional development is an alternative to traditional sectoral industrial policy [4]. Clusters can become the basis for effective economic development of regions, being innovative systems. The cluster approach is a promising basis for creating new forms of combining knowledge, stimulating the emergence of innovative scientific and technical areas and their commercial applications, as well as indirectly supporting the field of education, science and business [10]. In addition, this approach to organizing effective interaction between business entities can be successfully applied in the transition to a knowledge economy and digital economy. A unified theory of clusters is not yet formed in the international practice. There is a set of definitions of a cluster, there is no universally accepted classification of clusters and a unified approach to the study and identification of cluster structures. Conducting systemic research on the formation of conceptual structure and basic conceptual positions of cluster concept gains a particular relevance in this context. Thus, the purpose of research in this article is to investigate theoretical foundations of clusters and to assess clustering potential of manufacturing sector of Vitebsk region. The novelty of this research lies in the fact that the theoretical and practical foundations of clustering regional industrial complexes of the Republic of Belarus have been studied and scientifically grounded for Novopolotsk petrochemical cluster.

2. THE IMPACT OF CLUSTERS TO THE COMPETITIVENESS AND INNOVATIVE ACTIVITY OF ORGANIZATIONS

Successful economic development is a process of successive economic upgrading, in which the business environment in a nation evolves to support and encourage increasingly sophisticated ways of competing. Interdependence between productivity, innovation, and the business environment can be represented by the diamond model (see figure 1) [5, p. 5]. A country's or region's future competitiveness depends on progress in two dimensions: cross-cluster issues

affecting the whole economy and clusters [5, p. 23]. Clusters provide the opportunity to move to a new level of private-public partnership. They can also be a test-ground for developing solutions to economy wide problems. However, cluster initiatives alone are less effective, if they are not part of an overarching approach to improve competitiveness on the national and/or regional level [5, p. 23].

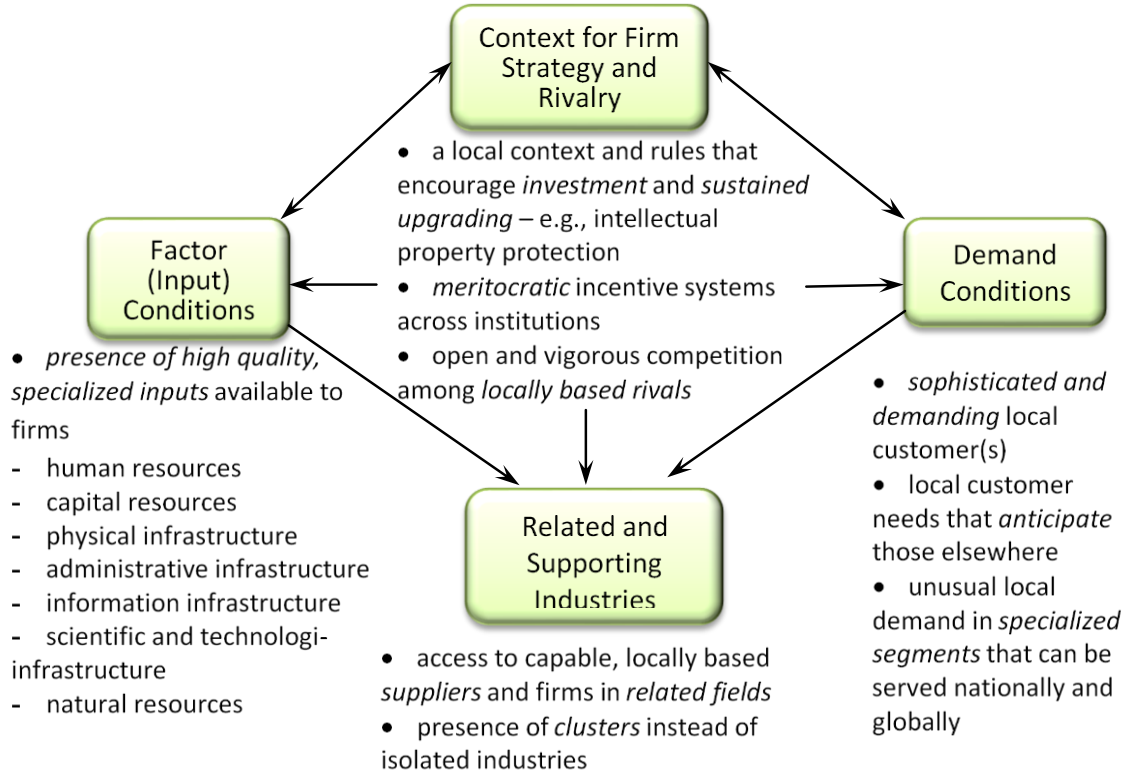

Figure 1: Interdependence between productivity, innovation, and the business environment (Source: [5, p. 5])

The impact of clusters to the competitiveness [5, p. 7]:

1. Clusters increase productivity and efficiency:
   - efficient access to specialized inputs, services, employees, information, institutions, and "public goods";
   - ease of coordination and transactions across firms;
   - rapid diffusion of best practices;
   - ongoing, visible performance comparisons and strong incentives to improve vs. local rivals.
2. Clusters stimulate and enable innovations:
   - enhanced ability to perceive innovation opportunities;
   - presence of multiple suppliers and institutions to assist in knowledge creation;
   - ease of experimentation given locally available resources.
3. Clusters facilitate commercialization:
   - opportunities for new companies and new lines of established business are more apparent;
   - commercializing new products and starting new companies is easier because of available skills, suppliers, etc.

So, clusters reflect the fundamental influence of externalities / linkages across firms and associated institutions in competition clusters and competitiveness.

3. CLUSTER DEFINITIONS. STRUCTURE OF CLUSTERS

On the one hand, cluster definitions need to be broad enough to include all relevant industries and institutions that have material linkages with the core activities of the cluster; on the other hand, cluster definitions need to be narrow enough to cover companies that face a common set of barriers to upgrade productivity and performance [5, p. 25]. Clustering could be called coopetiton – cooperating in order to be more competitive and successful [3, p. 6]. Clusters have been well described by Professor Michael Porter, the OECD, and many others. Cluster is a geographically proximate group of interconnected companies and associated institutions in a particular field, linked by commonalities and complementarities (external economies) [8, p. 6]. Clusters encompass an array of linked industries and other entities important to competition … including governmental and other institutions – such as universities, standard setting agencies, think tanks, vocational training providers and trade associations [1, p. 17]. Clusters consist of co-located and linked industries, government, academia, finance and institutions for collaboration (see figure 2).

Figure 2: Cluster structure
(Source: [11, p. 18])

Summarizing the approaches to the interpretation of the concept of "cluster", in the purpose of our research we offer the following definition of concept "innovation-industrial cluster": a set of geographically localized in a certain area, complementary, competing businesses (including suppliers, producers and consumers) linked by relations of cooperation to each other and with state and local authorities, united on an informal basis around the research or scientific-educational centre, with a purpose of creating a favourable environment for the dissemination of innovation, and enhancing innovative activity and competitiveness of organizations-actors of the cluster, regional and national economy.

4. IDENTIFICATION OF CLUSTERS IN VITEBSK REGION

At present, there is no generally accepted method for identifying clusters. The uniformity of composition is noted only in countries implementing one cluster project, for example, the project "INCLUDE" [2]). The experience of clustering shows that most countries in their analysis use the analysis of M. Porter's value chain (qualitative analysis of the production chain) and "cost-output" analysis as methods of cluster research [9]. In general, all methods of identifying clusters can be divided into quantitative and qualitative ones. The first group includes, for example, method of calculating the localization coefficient, complex methodology using the localization coefficient (M. Porter), analysis of "cost-output" tables, methodologies for identifying clusters based on indicators of overflows of knowledge, labor, (Ripley's K-function, Markon's M-function, G. Lindkvist's Q-function), method of structural shifts (Shift-Share method), etc. The group of qualitative methods includes the method of interviewing experts, the snowball method, compiling the genealogical tree of the cluster, case study, etc. Some authors suggest using the localization coefficient, the coefficient of per capita production and the coefficient of specialization of industries to identify cluster subjects [16]. If the calculated coefficients are greater than one and tend to grow, therefore, it is possible to create clusters for these types of economic activity.

We approve the proposed methodological approach on the example of the economy of the Vitebsk region calculating coefficients by types of economic activity of section C "Manufacturing" in 2000-2018. The corresponding coefficients are shown in Table 1.

Indicator	Year	Coefficient value (by sub-sections of section C "Manufacturing")														
		CA	CB	CC	CD	CE	CF	CG	CH	CI	CJ	CK	CL	CM	CN	CF-CI
Localization coefficient by types of economic activity (in terms of "volume of production")	2000	0,7	0,9	2,0	0,4	0,3	3,0	0,7	0,2	0,4	0,2	0,2	0,6	0,0	0,2	1,8
	2005	0,6	1,3	1,8	0,6	0,2	2,8	0,8	0,2	0,5	0,2	0,2	0,7	0,0	0,2	1,8
	2010	0,7	1,1	2,5	0,7	0,2	2,5	1,1	0,4	0,5	0,2	0,2	0,6	0,1	0,3	1,6
	2015	0,7	1,1	3,0	0,7	0,2	2,7	0,7	0,5	0,5	0,2	0,2	0,6	0,1	0,3	1,6
	2017	0,7	1,2	2,9	0,6	0,3	2,6	0,9	0,6	0,6	0,3	0,2	0,5	0,1	0,2	1,7
	2018	0,6	1,1	3,0	0,7	0,3	2,7	0,8	0,5	0,5	0,3	0,3	0,5	0,1	0,2	1,7
Localization coefficient by types of economic activity (in terms of "volume of produced innovative products")	2000	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	2005	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	2010	0,2	1,0	-	-	-	3,6	0,1	0,2	0,1	0,0	0,1	0,4	0,0	0,0	2,4
	2015	1,0	1,8	2,0	0,1	0,5	1,9	0,4	0,2	0,1	0,0	0,1	0,4	0,1	0,5	1,5
	2017	1,1	1,7	2,1	0,2	0,4	2,1	0,3	0,3	0,1	0,1	0,2	0,4	0,1	0,6	1,6
	2018	1,1	1,8	2,2	0,2	0,4	2,0	0,4	0,3	0,1	0,1	0,2	0,3	0,1	0,5	1,5
Localization coefficient by types of economic activity (in terms of "employment")	2000	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	2005	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	2010	1,2	1,6	2,7	1,1	0,4	4,6	0,9	0,6	1,1	0,6	0,5	1,1	0,1	0,5	1,1
	2015	1,1	1,6	3,2	1,1	0,5	4,5	0,9	0,6	1,2	0,5	0,5	0,9	0,2	0,5	1,2
	2017	1,2	1,5	3,3	1,0	0,6	4,7	0,8	0,5	1,2	0,6	0,5	0,9	0,3	0,6	1,3
	2018	1,1	1,6	3,2	1,1	0,6	4,6	0,9	0,6	1,3	0,6	0,5	0,8	0,3	0,6	1,4
Coefficient of per capita production by types of economic activity	2000	1,0	1,3	2,8	0,6	0,4	4,3	1,0	0,3	0,6	0,3	0,3	0,9	0,0	0,3	2,5
	2005	0,8	1,8	2,5	0,8	0,2	3,8	1,0	0,3	0,7	0,3	0,3	1,0	0,0	0,3	2,5
	2010	0,9	1,5	3,4	0,9	0,2	3,4	1,4	0,5	0,6	0,3	0,3	0,7	0,1	0,4	2,2
	2015	0,8	1,4	3,7	0,9	0,2	3,4	0,9	0,6	0,6	0,3	0,3	0,7	0,2	0,4	2,0
	2017	0,9	1,7	3,6	0,8	0,3	3,5	0,8	0,6	0,7	0,4	0,3	0,8	0,2	0,5	2,1
	2018	0,9	1,6	3,7	0,9	0,3	3,4	0,9	0,6	0,7	0,4	0,3	0,8	0,2	0,5	2,2
Coefficient of specialization of the region on the given type of economic activity	2000	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	2005	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	2010	1,4	2,2	5,0	1,4	0,3	4,9	2,1	0,7	0,9	0,4	0,4	1,1	0,1	0,5	3,2
	2015	1,2	2,2	5,6	1,3	0,4	5,2	1,4	0,9	0,9	0,4	0,4	1,1	0,3	0,5	3,0
	2017	1,1	2,3	5,4	1,2	0,4	5,3	1,5	0,8	0,9	0,5	0,3	1,2	0,2	0,6	3,1
	2018	1,2	2,3	5,5	1,2	0,4	5,2	1,3	0,9	0,8	0,5	0,4	1,2	0,2	0,6	3,2

Table 1: The localization coefficient, the coefficient of per capita production and the coefficient of specialization of industries for Vitebsk region by types of economic activity in 2000-2018 (Source: calculated by the author on the basis of [7; 12; 13; 14; 15])

Analysing the values of the coefficients of localization by types of economic activity, per capita production by types of economic activity and specialization of the region on the given type of economic activity in aggregate, it can be concluded that there are prerequisites for clustering in Vitebsk region by such type of economic activity as "Manufacture of textiles, wearing apparel,

leather and related products" (sub-section CB), "Manufacture of wood and paper products; printing and reproduction of recorded media" (sub-section CC), "Manufacture of basic pharmaceutical products and pharmaceutical preparations" (sub-section CF) and for aggregation of types of economic activity of sub-sections CF-CI. When analysing the values of the coefficients of per capita production by types of economic activity and specialization of the region on the given type of economic activity in aggregate, it can be concluded that there are some prerequisites for clustering in Vitebsk region by such type of economic activity as "Manufacture of food products, beverages and tobacco products" (sub-section CA) and "Manufacture of rubber and plastics products, and other non-metallic mineral products" (sub-section CG). Analysing only the values of the coefficients of specialization of the region on the given type of economic activity, it can also be noted that there are some prerequisites for clustering in Vitebsk region by such type of economic activity as "Manufacture of coke and refined petroleum products" (sub-section CD) and "Manufacture of transport equipment" (sub-section CL). In general, we can conclude that in Vitebsk region the most significant prerequisites for clustering exist precisely for the types of economic activity "Manufacture of textiles, wearing apparel, leather and related products" (sub-section CB), "Manufacture of wood and paper products; printing and reproduction of recorded media" (sub-section CC), "Manufacture of basic pharmaceutical products and pharmaceutical preparations" (sub-section CF) and for aggregation of types of economic activity of sub-sections CF-CI. In other words, we can say that there is a sufficient degree of localization of the organizations of relevant economic activities for identifying potential petrochemical, leather, footwear and textile clusters in the territory of Vitebsk region.

5. NOVOPOLOTSK PETROCHEMICAL CLUSTER

Nowadays, environmental problems are acute in the Novopolotsk region, there is a threat to the sustainability of the region's development due to trends in de-carbonization of industries and the transition to a low-carbon economy, green economy, circular economy (this is due to the region's specialization (city-forming industries) in chemistry, petrochemicals and oil refining). In this regard, the region needs a reorientation to new technologies, new types of industries, and the use of new resources. The region needs to intensify innovation processes, to develop small and medium-sized businesses, and to intensify digital transformation. To implement the transformations, a comprehensive approach is needed, joint efforts of business (large, medium and small), science (research and development, education), government, infrastructure are needed to build a new development strategy and implement it. The tool (organizational form) of such interaction is the cluster. The effective functioning of the cluster should become the foundation for achieving the key goals of sustainable development of the region. Novopolotsk innovation-industrial petrochemical cluster is a combination of legal entities and individual entrepreneurs, geographically localized, complementary, competing, linked by cooperative relationships, as well as interacting with the organization of cluster development on a contractual basis, aimed at creating an enabling environment for the spread of innovations, development and production of innovative and high-tech products. The cluster as one of the "drivers" of economic growth is primarily oriented (in the long-run) to improving the quality of life of the population based on the growth of the economy's competitiveness, attracting investments and innovative development. The purpose of Novopolotsk petrochemical cluster is to increase the competitiveness of the territory through the growth of innovative activity of cluster entities and improvement of mechanisms for their interaction.

The main sub-goals (tasks) of functioning of Novopolotsk petrochemical cluster are:

- consolidation of production, scientific, educational, innovative, organizational, administrative potential, aimed at improving the competitiveness of products and the regional economy;
- promoting the development of scientific, industrial, organizational cooperation within the framework of the cluster, including the commercialization of scientific research;

- introduction of technological innovation by ensuring the effective interaction of science, business and government;
- increasing the competitiveness of cluster entities at the regional, national and global levels;
- transfer of innovation according to the "science-production" scheme;
- preparation of proposals for public authorities and local authorities in the field of industrial, innovative, scientific, educational, cluster policy;
- promoting the development of industries related and complementary types of economic activity;
- promoting the growth of employment in the region through the development of small and medium-sized enterprises;
- increasing the investment attractiveness of the region and ensuring high rates of economic growth.

The results of functioning of the cluster should be:
- growth of innovative activity and economic potential of the region;
- increase in the number of employed citizens for newly created jobs, including through the creation of new enterprises and industries;
- increase in competitiveness, quality, production volumes and sales of products (works, services);
- increase in labour productivity;
- increase in the volume of research and development carried out to create new and modernize existing technologies and industries, the commercialization of scientific and technological developments;
- growth in real investment;
- ensuring social stability and economic development of the region, increasing its economic potential, economic attractiveness and competitiveness;
- development of small and medium-sized businesses.

The following cluster projects were identified as the most promising areas of interaction (possible cooperation of cluster participants in the long term):
- production of small tonnage chemical and petrochemical products;
- production of sulfur concrete.

To increase the cluster's effectiveness and competitiveness, it is necessary to fully utilize the mechanisms of network cooperation and public-private partnership (PPP) by all cluster participants. The set of measures to enhance network cooperation and PPP during clustering includes the following areas:
- creation of a favourable macroeconomic and legal environment for the implementation of mechanisms for network cooperation and PPP;
- development of program documents for enhancing network cooperation and PPP in individual sectors of the economy both at national and regional level;
- promoting the dissemination of knowledge about networking and PPP;
- training of specialists in the field of PPP and network cooperation, as well as increasing the potential of the public sector, which will directly or indirectly relate to the implementation of PPP projects;
- identifying the most significant prerequisites and launching pilot projects for the implementation of network cooperation and PPP;
- preparing and conducting activities aimed at developing a culture of cooperation (both between private partners and / or competitors, and between them and their state partners),

with the aim of increasing the level of mutual trust;

- development of forms and mechanisms for effective interaction between all subjects of network cooperation and PPP;
- development of optimal mechanisms for interaction with elements of innovative infrastructure and research organizations in the framework of network cooperation and PPP;
- assistance and partnership in the implementation of projects for the formation of a scientific and innovative infrastructure in the framework of network cooperation and PPP (technology centres, technology parks, equipment sharing centres, industry technology transfer centres, industry laboratories, free economic zones, etc.);
- improving tax and customs policies, including tax and customs benefits;
- promotion of preferential financial policies;
- more active formation of elements of the institutional environment of PPP in the country: financial and economic institutions providing investment and guaranteeing private investment, independent organizations conducting project reviews and consulting, management companies, associations, foundations, etc.;
- support for the implementation of cluster programs on the basis of network cooperation and PPP;
- development of a set of measures to stimulate and support regional cluster initiatives and cooperation;
- establishment of competitions and grants aimed at selecting and financing the implementation of promising cluster projects;
- development of forms and mechanisms for effective communication interaction within the framework of network cooperation and PPP (B2B, B2A and C2A portals).

The last of the above area is becoming increasingly relevant within the framework of modern trends in the digital transformation of the economy and international integration processes.

6. CONCLUSION

In the conditions of formation of knowledge economy and network economy, traditional approaches to innovative development and increase of competitiveness should be supplemented by a new cluster approach in the formation of factors of competitive advantages. Clusters are self-organizing systems in which strategic competitive advantages are created through the synergistic effect of network cooperation and public-private partnership. The growth of innovation activity in clusters is the result of positive externalities: the exchange of knowledge, technologies, high innovative activity of firms due to high competition. In general, the theoretical study allows to assert that for the Republic of Belarus cluster approach may become a very promising way to increase the competitiveness of products and a mechanism for enhancing innovation processes in regions. On the territory of Vitebsk region, there are prerequisites for the establishment of petrochemical cluster, leather, footwear and textile clusters. These clusters may become the basis of enhancing the competitiveness of firms participating the clusters, which may increase the competitiveness of Vitebsk region and country economy as a whole. The effective functioning of Novopolotsk petrochemical cluster should become the foundation for achieving the key goals of sustainable development of the region.

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REMUNERATION STRUCTURE ACCORDING TO OCCUPATIONS IN POLAND IN 2018

Agata Gomolka
Jagiellonian University, Golebia 24, 31-007 Cracow, Poland
agata.gomolka@doctoral.uj.edu.pl

ABSTRACT
The gender pay gap is a phenomenon widely studied in literature, both in terms of the factors that affect it and the effects it produces. The set of factors affecting the remuneration of women and men is constantly verified, and occupation is one of the most often cited ones. Literature studies indicate that depending on the technique used, the results of individual analyses may differ significantly. This article proposes another attempt to analyse the studied phenomenon – the use of the same technique using data on the structure of remuneration in Poland from two different sources. The purpose of this article is to show the relationship between the level of remuneration and the occupation held in Poland in 2018 using data from a public and private institution. The structure of the paper is as follows: first, the databases on the structure of remuneration will be characterized. Then, groups of professions in Poland will be characterized and the different levels of remuneration. The occupations will be unified and presented in the form of so-called large groups of occupations, according to Classification of Occupations and Specialties (COS). Then econometric analysis methods will be used and the results will be critically analysed. The study is completed with the summary and presentation of the most important conclusions. The research methods used are literature studies on the phenomenon of gender pay gap and analysis of statistical data made available by the Central Statistical Office in Poland and Sedlak & Sedlak for 2018.
Keywords: *data source, gender pay gap, occupaction group*

1. INTRODUCTION

Remuneration is a measure of the purchasing power of the population and at the same time shows how wealthy the given society is. The structure of the level of remuneration in a given group of occupations is also a signpost for people seeking their career path, what remuneration they can expect when applying for a job in a given position. The general level of remuneration in a given group of occupations only provides information averaged for all employees, with more valuable information broken down by employee in terms of gender. Literature studies show that within a given occupations group there may be a large stratification of the level of remuneration due to gender (Boll, Lagemann, 2018). The difference between the remuneration of women and men, called the gender gap in literature, occurs and persists in both developed and developing economies, which can be seen in international reports presented by national, regional and global organizations (e.g. OECD; https://www.oecd.org/ or Eurostat https://ec.europa.eu/eurostat). The reasons for this can be rooted in the individual characteristics of the employee (experience, education, qualifications (Mincer (1974), Becker (1964)),but also in the employer's characteristics (type of company, type of business, size of the company (Kompa, Witkowska (2018)). The occurrence of this phenomenon is confirmed in many specialist analyses, while the magnitude of this variation can vary significantly. As indicated by Fortin et al. (2011) or Goraus et. al (2017), depending on the technique used to analyse the database, the differences in pay levels between the gender can range from a few to several percent. Weichselbaumer and Winter-Ebmer (2005) indicate that the differences in estimates may be the result of inaccurate use of econometrics. Will the results also be so different using the same technique but different databases? To answer this research question, the structure of remuneration in Poland in 2018 was analysed using data from two different sources – from a

public institution (Central Statistical Office; https://stat.gov.pl/) and from a private institution (Sedlak&Sedlak; https://sedlak.pl/). Then, it is analysed for convergent points (general conclusions from both databases), as well as for differences and their causes. The data analysis was completed with the estimation of the parameters of the previously constructed economic model for both databases and the presentation of the most important conclusions.

2. GENERAL DATABASE CHARACTERISTICS

The Central Statistical Office, as a public institution, deals with the collection and processing of data on the structure of remuneration in Poland. In addition to this public institution, there are also commercial organizations specializing in data collection and analysis, one of them is Sedlak&Sedlak. The comparison of both databases on the structure of remuneration is presented in the tabular form presented below.

Criterion	Central Statistical Office	Sedlak&Sedlak
Type of institution collecting data	Public	Private
The nature of the given database	Representative survey of the structure of remuneration by occupations for October 2018 carried out in enterprises employing more than 9 people	A declarative survey of the structure of remuneration by profession for 2018
Data source	Z-12 form	National Remuneration Survey - OBW
Frequency of tests	every two years	every year
Number of people in the sample	8425,2 thousand employed	103,1 thousand employed
Number of people working in the public sector in the sample	30.8%	16.69%
Number of people working in the private sector in the sample	69.2%	83.31%
Number of women in the sample	49.1%	41.11%
Number of men in the sample	50.9%	58.89%

Table 1: Comparison of databases from the Central Statistical Office and Sedlak&Sedlak (Source: own study based on the data from the Central Statistical Office (https://stat.gov.pl/) and Sedlak&Sedlak (https://sedlak.pl/).

Databases differ in the way they are obtained (Central Statistical Office appoints entrepreneurs to provide information about their employees, while Sedlak&Sedlak collects data directly from employees), the frequency of conducting the study (Central Statistical Office collects data in 2-year intervals, acquiring data always from October, Sedlak&Sedlak collects data on a continuous basis) and the nature of the survey (entrepreneurs who are designated by the Central Statistical Office for the survey are obliged to perform it, while the data obtained by Sedlak&Sedlak are completely voluntary). In both databases, the number of people working in the public sector is smaller compared to the private sector and the number of women in the sample is smaller than the number of men. The analysed data on the structure of remuneration was presented according to the same scheme, i.e. the division into 9 “large” groups of professions in accordance with the “Classification of Occupations and Specialties” (COS), introduced on the basis of the Regulation of the Minister of Labour and Social Policy of August 7, 2014 on the classification of professions and specialties for the needs of the labour market

and the scope of its application (Journal of Laws of 2014, item 1145), taking into account the changes introduced by the Regulation of the Minister of Family, Labour and Social Policy of November 7, 2016 amending the regulation on the classification of professions and specialties for the needs of the labour market and the scope of its application (Journal of Laws, item 1876). The analysis also uses the "Polish Classification of Activities 2007", introduced on the basis of the Regulation of the Council of Ministers of December 24, 2007 on the Polish Classification of Activities (PCA) (Journal of Laws no. 251 from 2007, item 1885, as amended).

2.1. Remuneration structure according to Central Statistical Office

The remuneration structure according to the Central Statistical Office methodology was presented for women and men, broken down into public sector and private sector (Figure 1).

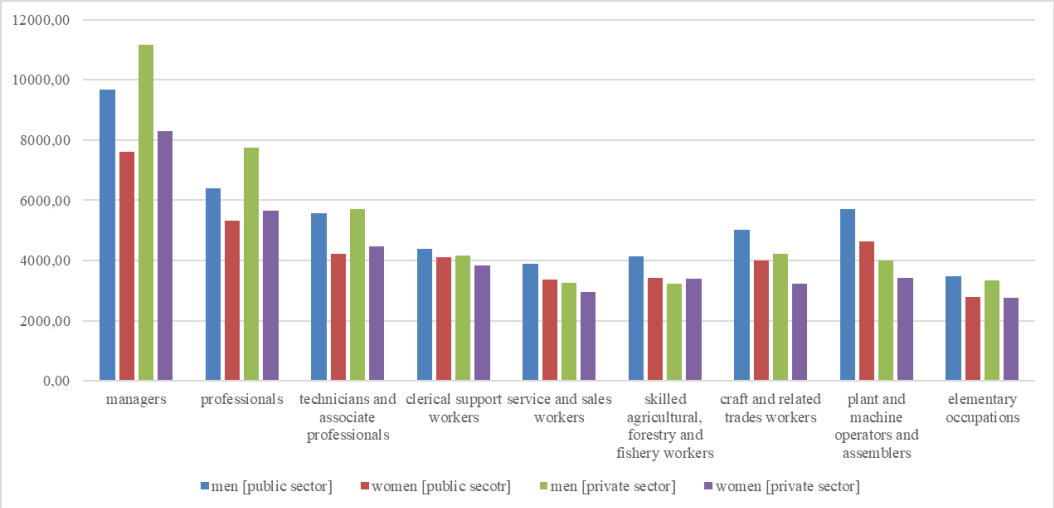

Figure 1: The structure of remuneration in Poland in 2018 according to Central Statistical Office [in PLN]
(Source: Own study based on data from the Central Statistical Office)

The following conclusions can be drawn from the presented chart:

- The best-paid professional group in Poland in 2018 is the group of managers (in total 9597,49 PLN, i.e. over 3.5 times more than the current minimum wage in Poland[1]), both in the public sector and private sector;
- The worst paid group of professions are employees performing elementary occupations (in total 3002,43 PLN), regardless of the sector type;
- Considering all occupational groups, higher salary in 2018 was recorded in the public sector: men's salary averaged 5362,79 PLN (in the private sector 5204,82 PLN), women's salary was 4383,94 PLN (in the private sector 4222,12 PLN).
- The average salary in the analysed groups of occupations in Poland in 2018 was 4719,39 PLN
- In each analysed group of professions, women earned on average less than men, the largest total disparity was recorded in the group of managers (men on average earned 26.12% more than women in a similar position), a smaller disproportion was noted in the group of clerical support workers (men earned 6.20% more than women)[2];

[1] 2600,00 PLN (Regulation of the Council of Ministers of September 10, 2019 on the amount of the minimum remuneration for work and the amount of the minimum hourly rate in 2020 (Journal of Laws from 2019, item 1778).
[2] The values of the remuneration gap between women and men in the group of skilled agricultural, foresty and fishery workers are not taken into account in the analysis due to the lack of representation of women in the public sector in the Sedlak&Sedlak database.

- Analysing the public sector separately, the largest disproportion was noted in the group of technicians and associate professionals (men earned on average 24.57% more than women), and the lowest in the group of clerical support workers (6.35%);
- Analysing the private sector separately, the largest disproportion was recorded in the group of specialists (men's remuneration was on average 27.07% higher than women's remuneration in an analogical occupation), while the lowest in the group of clerical support workers (8.08%)

2.2. Remuneration structure according to Sedlak&Sedlak

The remuneration structure based on the Sedlak&Sedlak database is presented in the same way as the Central Statistical Office database (Figure 2).

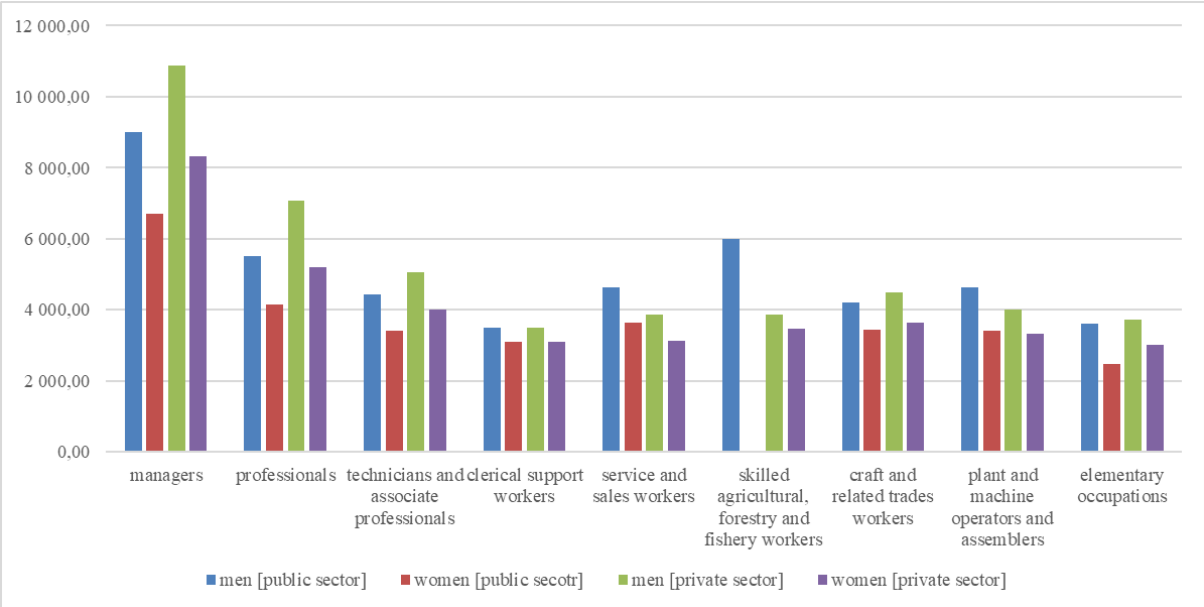

Figure 2: The structure of remuneration in Poland in 2018 according to Sedlak&Sedlak [in PLN]
(Source: Own study based on data from Sedlak&Sedlak)

Analysing the private base (Sedlak&Sedlak), the following analogies can be noted:

- The best-paid professional group in Poland in 2018 is a group of managers (in total 9802,24 PLN, i.e. over 3.7 times more than the current minimum wage in Poland), both in the public sector and private sector;
- The worst paid group of professions are clerical support workers (in total 3340,91 PLN) and employees performing elementary occupations (in total 3421,21 PLN);
- Considering all occupational groups, higher salary in 2018 was recorded in the private sector: men's remuneration was on average 5162,29 PLN (in the public sector 5056,78 PLN), women's remuneration was 4137,05 PLN (in the public sector 3792,80 PLN).
- The average salary in the analysed occupational groups in Poland in 2018 was 4860,51 PLN
- In each analysed group of professions, women earned on average less than men, the largest disparity was recorded in the group of managers (men on average earned 24.11% more than women in an analogical position), the smallest disproportion was noted in the group of clerical support workers (men earned 11.33% more than women);
- Analysing the public sector separately, the largest disproportion was noted in the group of employees performing elementary occupations (men earned on average 31.27% more than women), and the smallest in the group of clerical support workers (10.97 %);

- Analysing the private sector separately, the largest disproportion was noted in the group of specialists (remuneration of men was on average 26.77% higher than women's remuneration in an analogical position), while the lowest in the group of clerical support workers (11.38 %).

2.3. Comparison of both databases

Although the data comes from two different sources, it can be seen that the groups with the highest salary levels are the same, i.e. managers (the average level of earnings according to Central Statistical Office is 9597,49 PLN, according to Sedlak&Sedlak 9802,24 PLN) and specialists (the average level of earnings according to Central Statistical Office to 6093,43 PLN, according to Sedlak&Sedlak 6064,46 PLN). Taking into account the groups of professions with the lowest salary levels, according to the Central Statistical Office data, this was the group of employees performing elementary occupations (3002,43 PLN) and service and sales workers (3129,77 PLN), while according to Sedlak&Sedlak these were clerical support workers (3303,62 PLN) and employees performing elementary occupations (3421,21 PLN). The average salary in the entire sample was at a similar level, i.e. according to Central Statistical Office, it was 4719,39 PLN, while according to Sedlak&Sedlak 4860,51 PLN, similarly in the groups with the highest level of remuneration. The average salary for men and women throughout the entire data set was also similar, i.e. according to Central Statistical Office, men earned on average 5192,64 PLN, women 4194,36 PLN, according to Sedlak&Sedlak the average level of remuneration for men was 5268,02 PLN, while for women 4068,09 PLN. It is also worth emphasizing that in each analysed group of occupations it was women who received lower wages. The pay gap, i.e. the percentage difference between women's remuneration compared to men's remuneration[3], reached the level of 18.62% in the case of Central Statistical Office data and 20.67% in the case of Sedlak&Sedlak data. Considering individual occupational groups, in most cases the difference between women's and men's earnings was double-digit. A detailed analysis of the levels of remuneration is presented in the next point. The attention should also be paid to another aspect of the compared databases. Data from the Sedlak&Sedlak database are declarative. In the literature, however, it is pointed out that the data on remuneration declared by employees are burdened with error (it is emphasized that this burden increases along with the increase in the unit's earnings) (Roszkowska, Rogut, 2007, p.64). Despite this, the results on women's pay compared to men's pay are similar.

3. REGRESSION ANALYSIS

In order to check the impact of the occupation held on the gender pay gap, I compare the estimation of the econometric model parameters using the least squares method (OLS) using the STATA program. The explained variable is remuneration denominated in Polish currency-Polish zloty (PLN). Gender is represented by a dichotomous dummy category describing women or men. Occupation is described by 8 "large" groups, e.g. managers, professionals, technicians and associate professionals, clerical support workers, service and sales workers, craft and related trades workers and elementary occupations. The reference dummy variable are women and plant and machine operators and assemblers. The results of the estimation of the model parameters for data from the Central Statistical Office and Sedlak&Sedlak are presented in Table 2.

Table following on the next page

[3] According to Eurostat, the unadjusted gender pay gap is defined as the difference between the average gross hourly earnings of men and women expressed as a percentage of the average gross hourly earnings of men (https://ec.europa.eu/eurostat/statistics-explained/index.php/Gender_pay_gap_statistics, access: 05/05/2020).

	Central Statistical Office				Sedlak&Sedlak			
l_remuneration	**coef.**	**Std. Err.**	**t**	**P> I t I**	**coef.**	**Std. Err.**	**t**	**P> I t I**
Gender								
male	0.2017422	0.352437	5.27	0.000	0.2388591	0.315356	7.57	0.000
sector								
public sector	0.604274	0.352437	1.71	0.100	-0.0639313	0.315356	-2.03	0.055
"Large" groups								
clerical support workers	-0.56812	0.0704873	-0.81	0.429	-0.1455297	0.0630713	-2.31	0.031
craft and related trades workers	-0.669777	0.0704873	-0.95	0.352	0.0278583	0.0630713	0.44	0.663
elementary ocupations	-0.3475159	0.0704873	-4.93	0.000	-0.1853057	0.0630713	-2.94	0.008
managers	0.7355001	0.0704873	10.43	0.000	0.812907	0.0630713	12.89	0.000
professionals	0.3567147	0.0704873	5.06	0.000	0.3453033	0.0630713	5.47	0.000
service and sales workers	-0.2632327	0.0704873	-3.73	0.001	-0.0111008	0.0630713	-0.18	0.862
technicians and associate professionals	0.1281679	0.0704873	1.82	0.083	0.0926902	0.0630713	1.47	0.156
cons.	8.247758	0.0704873	148.01	0.000	8.158761	0.0498622	163.63	0.000

Table 3: Resulkts of estimates of the Central Statistical Office and Sedlak&Sedlak model parameters
(Source: Own study)

According to the presented model in the analysed Central Statistical Office sample, men received over 20.17% higher remuneration than women, 6.04% higher remuneration in the public sector compared to the private sector and the highest level of remuneration in the group of managers (73.55% more than the base value, i.e. machinery and equipment operators and assemblers) and specialists (35.67% more than the base value). In turn, from the analysis of results regarding to the sample of Sedlak&Sedlak, men received over 23.89% higher salary than women, 6.39% lower salary in the public sector compared to the private sector and the highest level of remuneration in the group of managers (81.29% more than the base value, i.e. plant and machine operators and assemblers) and specialists (34.53% more than the base value). The results of the regression clearly show that there are different levels of pay between men and women working in the same profession (regardless of the type of database). Gannon et al. (2005), in turn, indicates that the industry also causes a significant pay gap (from 29% in Ireland, respectively 14 % and 16% in Denmark and Italy, around 7% in the UK and almost nothing in Belgium and Spain (Gannon et. al., 2005, p. 152). It would be worth considering this variable in the analysis in the perspective of further research. It is worth emphasizing that the phenomenon of gender pay gap should not be confused with the professional choices of women and men who consciously decide to work in a specific industry (Boll et al., 2016, p.4). Analysis results for other countries confirm that the selection of male and female employees in different sectors contributes to the existence of pay differences. Hence, a significant part of the gender gap is due to the fact that women are over-represented in low-wage industries (education, health, social work) and under-represented in well-paid industries (Boll et al., 2016, p.10).

4. CONCLUSION

The conducted research analysis, despite the use of two different databases, gave the opportunity to capture trends in the remuneration policy in Poland in 2018. The above statistical analyses, presented by both public and private institutions, clearly indicate that in the Polish economy one can notice a fairly strong pay gap, both in terms of the level of remuneration between groups as well as within given groups. The results of the analysis also highlight that women are a less-favoured group of employees in Poland and always receive a lower salary, regardless of their occupation. In addition, the difference between their level of remuneration and the level of remuneration for men in the same group of professions is usually two-digit. The situation does not change depending on whether women work in the public or private sector. The analysis presented in the article is only a preliminary study on the structure of remuneration in Poland, therefore it should be treated more like highlighting the existing problem on the Polish labor market, and not as an in-depth analysis from which far-reaching

conclusions can be drawn. At a later stage of the research, it is worth expanding the analysis to include further variables affecting the level of remuneration, both due to the employer (sector in which the enterprise operates, size of the enterprise, type of ownership, etc.), as well as due to the individual characteristics of the employee (experience, level of education, age, etc.). It is also worth considering a longer period (depending on the availability of data), instead of a single year. Thanks to this, it will be possible to find the reasons for the current state of affairs and contribute to the creation of tools that will reduce the negative effects of the gender pay gap.

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GLOBAL ENERGY SECURITY AS A GLOBAL PUBLIC BLESS

Rauf Qusxani
Azerbaijan State University of Economics (UNEC)
Baku, Istiqlaliyyat str.6, AZ1001, Azerbaijan
rauf.kafedra@mail.ru

Maksimov Ivan
Astrakhan State University
Astrakhan, Tatischev str. 20a, 414056, Russia
sovetniklaw@yandex.ru

Matsuy Elena
Astrakhan State University
Astrakhan, Tatischev str. 20a, 414056, Russia
elena-matsuy@mail.ru

Kryukova Ekaterina
Astrakhan State University
Astrakhan, Tatischev str. 20a, 414056, Russia
krukovae@mail.ru

ABSTRACT
The article discusses energy security issues, which again came to the fore as one of the most important issues that attract the attention of decision makers, energy companies, the financial community and the general public. Uncertainty regarding safe access to reliable energy supplies at reasonable prices is growing. Global energy security is a final global public good, while international global energy security regimes, defined as sets of rules, procedures, and practices for resolving international conflicts and crises on national energy security issues, are intermediate global public goods.
Keywords: *Energy security, globalization, countries of the Caspian region, energy markets*

1. INTRODUCTION

The issues of the energy security concept have been given significant attention in the work of economists and lawyers. However, up to the end of the 20th century, the understanding of energy security was largely linked exclusively with the self-interests of developed countries - consumers of hydrocarbons, and oil and gas producers were put into a deliberately disadvantaged position [10]. President of the Russian Federation V. Putin in his article “Energy Security: The Road to the Future”, dedicated to the G8 summit in St. Petersburg back in 2006, noted that “the new policies of leading countries should be based on an understanding of that fact that globalization of the energy sector is inseparable from energy security [13]. The country's energy security is one of the types of national security provided for by the Russian Constitution, which is a state of protection of the country's economy and population from threats to national security in the energy sector, which ensures compliance with the requirements of the Russian Federation legislation for fuel and energy supply to consumers, as well as export contracts and international obligations of the Russian Federation [5], the subjects of which are - federal public authorities, public authorities of the constituent entities of the Russian Federation, local governments, organizations of the fuel and energy complex and organizations operating in related sectors of the economy, implementing a range of legal, political, organizational, informational, production and other measures aimed at risk management in

areas of energy security and responding to challenges and threats to energy security. Note that modern reality makes energy security the most important factor in globalization and sustainable economic development in the modern world, and the main theoretical models of energy security at the moment are inextricably linked with the more general concept of "national security" and are due to basic factors associated with the presence of own energy resources; their economic availability and proportionality of production and consumption.

2. RUSSIA'S POLICY IN ENSURING GLOBAL ENERGY SECURITY

The current legal regulation contains the definition of energy security in acts of various levels. However, the content of this concept is not uniform. Thus, the Energy Strategy until 2030, approved by order of the Government of the Russian Federation of November 13, 2009 [6], establishes that "energy security" is part of the broader concept of "national security", which, in turn, is understood the state of protection of the individual, society and the state from internal and external threats [7]. In accordance with the definition specified in clause 2. Part 5 of the strategy, energy security - the state of security of the country, its citizens, society, the state and the economy from the negative impact on reliable energy supply. These threats are determined by external (geopolitical, macroeconomic, market) factors, as well as the state and functioning of the country's energy sector [6]. Considering one of the main strategic priorities of state energy policy, differentiation of energy security at the international, national and regional levels is provided. The defining strategic signs of energy security are:

- resource sufficiency, i.e. material potential of a deficit-free energy supply of the national economy and population;
- economic affordability, i.e. the profitability of such collateral with an appropriate pricing environment;
- environmental and technological acceptability, i.e. the possibility of extraction, production and consumption of energy resources within the framework of existing technologies and environmental restrictions at each stage that establish the safety of the functioning of energy facilities.

Obviously, the Russian energy strategy, firstly, does not indicate the need to ensure economically sound external demand for energy carriers, which shows a shift in the focus of energy policy to solving domestic problems, and secondly, it includes an essential condition on environmental and technological feasibility, determining the safety functioning of energy facilities. We draw attention to the fact that energy resources belong to the political tools of almost all modern states. In view of their uneven distribution, two main models of energy policy at the state level are quite clearly visible: traditional and alternative. The first involves the export of resources and the use of the excess profits from the sale of raw materials to solve state problems (Russia, some Arab states, Azerbaijan, Turkmenistan). The second, respectively, is characteristic of countries that do not have significant reserves of natural resources (Western European countries, the USA), which, in turn, determines their state policy aimed at reducing dependence on traditional energy carriers in their economy, increasing environmental standards, and based on new scientific and technical research in the field of development and use of alternative energy sources to achieve energy and geopolitical independence from countries engaged in environmental hydrocarbon port. Energy security at the economic level quite often intertwines with political components and involves maintaining the livelihoods, vital functions of society and the state at an optimal level through a mechanism for optimizing the fuel and energy balance and rational consumption of resources.

3. ENERGY SECURITY OF THE RUSSIAN FEDERATION

Today, fossil fuels such as oil, coal and gas still form the basis of world energy. In the world energy balance, oil accounts for 34%, coal - 30%, gas - 24%, hydropower - 6%, nuclear energy - 5%, renewable energy sources (RES) - 1%. Oil is very important for the prosperity of the nation, as it provides energy for the development of the transport system, industry and the country's defense. The economic security of the Russian Federation largely depends on the export of hydrocarbons. This makes it unstable before exposure to both external and internal factors. One of the external factors can be considered a change in the price of oil, gas or coal in the world market [12].

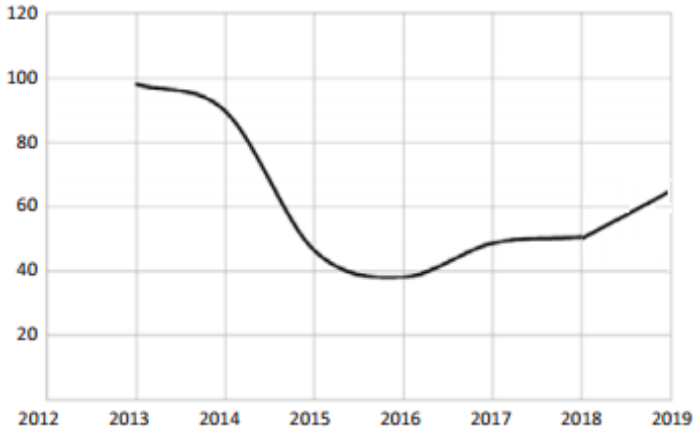

Figure 1: Dynamics of rising oil prices on the world market in the period from 2013 to 2019, USD

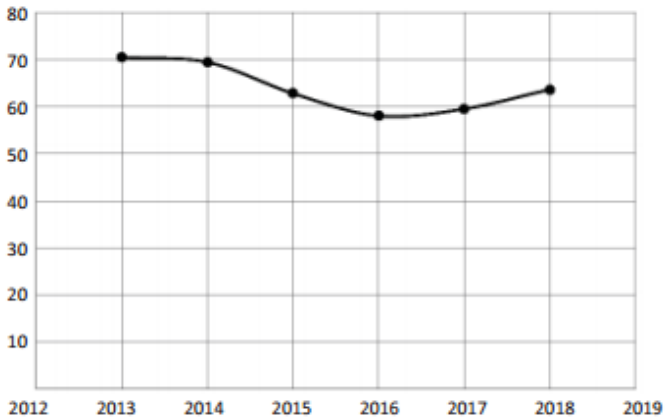

Figure 2: Growth dynamics of the share of hydrocarbons in the commodity structure of Russian exports in the period from 2013 to 2018,%

An analysis of the growth dynamics of hydrocarbon raw materials in the commodity structure of exports of the Russian Federation showed that since 2003 this product has been at least 50% of the commodity structure of exports of the Russian Federation [14]. From 2013 to 2016, the share of hydrocarbons in the export of the Russian Federation is reduced, and after 2016 it is growing again, which directly correlates with changes in prices for this product (specifically, oil) in the world market. The world still uses traditional sources of energy - coal, gas and, to a greater extent, oil [16]. Together, they make up more than 80% of the world's fuel and energy complex. However, the energy security of countries that use exclusively traditional energy sources is endangered in the long run given current trends in the development of alternative energy.

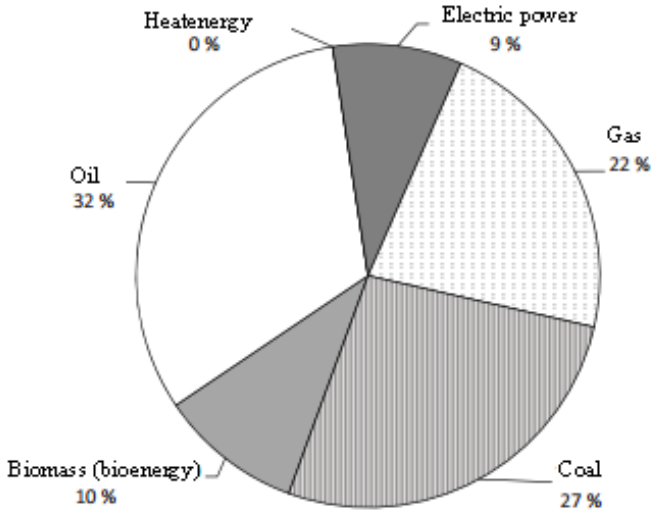

Figure 3: Global Energy Consumption Structure for 2018

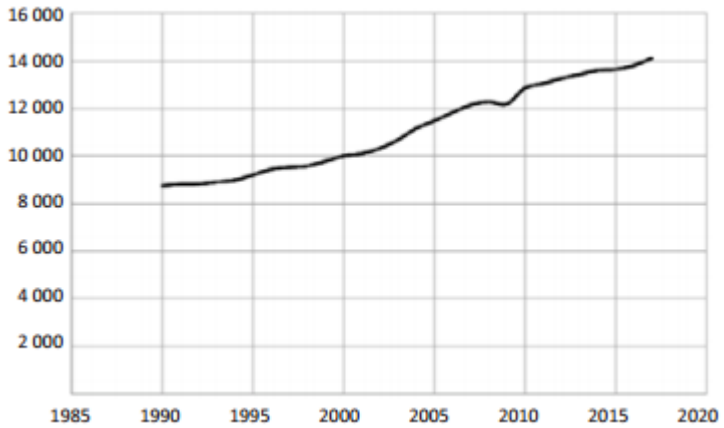

Figure 4: Dynamics of growth in energy consumption in the world from 1990 to 2018, Mtoe (Million tons of oil equivalent - million tons of oil equivalent)

Energy consumption in the world has been growing for a long period, the dynamics of growth is shown in Figure 4, and the natural reserves of oil and gas are running out [16]. A quarter of the world's proven gas reserves is located on the territory of Russia (Figure 5), and the Russian Federation is also in the top ten countries with the largest proven oil reserves (Figure 6) [15]. It is also worth noting that about 14% of the world's coal reserves are concentrated in the Russian Federation (Figure 7) [17]. However, taking into account the global trend towards an increase in energy consumption, developed countries are striving for the development of alternative energy. The growth in energy consumption is mainly observed just in developed countries - the world economic leader, China is the leader in energy consumption in 2017 (Figure 8) [16]. Despite the fact that China is a trading partner of Russia, the Russian Federation cannot count on an increase in the export of hydrocarbons to China. This is due to the fact that not only the economy, but also the energy sector in China is undergoing qualitative changes. In 2010, China invested about 50 billion US dollars in the development of alternative energy, which is a quarter of the global investment in this industry over that period. Now China is developing global international projects to solve the global energy problem, and China also produces solar panels for domestic use and export to countries such as the USA, Germany and Japan [3].

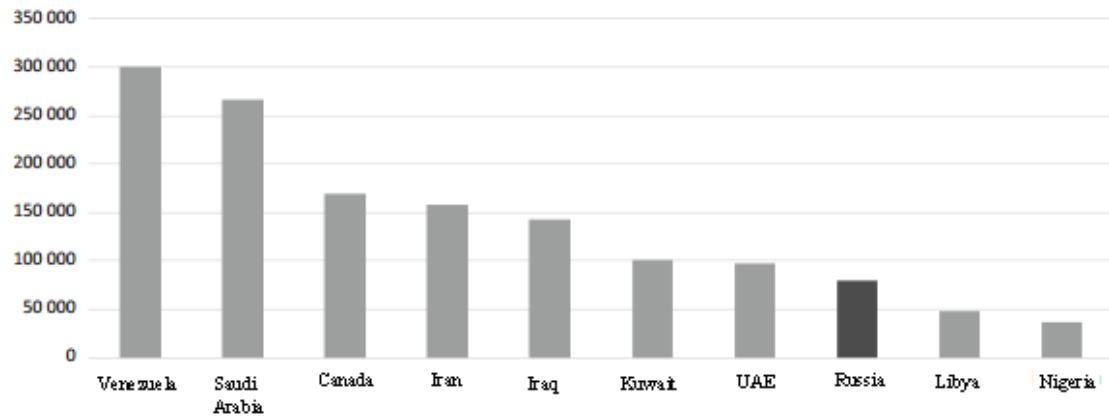

Figure 5: Proven global oil reserves for 2018, million barrels

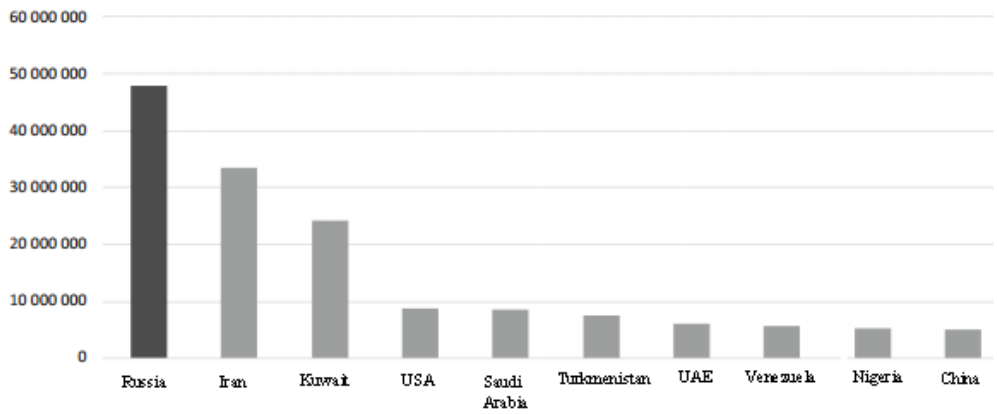

Figure 6: Proven global gas reserves for 2018, mln m3

Thus, the Russian economy cannot develop in the long run with the expectation of an increase in the export of hydrocarbons; there is a need for qualitative changes in the fuel and energy complex. Despite the relatively small percentages in the global energy sector, there is still a tendency for stable long-term growth in electricity consumption in the world (Figure 9) [16]. Many TNCs (transnational corporations), such as Total S.A., ExxonMobil Corporation, RDShell, are now investing in the development of alternative energy. In fig. 10 reflects in which areas international companies are already working: mainly wind energy, CO2 capture and biofuels [2].

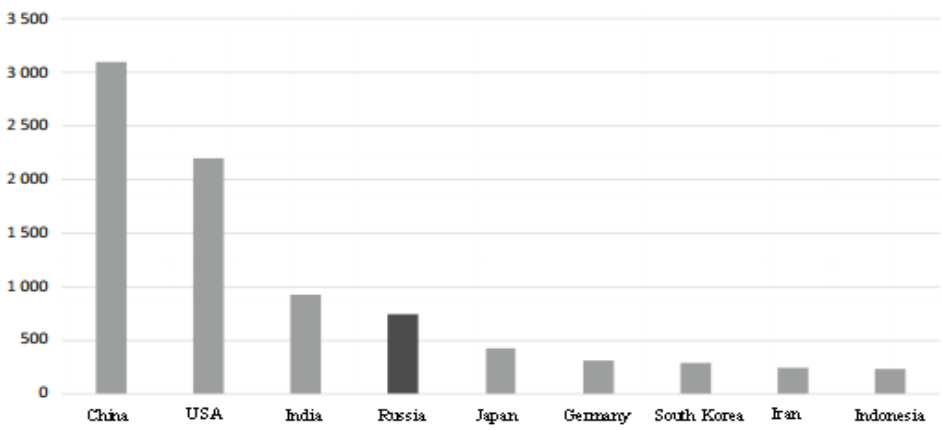

Figure 8: Energy consumption by individual countries in 2018, Mtoe

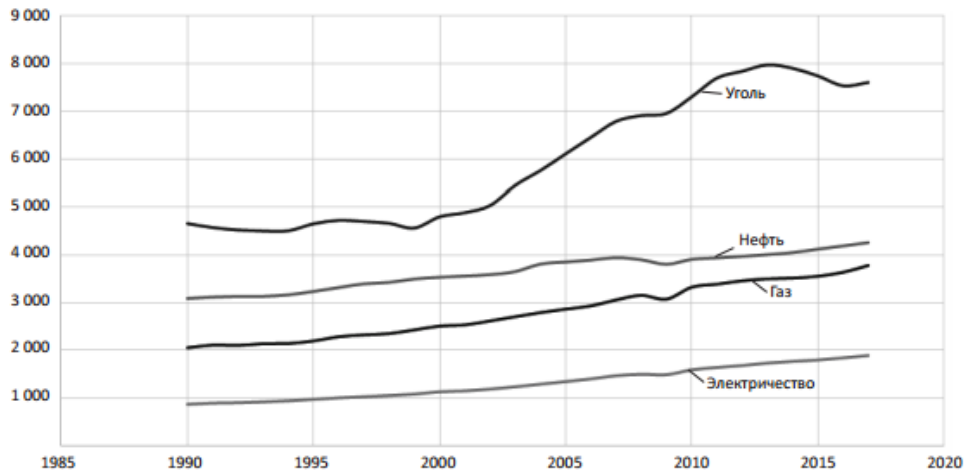

Figure 9: Growth Trends in Consumption of Certain Types of Energy Between 1990 and 2017, Mtoe

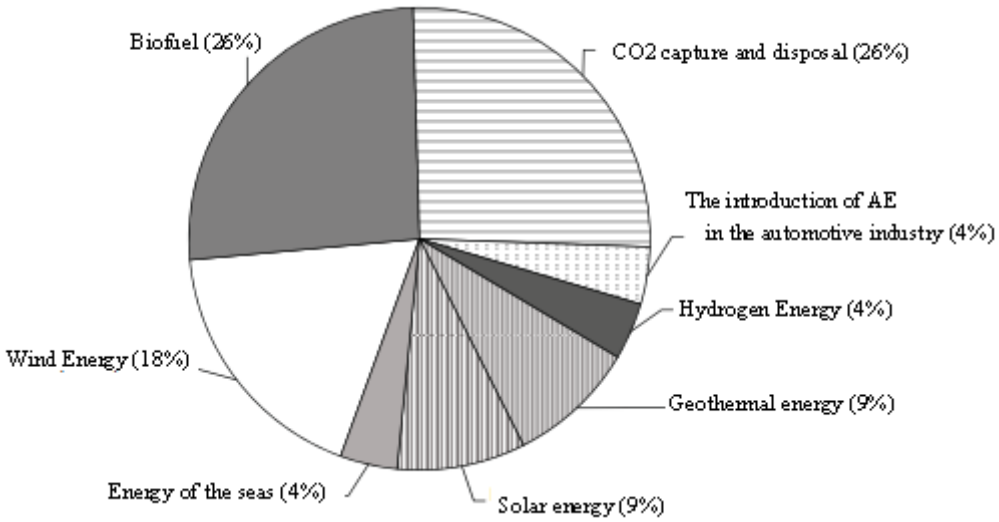

Figure 10: Directions of alternative energy in which TNCs invest in 2017.

4. CHALLENGES AND RISKS

Ensuring energy security for our country has the highest priority. The decree of the President of the Russian Federation, approving the Doctrine of Energy Security of the Russian Federation, adopted in May 2019, is aimed at creating a system of official views and measures to ensure energy security, which is an integral part of the system of ensuring national security of the state. The doctrine is a strategic planning document in the field of ensuring the national security of the Russian Federation. The doctrine of energy security in the near future will be the basis for the development of the fuel and energy complex and the adoption of a number of regulatory legal acts. Energy security in many manifestations has a sharp interconnected environmental, economic, social and political nature for Russia. A particularly close relationship between energy security can be traced to environmental safety. In the extraction of energy resources there is a constant interaction with nature. The basis of the modern fuel and energy complex are such natural resources as oil, natural gas and coal, which, according to the generally recognized classification, are exhaustible (irreplaceable). This implies the need to create such a legal mechanism that would ensure their rational use for the long term. Also, the extraction, transportation and processing of energy resources are accompanied by a variety of harmful effects on the state of nature, especially its pollution.

According to the data provided in the Energy Strategy of the Russian Federation until 2030, the Russian energy sector is one of the main sources of environmental pollution. It accounts for more than 50% of pollutant emissions into the atmosphere and more than 20% of polluted wastewater discharges to surface water bodies, as well as more than 70% of the total greenhouse gas emissions in the Russian Federation. Ensuring the environmental safety of the energy sector of the Russian Federation minimizes the negative impact of production, production, transportation and consumption of energy resources on the environment and climate. Over the years of the implementation of the Energy Strategy of the Russian Federation for the period until 2020, significant progress has been achieved in the field of increasing the environmental safety of the energy sector. A number of environmental requirements in the field of subsoil use were tightened, measures were taken for the efficient use of associated petroleum gas, and a system of state environmental review of investment projects in the energy sector was created. At the same time, a number of problems remain, such as, for example, the lack of a regulatory framework for access to gas pipelines for producers of dry stripped gas, the lack of economic incentive mechanisms for enterprises to efficiently dispose of waste from the energy sector and reclamation of disturbed lands. The main goal of the state energy policy in the field of environmental safety of the energy sector is to gradually limit the load of the fuel and energy complex on the environment and climate by reducing emissions (discharges) of pollutants into the environment, as well as greenhouse gas emissions, and reducing the generation of consumption and production waste. Note that current energy policies do not stimulate the process of developing energy-saving technologies. The Russian energy balance is highly skewed towards gas consumption. To use gas only as fuel is not reasonable. Its efficiency is 10 times lower than when used in the chemical and metallurgical industries. In this regard, in the energy sector it is necessary to use renewable resources, which, first of all, include nuclear fuel. The new nuclear policy is based on the use of closed-cycle fast-neutron reactors, which ensures the reliability and environmental safety of energy conservation. Of great importance in matters of energy conservation is also the use of non-traditional, environmentally friendly sources of energy: wind, sun, geothermal waters. Using the potential of wind energy by only 30% allows you to generate an additional over 3,000 billion kilowatt-hours of electricity. The solution of the tasks set is possible only with the rational participation of the state and its interaction with business. Building partnerships in the Russian energy sector between the state and business should be based on urgent problems and take into account the specific conditions for their solution. Solving problems associated with the development and improvement of the fuel and energy complex together with the state and its interaction with business will play a big role not only in the country's economy, but also in its geopolitics and in solving social problems. Thus, energy security has emerged as an independent important type of national security, without which careful attention is not possible to create stability.

5. CONCLUSION

In the current situation, when the internal political pressure on the governments of consumer states is increasing due to the growing need to meet the growing national demand for energy resources, the likelihood of these governments making insufficiently prepared decisions is growing. The intensification of the international actions of these states to satisfy domestic energy demand can increase competition between them.

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ABOUT SOME ASPECTS AND FEATURES OF FORMATION OF THE DOMESTIC MARKET OF MERGERS AND ABSORPTIONS

Kogan Marina
Astrakhan State University, Astrakhan, Russia
koganpmiop@mail.ru

Svetlana Mammadova
Azerbaijan State University of Economics, Azerbaijan
svetlana_mammadova@ unec.edu.az

Lala Hamidova
Azerbaijan State University of Economics, Azerbaijan
lala_hamidova@unec.edu.az

Leman Kashiyeva
Azerbaijan State University of Economics, Azerbaijan
lemankashiyeva@gmail.com

ABSTRACT
The article briefly presents the prerequisites for the formation and development of the modern market of mergers and acquisitions, as well as features, reasons and the need for integration transactions. The relationship of the market with the processes of development of the national economy, its impact on the formation of the image of corporations and the country are considered. Attention is paid to the classification of goals toward which modern corporations are oriented in the process of implementing integration transactions. The directions of integration processes in domestic and foreign companies are compared. Based on open statistical sources, an analysis of the dynamics of the domestic market of mergers and acquisitions over the past four years is carried out, the interests of state and private investors are reflected; a sectoral breakdown of transactions carried out during the study period is presented, the largest market players are noted, conclusions are made about the importance of the market in the development of society. Particular attention is paid to the role of the state in the development of the mergers and acquisitions market in modern conditions.
Keywords: *horizontal and vertical integration, motivation of integration processes, the market of mergers and acquisitions, the theory of mergers and acquisitions*

1. INTRODUCTION

Scientific and technological progress and the current level of communication, growing processes of international integration and liberalization of markets: all these factors inevitably lead to changes in the competitive environment and, accordingly, to the response from firms and companies in the form of diversification and reorganization processes through mergers and acquisitions including. Business reorganization through mergers and acquisitions has a significant impact on the continued functioning and development of not only the company itself, but the entire industry. Thus, mergers and acquisitions are an important strategic factor in the successful development of companies and industries in modern conditions. The intensification of mergers and acquisitions, in turn, significantly affects not only market players, but also at all levels of the national economy. At the same time, in the process of mergers and acquisitions, the number and volume of transactions grow, as well as their complexity. It should be noted that the four peaks of mergers and acquisitions (starting from the end of the nineteenth century) historically occurred during periods of structural political and economic transformations,

industrial crises, and technological revolutions. In such conditions, companies, in an effort to achieve their own goals and guided by certain motives, participated in mergers and acquisitions.

2. BASIC GOALS MOTIVATING THE COMPANY FOR CARRYING OUT TRANSACTIONS BY MERGERS AND ACQUISITIONS

In the totality of the set of factors that motivate firms to mergers and acquisitions, it is customary to single out several of the following blocks:

1) The strategic goals of enterprises (protective, investment, informational, synergetic effects, management optimization, tax bonuses, the ratio of the company's market price to its replacement cost).
2) Corporate goals (a compromise between the owners and managers of the company). It should be noted that individual shareholders, pursuing their interests, can use mergers and acquisitions to create partnerships or attract a certain investor in their company, or to separate part of the business into a separate business unit or company.
3) Goals at the level of the functional areas of the enterprise.

2.1. The main factors inducing corporations to carry out acquisitions and sales

In this regard, it is necessary to note the “theory of pride”, popular since the late eighties of the twentieth century, relating the doubtfulness and groundlessness of some investment projects to the excessive ambitiousness and riskiness (“pride”) of individual company leaders, who believe that they assess the potential value of the organization better, “More correct” than the market and therefore are confident that in the event of a takeover / merger, the new owners will increase the market value of the company. In accordance with the theory of mergers and acquisitions of Jensen (Theory Agency, 1986), the Management Corporation is the agents of its owners (shareholders), relations between agents should lead to conflict situations, for example, when paying dividends when financial resources companies are shrinking, which negatively affects the effectiveness of their management. Conversely, project financing may be associated with a decrease in probabilities [1].

2.1.1. Operating Synergy Factors

In this case, the complementarity of resources is assumed, for example, due to the possibility of operational synergy, which may be the result of the influence of one of the following factors: [3].

- Saving available costs (agglomeration effect). The new corporation takes advantage of, for example, saving transaction costs. Thus, empirical evidence confirms that the rate of cost reduction per unit of production is 12% for automotive companies, 20% for metallurgical and aircraft manufacturing companies, and 40% for corporations specializing in semiconductor manufacturing.
- The economics of the costs of research and development, when the buyer company employs personnel and research centers to develop and bring promising new products to the market.
- The effect of combining complementary resources. Often this brings together small and large companies that satisfy the interests of both those and others, since one (small) gets access to financial resources that can be obtained from other companies.
- An increase in size within the corporation niche (hypothesis of an increase in the monopolistic power of the corporation).

The acquisition of most of the market through horizontal or vertical exchange, in which the buying corporation operates, should be beneficial only for the new corporation. That is why in many countries of the world there is a struggle against mergers that "restrict competition."

2.1.2. The relationship of mergers and acquisitions of corporations with the changing image of the company and the state

In this case, of course, it is necessary to note the Japanese experience in conducting mergers and acquisitions. In Japan, the interests of representatives of business structures and authorities coincide in the desire to ensure the strengthening of competitiveness and, consequently, the image of the country and the national economy in world markets. This explains some of the soft-liberal attitude of the state towards such transactions involving cartels. Moreover, the empirically confirmed fact is that it was the corporations, the activities of which, in fact, which can be described as monopolistic, largely ensured the country's economic success. Further, in an effort to ensure the achievement of functional goals through mergers and acquisitions, the following should also be noted: enterprises, the initiative of which comes from the logistics sector, can be aimed at jointly purchasing advanced companies in the market with strong suppliers and, therefore, achieving more favorable conditions (deliveries, payments, deadlines). Also, as a result of joint purchases of large volumes of goods to achieve favorable purchase prices for consolidated companies (price reduction for a large buyer). For example, the creation of purchasing cooperatives, associations of wholesale and retail enterprises, purchasing groups, etc. Along with the desire to achieve favorable purchase prices, the motivation for combining industrial enterprises with extractive industry enterprises may be to reduce risk through a reliable supply of raw materials in both qualitative and quantitative terms [4].

3. DYNAMICS OF DEVELOPMENT OF FOREIGN AND DOMESTIC MARKET OF MERGERS AND ACQUISITIONS

The analysis shows that in countries with developed competition, highly concentrated industries, integration processes show the focus of companies on achieving strategic and corporate goals. At the same time, horizontally integrating transactions are predominantly common in industrialized countries, when mergers occur within the boundaries of a high concentration of industries, which also reduces competitive activity. However, the state policy of most of them is aimed at supporting domestic producers, despite the fact that such circumstances can adversely affect the quality of products and production efficiency in general. It should be noted that the slowdown in the global economy inevitably affects the development of the mergers and acquisitions market. Companies are reluctant to invest in existing assets and are looking for ways to optimize revenue through acquisitions. At the same time, over the past years, the sectoral focus of mergers and acquisitions among private investors has not changed much (see Figure 1). The interest of Western private investors, including large international corporations, is enjoyed by the technology industry, then the financial sector and the oil and gas industry, which is due to the features of the current stage of development of the world economy [4].

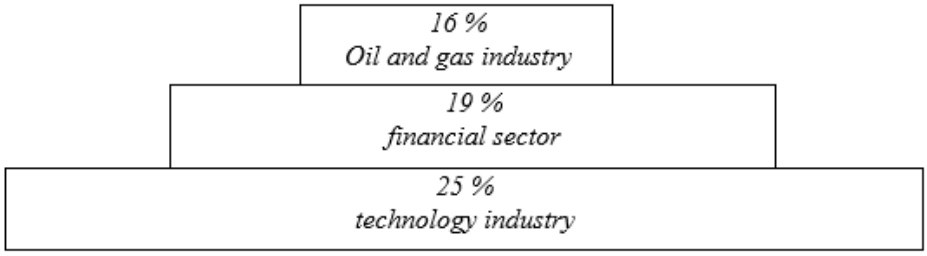

Figure 1: Leading industry transactions among private investors

At present, some industries are forming in Russia - oil, iron and steel, pulp and paper industry, cellular communications, etc. The role of the legislative framework, as well as the attitude of public authorities to similar processes.

According to statistics from the M&A Markets bulletin, AK & M News Agency in 2016, the number of M&A transactions involving Russian companies showed an increase of 1.1%, against a ten percent decline in 2015, but the transaction value was one of the worst since 2010. In 2019, 422 M&A transactions took place with the participation of domestic companies, which is 26% higher than the level of 2018, but lower than the level of 2017. By the total transaction value of 2019 31.8% higher than 2018. It should be noted that in 2019. level of sales in the domestic market. Major transactions (worth over 1 billion US dollars) in 2019. 13 were conducted (in 2018, there were 8 operations). Here are specifically indicated:

- the merger of the oil and gas companies Wintershall (BASF, Germany) and Dea Deutsche Erdoel (M. Friedman, Russia) for an estimated 7.18 billion UAH. US dollars.
- Sale of a subsidiary bank in Turkey to Denizbank (Sberbank of Russia, Russia) to Emirates NBD for 5 billion rubles. US dollars
- the acquisition by the Blackstone investment fund (USA) of 99% in MagicLab, owned by one of the available Badoo dating services, from Andrey Andreev and Finam, for 3 billion UAH. US dollars.

At the same time, prices for domestic companies reached a low level, and the average cost fell by 14 percent (about 56.5 million US dollars) to the level of 2018 (65.7 million US dollars)
It should also be noted a decrease in the activity of Russian companies in relation to some domestic firms. The level of cross-border transactions of domestic companies has sharply decreased compared to 2018, mainly due to the depreciation of the Russian ruble. In addition, factors such as:

- Preserved high level of bankruptcies of construction, industrial companies, food industry and trade enterprises. Valuation of property of bankrupt companies for sale is reduced;
- reduction in consumer demand, which contradicts the report on the growth of household incomes, but this indicates that the development of trade and the service sector to the food industry is not limited.

Against the backdrop of a record number of transactions involving the state (12% of the total) in 2019. 51 transactions totaling nearly $ 13 billion were recorded. US dollars. Compared to 2018. State-owned companies formed 23.2% of the M&A market. But here, the deal to consolidate Rostelecom 100% of T2 RTK Holding LLC (Tele2) with an estimated value of 2.04 billion rubles should be especially noted. At the same time, the average value of transactions involving state-owned companies decreased 1.7 times to 253.8 million US dollars. In the context of industry, if mergers and acquisitions are to be concluded in 2016, among others, there was construction and development, that is, in 2019 the fuel and energy complex began (see Table 1). The number of transactions here increased by 53.9% compared to 2018 (20 transactions), and the total value increased 13 times to 12.85 billion UAH. US dollars from 3.774 billion US dollars. Wintershall, owned by the German concern BASF and Dea Deutsche Erdoel, according to Mikhail Friedman, is estimated at $ 7.18 billion. US dollars. Among the five main transactions in this industry: the acquisition of Sokar Energoresurs (Azerbaijani SOCAR - 60%, Sberbank - 40%), eighty percent of the shares of Antipinsky oil refinery. , Estimated transaction value - 2.32 billion UAH. US dollars

Table following on the next page

Industry	**2016**	**2017**	**2018**	**2019**	**2019/2016**
Fuel and energy complex	3,6	29,4	1,2	23,0	+19,4
Financial sector	7,0	16,6	15,3	14,2	+7,2
IT	10	1,2	8,7	12,1	+2,1
Construction and development	26,6	7,3	21,1	10,9	-15,7
Transport	13,2	0,9	9,9	7,0	-3,2
Trade	11	10,9	13,9	-	-11
Other	28,6	33,7	29,9	32,8	+4,2

Table 1: The proportion of transactions in the Russian M & A market, in 2016-2019,%

Financial institutions ranked second in industries (15 transactions worth $ 7.9 billion (14.2% of the market). It is also worth noting that the Central Bank of Russia acquired 99.99% of Moscow Industrial Bank shares for $ 2.03 billion USA to prevent bankruptcy. The number of transactions increased by 46.2% (38 transactions with a major transaction of the year in the industry), where transactions totaling $ 6.74 billion (12.1% of the market) were conducted. and all other transactions in 2019 - the acquisition of 99% by the Blackstone American investment fund in MagicLab, which belongs to one of the Badoo dating services, Andrei Andreev and Finam, valued at $ 3 billion, which was also higher. Fourth place - construction and development (10.9% of the market). Here, despite a decrease in the total cost, by 32% compared to 2018, their number increased from 92 to 159. The most significant acquisition for the year was the acquisition of Stroyinvestholding (a subsidiary of Gazprom) - 100% of Stroygazmontazh (one of Gazprom contractors) in the amount of 1.17 billion US dollars. Fifth place is the transport sector with 22 transactions worth 3.91 billion rubles. US dollars, (7% of the market). A particularly large transaction is the sale of fifty percent of TransContainer for 941 million rubles. US dollars. In this case, it is necessary to take into account transactions in the field of transport and information technology, as well as falling prices in areas such as construction, trade and agriculture (competition, an increase in the number of bankruptcies). Thus, the analysis shows that despite the growth of the domestic market in 2019, the number of transactions is even lower than the level of 2017. At the same time, sales volumes of Russian assets abroad rose sharply. The persistence of a high bankruptcy trend in the main sectors (trade, construction, services, food processing) reduces the prices of Russian companies. Acquisition of foreign assets by domestic companies. The largest deals are conducted on fuel and energy complexes. Market monitoring throughout the history of monitoring the market for mergers and acquisitions. World experience shows that the desire to weaken the activity of major players and the strengthening role of public companies and large players affiliated with state structures represents an opportunity to develop competition in the country, which, in turn, negatively affects the development of the domestic market and national economy. It should also be noted that the modern domestic market is characterized by the presence of problems, including:

- economic instability of Russian companies in the context of devaluation of the national currency, lower oil prices, low growth rates of the national economy, prompting the postponement of major transactions;
- lack of stability in the market of mergers and acquisitions;
- a high degree of dependence on large transactions; primary focus on domestic transactions instead of international ones;
- reduction in the ability to attract borrowed funds to finance M&A transactions, which leads to increased risks in lending to Russian companies and a corresponding tightening of approach to lenders;
- low incomes, growth in consumer demand;

- the emergence of a conflict between Ukraine, the sanctions regime against Russia, the threat of the spread of coronavirus creates additional risks not only for planned, but also for already completed transactions in terms of their economic efficiency;
- a practical absence in the regions in which investment banks operate successfully;
- shifting the interests of investors from the real sector of the economy to the infrastructure of the industry, such as development, communications, finance, etc.
- the propensity of Russian business to form vertically integrated structures, while in the world market horizontal and conglomerate associations are preferred;
- use as a basic tool of business destruction, and not value creation;
- lack of a positive image of Russian companies.

It should also be noted that modern processes of transnational activity of capital contribute to the active development of services and production. Obviously, this is one of the reasons for their absorption by large foreign companies.

4. CONCLUSION

Thus, we can assume that in order to stabilize and increase the activity of the domestic M&A market, which is one of the indicators of the state of the national economy, the following possible directions may be appropriate:

1) Adapting the experience of mergers and acquisitions of developed countries to Russian conditions, especially when conducting operations on the foreign market and attracting foreign investment in the national economy.
2) Development and implementation of integrated strategies for mergers and acquisitions at the planning stage of integration changes by companies. World experience shows that in practice about half of the implemented mergers and acquisitions do not live up to expectations, they break up within the first three years, and about sixty percent of transactions do not pay back the funds invested in them. Accordingly, it is constant monitoring of the market and careful planning of proposed transactions that will help increase the efficiency of their development, increase the chances of obtaining economic returns in the short term.
3) Formation of an understandable and unambiguous legal mechanism for state regulation of the mergers and acquisitions market, including all stages of the transaction and execution of the transaction, from the moment of its preparation to the immediate stage of integration of companies, including.
4) Stimulation of investments in the real sector of the economy, in processing, high-tech industries.

ACKNOWLEDGEMENT: *These measures can help improve the Russian market of mergers and acquisitions, improve its quality, which will positively affect not only the image of domestic companies, but the whole country, as mergers and acquisitions of corporations are one of the proven and effective options for reorganizing the company in modern conditions, which affects not only each of the parties to the transaction, but also the national economy as a whole.*

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REGIONAL DIFFERENCES IN THE WAGES OF AGRICULTURAL WORKERS AND THEIR REGULATION

Mirzabayova Mehriban Samaddin
Charter of "Regulation of the economy",
Azerbaijan State Economic University (UNEC), Azerbaijan
p.nazrin@mail.ru

ABSTRACT
The purpose of the article is to identify factors affecting the wages of agricultural workers, the relationship between the income of agricultural enterprises and the wages of its workers. The article discusses reforms in the agricultural sector and the necessary changes. Reforms in the country have led to fundamental changes in the economy and dynamic economic development. Appropriate measures were taken to ensure the economic development of the regions, to further improve the welfare and standard of living of the population, and to develop the country's economy, especially the agricultural sector. It analyzes the performance of agricultural enterprises, the degree of productivity, the relationship between net profit and wages. The article identifies regional differences in wages, shortcomings that arose in the process of wage management. This study describes ways to increase productivity, combining the goals of reducing costs and maximizing profits in the agricultural sector of Azerbaijan. The main objectives of the research are to identify ways to optimize income, increase the productivity of agricultural workers, which in the end will serve the development of the agricultural sector. Considering the differences in wages at the regional level, the author identifies the causes and suggests ways to eliminate deviations. In the article, the author uses statistical data for comparison, analysis, generalization. The grouping method is used. As a result of the study, recommendations are made for raising wages in agriculture.
Keywords: *Agricultural Sector, Factors, Reforms, Wages, Incomes*

1. INTRODUCTION

Some economists, both before and now, who have taken advantage of the apparent form of wages in the form of the price of labor, have tried to describe it not only as the labor force, but also as a full wage, while revealing its true nature. K.Marx scientifically proved that wages are seen only at first glance as "the price" or "value" of labor, but in reality they are a veiled form of the value of labor and the price of labor. Unlike K.Marx, Ricardo limited the level of wages to the cost of living that could provide for them and their families. Ricardo points out that excessive wage reductions reduce the birth rate, increase the demand for labor, and automatically raise wages to "natural levels." By "natural level" he meant the subsistence minimum. The "regulation" of the level of wages in this order, in a limited framework, is also reflected in the concepts of "salary fund", "decreasing (fading) productivity" of S. Mill, M. Kullokhin, A. Marshall, S. Clark and others. Y.B Sey's theory of income related to factors of production (labor that creates wages, land that generates rent and capital that generates profit) and the concept of the residual principle of wages of some economists (after deduction of rent, taxes, social contributions, interest, profits) became widespread. Surprisingly, these concepts, which emerged after 1860, are still in vogue in Western literature. A. Marshall and S.Clark show that the main factors of production are subject to the law of "declining and decreasing productivity." According to this law, with the additional growth of additional labor, the productivity of labor decreases over a period of time (provided that the amount of capital does not change) compared to the previous period and is subject to an increase in wages. However, a number of additions have been made to classical theories in modern times. Thus, the concept of "marginal productivity" is defined by modern marginalists as institutional factors, collective

agreements, psychological factors, perfect competition, absolute monopoly, monopoly prices, oligopoly, monopoly (market situations) and so on. considered in terms of. In many cases, "marginal productivity" is replaced by the concept of "marginal revenue" and is organically linked to the firm's competitiveness, product sales, and most importantly, price stability. The real goal of both classical and neoclassical Western theories is to prove that wages are the value of labor or labor services, not labor. There are upper and lower limits on the value of labor. The lower limit of the cost of labor is determined by the physical needs of the employee, ie the cost of living, which is extremely necessary for the maintenance and restoration of his daily working capacity. Lassalle's idea of an "iron wage law" served to justify workers' bankruptcy. The upper limit of the labor force includes not only the minimum physiological needs of the worker and his family, but also the value of material and moral means in connection with the needs arising from specific social and historical conditions. Other economists, such as T. Malthus, I. Bentani and others, explained the means of subsistence by the theory of a minimum "working capital". According to the social theory of wages, wages are determined not only by labor productivity, but also by the ratio of social forces. The higher the productivity of labor and the social force of workers, the higher the wage. Statistics show that wages are growing much weaker than labor productivity. The theory of regulated capitalism put forward by C.M. Keynes and others applies to wages. In a market economy, wage regulation is intensifying. Regulatory measures implemented through the state wage policy can include: determination of the minimum wage, wage indexation, etc. One of the problems is the relationship and ratio between price and salary. Many Western economists rightly point out that the cause of inflation is the spontaneous determination of the relationship between prices and wages. Even here, free competition is considered abnormal. Recently, proponents of the concept of "cost inflation" say that the main reason for this inflation is that the increase in wages has led to an increase in prices. Thus, according to the "wage-price" spiral training, a consistent and rapid increase in wages increases production costs, which forces firms to increase product prices in order not to reduce profits. Just as the level of wages varies depending on the level of economic development of different countries, the policy pursued in the field of wages is quite different. Thus, in some countries the minimum wage is set. In some countries, the minimum wage is determined by the joint participation of entrepreneurs, employees and representatives of trade unions. The Republic of Azerbaijan has adopted codes on water, forests and land, and state programs on socio-economic development of the regions for 2004-2008, 2009-2013, 2014-2018, and 2019-2023. In the Republic of Azerbaijan, the successful implementation of the important socio-economic tasks set for our country in the state programs for poverty reduction and economic development has continued. Thus, the law on employment in the country has been repeatedly improved and updated, the Constitution of the Republic has established the labor rights of each person, measures have been taken to create labor exchanges, register the unemployed and electronic employment system. The experience of foreign countries in regulating the labor market and wages has been constantly studied and their methodology has been used.

2. PROBLEMS OF ENSURING EFFICIENCY IN AGRICULTURE

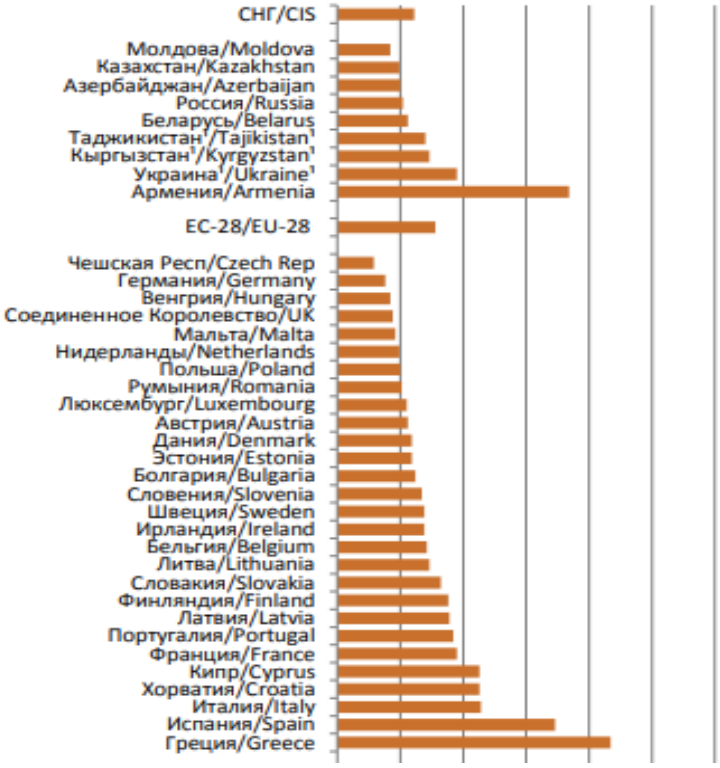
Azerbaijan, that integrates into the world economy, needs to study the existing agricultural sector and identify problems, increase the level of self-sufficiency of the country's population in necessary products, increase foreign trade-related export operations, improve the quality of local products, increase labor productivity, etc. positions such as. Economic reforms in the country have also affected the agricultural sector. The development of various forms of property and economic activity is the result of ongoing reforms. At present, in accordance with the Strategic Road Map, the specialization of the regions in agriculture in Azerbaijan is based on the differentiation of economic conditions. That is, the requirements of each region in terms of plant varieties and animal breeds are analyzed in terms of economic and geographical

conditions of that region and are taken into account in determining the efficiency of production and production. Another issue of ensuring development in agriculture is to ensure efficiency in agriculture. Efficiency is mainly the reduction of production costs, reduction of losses and improvement of product quality by taking as a quantitative ratio of the cost incurred as a result of reflecting the quality of production. Economic efficiency in agriculture is influenced by many factors, ie natural, technical-technological, organizational, social, economic and political factors. These factors interact and depend on each other and affect the development of production in general. The degree of impact of these factors on agriculture varies and plays an important role in the formation of the sector.

2.1. Level of Employment in Agriculture

The level of employment in the CIS countries, which is one of the main indicators of socio-demographic statistics, shows that the unemployment rate in Azerbaijan is one of the lowest in the region.

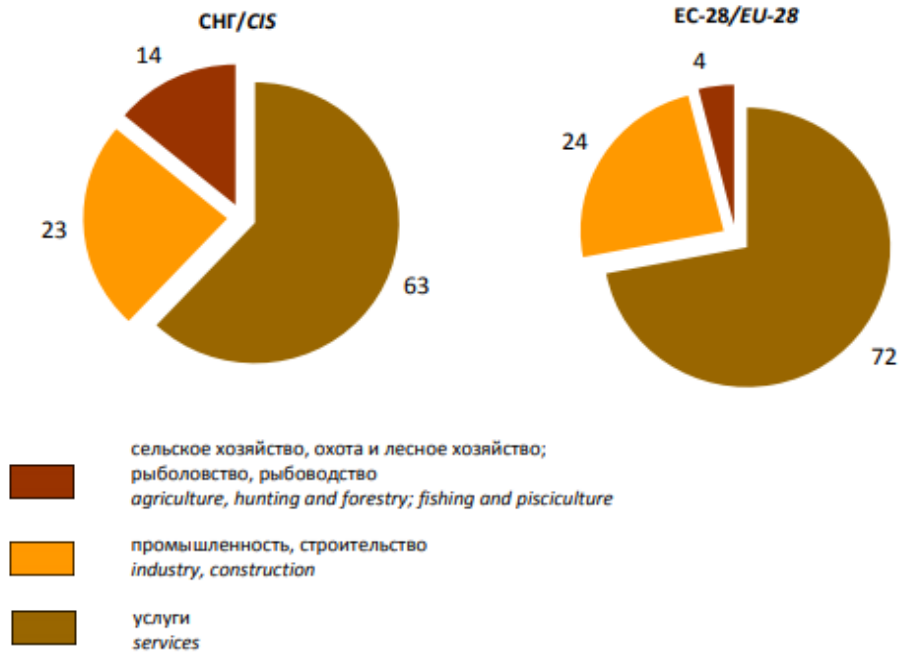
Figure 1: Unemployment rate in the CIS countries and the European Union.



Source: http://www.cisstat.com, 2019

Figure following on the next page

Figure 2: Population in the CIS and EU engaged in agriculture



Source: http://www.cisstat.com/rus, 2019

As we have seen, the majority of the population in both the CIS and the EU is engaged in agriculture. It should be noted that the number of people employed in agriculture in Azerbaijan in 2010 was 38.2% of the total employed population, while in 2018 this figure was 36.3%.

2.2. Labor productıvıty analysıs ın agrıculture

Increasing labor productivity from agricultural productivity indicators is the concept of maximum production with minimum labor consumption. Increased labor productivity leads to large-scale reproduction and economic progress. Entrepreneurship development, the formation of market relations and production efficiency are closely linked with increasing labor productivity. The analysis of labor productivity and average wage growth rates covers the following specific issues: 1) the analysis of the accuracy or miscalculation of these ratios per employee; 2) determination of the degree of deviation of the actual ratios from the ratios determined in the plan and revealing the reasons for this; 3) In order to determine the ratios between labor productivity and average wages, it is necessary to clarify the plan and actual indices of these ratios. It is determined by the formula between these ratios:

$$I_n = \frac{I_{ə.h} - 1}{I_{ə.m} - 1}$$

Here In is the ratio of the index of labor productivity of an employee and the growth rate of the average wage, Iə.h. - index of growth of average salary of one employee. Iə.m - is an index of growth of labor productivity of an employee.

Unit (1) is used as a basis for calculating plan and actual index ratios. This ratio can also be expressed as a percentage. Specific features of agricultural production and increase of labor productivity should be considered as a technical, economic, organizational complex. For example, the application of modern technology in the production of grain, based on modern requirements, leads to a reduction in labor costs compared to conventional technology.

Labor productivity in agriculture is the amount of output produced in return for the labor expended over a period of time. One of the important aspects of increasing labor productivity in agriculture is that agriculture plays the role of raw material for other industries and is also the main source of food supply. But it is necessary to ensure not only an increase in labor productivity, but also a dynamic growth. Thus, this increase should also serve as an optimal increase in incomes of agricultural producers. Necessary aspects of increasing labor productivity are the growth of production, the growth of GDP, the impact on the cost of production, meeting the needs of society and improving living conditions.

Tablet 1: The main economic indicators of agricultural enterprises

Name of indicators	2005	2010	2014	2015	2016	2017	2018
Total number of enterprises, unit	**1782**	**2043**	**1701**	**1659**	**1592**	**1608**	**1641**
Net profit, thousand manats	5892	27658	59028	39763	75246	62815	96917
Average annual number of employees on the farm, thousand people	16,6	17,0	14,7	15,3	15	17	18
Salary fund accrued to them, thousand manats	7219	28076	35816	37071	35970	42795	54978
Labor costs of farm workers (thousand people-days)	4264	3980	3652	3686	3526	4019	4309
Man-days (number) of one able-bodied employee during the year	257	238	248	241	241	236	238
Gross agricultural output (in actual prices for the relevant years), thousand manats	79683	187694	359315	374320	408711	383158	384958
Labor productivity - gross output per employee, manat	4804	11019	24457	24477	27919	22491	21301

Source: https://www.stat.gov.az/source/agriculture/ (12.01.2020)

It is clear from the data in Table 2 that the gross output per employee increased 4.4 times in 13 years, while the number of man-days (number) worked by one able-bodied worker during the year decreased by 19 man-days. However, despite the increase in net profit by 16.4, the salary fund increased only 7.6 times.

2.3. The problem of ıncreasıng wages and reducıng productıon costs

The second indicator of increasing efficiency is the reduction of production costs. Reducing crop costs in agriculture is measured by cost. Measures to reduce the cost of agriculture include increasing productivity in agriculture and livestock, reducing management and service costs, automation (improvement) of production processes, organization of efficient use of production, logistics and financial resources. At the same time, costs should be properly accounted for and excessive costs in production and services should be avoided. Reducing costs by increasing the economic efficiency of production, taking into account the specific characteristics of the production area, the available resources, ie land, machinery, technology, finance, etc. organizes its efficient use. The reduction in the cost of agricultural products plays a major role in strengthening businesses, lowering food prices and increasing incomes. It should be noted that wages, which are an integral part of cost, ie the average monthly wage in agriculture, are still considered low.

Table following on the enxt page

Table 2: Average monthly nominal salary for agriculture, forestry and fishing activities and average monthly nominal salary for employees by economic regions, manat

	2005	2010	2014	2015	2016	2017	2018
Dimensions of the minimum wage established in the republic	30,0	85,0	105,0	105,0	105,0	116,0	130,0
Average monthly nominal salary:	194,1	474,8	621,2	666,8	742,2	785,5	789,1
Baku city (with settlements)	76,6	246,0	366,0	360,9	358,6	384,7	404,2
Absheron economic region	69,7	213,2	287,4	290,6	291,6	303,3	331,2
Ganja-Gazakh economic region	65,3	195,2	253,7	255,4	252,3	258,5	288,3
Sheki-Zagatala economic region	69,3	218,1	273,6	276,2	276,6	287,8	303,8
Lankaran economic region	78,1	231,6	306,5	303,5	303,3	317,1	330,9
Guba-Khachmaz economic region	76,1	213,5	276,1	275,9	271,0	284,6	303,7
Aran economic region	55,8	193,1	244,3	240,8	238,2	241,6	294,6
Upper Karabakh economic region	60,4	225,1	261,8	259,0	249,0	266,2	331,4
Kalbajar-Lachin economic region	67,5	209,3	264,6	269,8	263,5	281,5	306,8
Mountainous Shirvan economic region	77,2	304,7	390,9	399,7	413,1	420,1	433,0
Nakhchivan Autonomous Republic	123,6	331,5	444,5	466,9	499,8	528,5	544,6
Average monthly nominal wage in the economy - total	41,6	160,3	241,3	245,8	253,8	261,5	281,1
Average monthly nominal wage in agriculture, forestry and fisheries	33,7	48,4	54,3	52,6	50,8	49,5	51,6

Source: https://www.stat.gov.az/source/agriculture/ (12.01.2020)

Analysis of the data in Table 1 shows that the average monthly wage in agriculture, forestry and fisheries in 2018 exceeded the minimum wage in the country by 2.1 times, compared to the average monthly wage in the economy. can be half, ie 51.6%. This figure has increased by only 17.9% over 13 years. According to the experience of developed countries and many economists, the minimum wage should be within the value of the consumer basket and only 10% of it. This 10% is intended to cover transportation and other expenses and to drag society into crime. However, despite the fact that the minimum wage increased by about 4.3 times a year from 2003 to 2018, the composition of the consumer basket does not reach the level used in developed countries. This is due to the low level of production in Azerbaijan and the existence of a budget deficit. If we look at the information on the regions, it seems that the advantage is in Nakhchivan, Absheron, Ganja-Gazakh, Guba-Khachmaz. During 2005-2018, the average monthly salary in the regions increased by about 5-6 times.

3. CONCLUSION

Wages should be organized in such a way that they can provide for the personal financial interests of employees. The following basic principles are taken into account when organizing wages: quality and quantity of labor, labor intensity, working conditions, the ratio between labor productivity and wages, equal pay for equal work, the importance of the national economy, the geographical location of enterprises. This means that these requirements must be met when paying employees. Deviation from these principles, both in whole or in part, in the payment of labor can lead to a weakening of the material interests of workers, and thus to a decrease in the efficiency of social production. It is known that wages require the determination of the correct amount of labor for employees. Without this, it is impossible to determine the size of consumption realistically. Therefore, the size of labor and the normalization of labor play an important role in the organization of wages. The failure to change outdated norms in a timely manner and the slow application of advanced technical norms in some cases lead to a breakdown in the relationship between the size of labor and the size of consumption at the enterprise and society levels. This means that when paying for labor, it depends on the working conditions, complexity, productivity, etc. Depending on the situation, certain differences must be made between employees.

Otherwise, equality in the organization of wages can lead to social injustice. However, in modern conditions, low wages in agriculture have led to its weak linking with macro and micro indicators. Wages are also a form of implementation of the requirements of many laws. Therefore, there is a need to differentiate wages according to the characteristics of labor. Such an approach implies that the organization of wages is directly linked to the growth of labor productivity, and on this basis, the individual consumption fund of each employee is determined by the results of labor, the correct coordination of material interests. This means that the law on increasing labor productivity and the requirements of other laws must be taken into account, among other factors, when determining wages.

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SUSTAINABLE GROWTH AND COUNTRY GREEN BRAND: VISUALIZATION AND ANALYSIS OF MAPPING KNOWLEDGE

Naila Akhundova
Azerbaijan State University of Economics (UNEC)
6, Istiqlaliyyat str., Baku, AZ1001, Azerbaijan
naila-akhundova@hotmail.com

Tetyana Pimonenko
Sumy State University
2, Rimsky-Korsakov str., Sumy, 40007, Ukraine
tetyana_pimonenko@econ.sumdu.edu.ua

Yana Us
Sumy State University
2, Rimsky-Korsakov str., Sumy, 40007, Ukraine
y.us@fem.sumdu.edu.ua

ABSTRACT

The current paper deals with the bibliometric analysis of the scientific studies indexed by the Web of Science database on linking sustainable growth and green brand. In the conditions of high competition and increasing issues on sustainable development, the countries should formulate and promote their green brands on the international market. However, a review of online requests indicated the absence of unique definitions to express an environmentally-friendly policy of brands. Internet users could indicate different adjectives as follow as green, eco, environmental, ecological, or sustainable. The primary purpose of this research is to analyze the dynamic of the leading scientific background and visualize the clusters on the investigations of sustainable growth and green brand. In the frame of this paper, the authors analyzed 108 studies selected on the base of the limitations as follows as: published from 2000 to 2019, the keywords of documents – sustainable or sustainability with green, eco, environmental, ecological, or sustainable brand. To achieve the goals of this study, the authors used the Google Trends, Web of Science, and VOSviewer tools. Google Trend tool allowed indicating the most popular definition to promote environmentally-friendly brands. Given that, the finding proved that the definition of «green brand» is the most popular used to promote environmentally-friendly countries' brands. The Web of Science scientific tool enabled analyzing the articles on the base of the quantity, authors, research areas, number of citations, journals, etc. Furthermore, the authors found the increasing interest in investigations on linking between sustainable growth and green brand. In turn, VOSviewer allowed visualizing five main scientific clusters. The first cluster focused on studies in sustainability, the second – green performance, the third – consumption and consumer satisfaction, the fourth – products and green branding, the fifth – corporate social responsibility and sustainable brands. The current bibliometric analysis indicated that the investigation of green brands tightly linked with sustainable growth. The obtained results provided the background for future researchers on promoting green brand of country.

Keywords: *bibliometric analysis, green branding, green promotion, sustainability, environmentally-friendly*

1. INTRODUCTION

In the conditions of high global competition, the countries strive to create a unique national brand to promote themselves on the international market. The country's image influence on its

political, economic capabilities, global status, etc. Given that, the compelling image is an effective strategy of development and strengthening competitiveness. However, building a successful brand needs not only achieving the business goals but solving social and environmental problems. The ecological pollution and reducing natural resources bring high risks as for the business industry, as for the country, in general, that worrying more people around the world. The sustainable development goals accepted to 2030 change the world transforming the market structure by implementing sustainable development into the core of the business, creating innovative products and market niches. Thus, the sustainable development and circular economy is a business model of the future, where responsibility, environmental friendliness and sustainable growth is a new imperative. The countries accept sustainable development strategies promoting themselves as a green brand on the international market. Given that, the more number of scientists and marketers are interested in issues on linking sustainable growth and green brand of country.

2. LITERATURE REVIEW

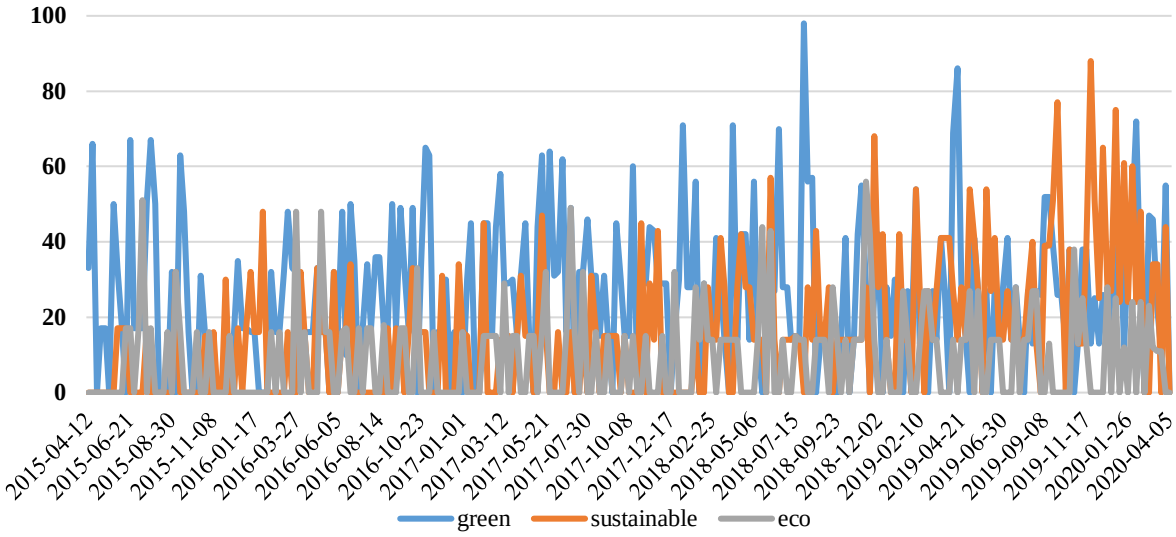
The scientists in the papers [1, 3-5, 32-33, 38, 46, 52, 56] considered the brand as a factor of the macroeconomic stability of the country. They analyzed the main goals and tools to build the power country's brand on the international market. Moreover, the relationship between national companies' brands was compared to the brand of the country. In the scientific paper [37] Mikhnevych, L., Marchenko, V. Hristov, P., and Kuzior, A. provided an analysis of linking between country's image and its economic security. In work [21] the authors considered the national economic competitiveness in the view of the influence of macroeconomic stability and renewable energy on economic growth. In the frame of [57] the green brand was investigated as a component of sustainable development. The authors noted that the level of scientific interest to investigate of green brand had a positive tendency that caused the creation of the schools of scientists investigating the issues on green brands for sustainable development. From the other point of view, the scientists in the papers [13, 18, 22, 25, 29, 31, 34, 58, 59] proved that country's power on the international market depended on the economic, social, and environmental dimensions of sustainable development. Besides, the scientists in the papers [6, 9-11, 14-17, 19, 23-24, 27, 36, 39-40, 41-42, 45, 48, 53, 55, 60, 63] proved the linking between implementing energy-efficient innovations and sustainable development. In turn, the articles [7, 8, 20, 30, 35, 43, 44, 47, 49-51, 54] were devoted to the assessment of green investments as incentive instruments to boost sustainable growth. The present paper aims to analyze the dynamics of the leading scientific background and visualize the clusters on the investigations of sustainable growth and green brand. Given that, 108 studies were selected on the base of the limitations as follows as published from 2000 to 2019, the keywords of documents – sustainable or sustainability with green, eco, environmental, ecological, or sustainable brand. Moreover, to achieve the goal of this study, the Google Trends, Web of Science, and VOSviewer tools were used.

3. RESULTS

Systematization and summarization of scientific sources noted the absence of an unique definition to express the environmentally-friendly policy of the brand. Generally, the consumers associate green brands with the protection of the environment and their health as well as a sustainable business. Moreover, the more consumers are aware of environmental problems, the more they are loyal to green brands. Based on the Google Trends tool, web-search requests of green brand, sustainable brand and eco brand were analyzed. It should be noted that this tool makes it possible to analyze the popularity of web-search requests based on the actual data and broad geography. Furthermore, the Google Trends tool significantly simplifies the investigation process as compared to the traditional approaches.

In terms of the present survey, cover the 5-year period from April 2015 to April 2020 all over the world. Following Figure 1, the highest frequency of web-search requests was green brand (26 on average for period), and sustainable brands (16 on average for period). Thus, obtained results allowed assuming that positioning brand as green is more effective in promoting the environmentally-friendly policy of the company brand.

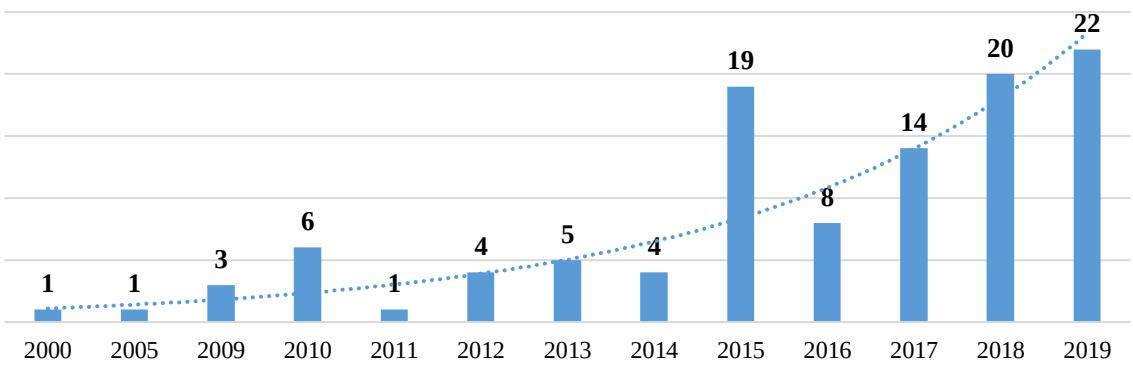
Figure 1: Popularity dynamic of web-search requests from 2015 to 2020



Source: developed by the authors on the base of [12]

The analysis of scientific studies indexed by the Web of Science database allowed identifying 108 articles devoted to the investigations on the sustainable growth and green brand from 2000 to 2019. Under the abovementioned, the research request included different variants of the green brand such as sustainable and environmental, ecological as well as eco brand. Following Figure 2, the start point of significant interest to the investigated issue was in 2015 when the Paris agreement was accepted taken the sustainable goals. It worth emphasizing that the investigations on sustainable growth and green brands have a positive tendency and attract more scientists' attention. However, in the first decade of the XXI century, there are no publications on investigated issues in the Web of Science database. Given that, the increasing number of studies on linking between sustainable growth and green brand is a result of collective intentions in achieving sustainable goals.

Figure 2: Dynamic of publication activity on sustainable growth and green brand



Source: developed by the authors on the base of [61]

The obtained findings proved that the scientists investigated the issues on sustainability and green brand from different research areas, especially: business (57,5%), ecology (17,5%), engineering (15%), science technology (15%), social science (10,8%) and others. Furthermore, five scientific journals were selected based on the number of published documents on sustainable growth and green brand to identify the highly-impact journals on publication activity in the investigated field. It worth noting that chosen journals are high-ranked and fall into the first, second and third quartiles in the specific category. Given that, the undermentioned journals are highly-demanded by the scientific circles:

- Journal of Cleaner Production (Q1);
- Business Strategy and The Environment (Q1);
- Journal of Business Research (Q1);
- Sustainability (Q2);
- Journal of Product and Brand Management (Q3).

Thus, the scientific journal "Journal of Cleaner Production" is the most forceful and accessible to publish studies on sustainable growth and green brand. Following Table 1, three of the most cited articles were published in this journal during the analyzed period from 2000 to 2019.

Table 1: TOP-10 cited articles published from 2000 to 2019

№	Title of the publication	Source title	Year of publication	Number of citations
1	Towards an identity-based brand equity model	Journal of Business Research	2007	93
2	Pressure analysis for green supply chain management implementation in Indian industries using analytic hierarchy process	International Journal of Production Research	2014	88
3	"When experience matters": building and measuring hotel brand equity The customers' perspective	International Journal of Contemporary Hospitality Management	2010	68
4	Is Eco-Friendly Unmanly? The Green-Feminine Stereotype and Its Effect on Sustainable Consumption	Journal of Consumer Research	2016	67
5	Brand misconduct: Consequences on consumer-brand relationships	Journal of Business Research	2010	61
6	"Green Marketing": An analysis of definitions, strategy steps, and tools through a systematic review of the literature	Journal of Cleaner Production	2017	56
7	Sustainable and responsible supply chain governance: challenges and opportunities	Journal of Cleaner Production	2015	50
8	Investigating the Antecedents of Green Brand Equity: A Sustainable Development Perspective	Corporate Social Responsibility and Environmental Management	2012	43
9	Investigating the Types of Value and Cost of Green Brands: Proposition of a Conceptual Framework	Journal of Business Ethics	2013	42
10	Ranking of drivers for integrated lean-green manufacturing for Indian manufacturing SMEs	Journal of Cleaner Production	2018	35

Source: developed by the authors on the base of [61]

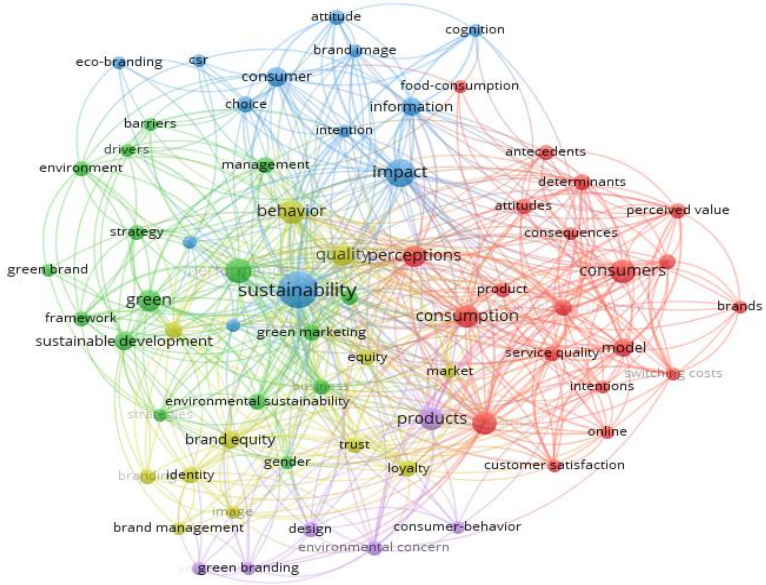
The results of the analysis allowed detecting the countries with significant share in the publications on sustainability and green brand. Among these countries the leader was the USA (21,3%), Australia (12%), China (11,1%), India (10,1%), Germany (5,6%), South Korea (5,6%). It worth noting that the scientists of different countries worked in co-authorship under the investigated studies. Thus, the third part of these documents has been published in co-authorship with other countries. With a purpose to visualize the clusters of co-authorship between the countries, the VOSviewer tool was used. For analysis, 108 articles from the Web of Science database published from 2000 to 2019 were used (Figure 3).

Figure 3: The co-authorship network map by countries

Source: developed by the authors using [60]

Following Figure 3, the more circle is, the more documents were published in the relative country. Furthermore, the distance between circles indicates the link strength of scientists' collaboration between two countries. In turn, the color of circles indicates the specific cluster. Given that, there are five main clusters of co-authorship among countries. The first cluster (green) combines the authors from the USA and five other countries as follows as England, China, Peru, the United Arab Emirates; the second (red) – Australia, Japan, Mexico, the Netherlands, Sweden, Spain and Vietnam; the third (purple) – Denmark, Greece, India; the fourth (blue) – Croatia, Finland, South Corea, Switzerland; the fifth (yellow) – Canada, Begium and France.

Figure 4: The network map of keyword co-occurrence in the investigated documents



Source: developed by the authors using [60]

In turn, the VOSvier tool allowed building the network map to analyze and visualize the thematic directions of investigated documents based on the keyword co-occurences in bibliographic data (Figure 4). The limitation for analysis was chosen as a minimum of three occurrences of the keyword. Thus, among 710 keywords, 67 met the threshold. Following Figure 4, the directions in scientific investigations divided into five clusters. The first cluster focused on studies in sustainability, sustainable and eco-brands, as well as brand image and consumers' attitudes towards them. The second cluster concentrated on green brand performance, green marketing and management. In turn, the third cluster investigated consumption and consumer satisfaction, the fourth – products and green branding, the fifth – corporate social responsibility and sustainable brands. Given that, the obtained results of the present bibliometric analysis indicated high link strength between the investigations on green brands and sustainability.

4. CONCLUSION

The obtained results indicated that the start point in the publication activity on sustainable growth and green brands was in 2000. However, the culmination of scientists' interest in the investigated sphere was in 2015 when sustainable development goals were accepted. Furthermore, analysis of the Internet users' research history indicated that the "green brand" web-search requests were more frequent than "sustainable brand" or "eco-brand". According to it, the definition "green brand" is more effective in promoting the country's brand as environmentally-friendly. In turn, the bibliometric analysis allowed identifying five clusters of research directions, where the first cluster focused on studies in sustainability, the second – green performance, the third – consumption and consumer satisfaction, the fourth – products and green branding, the fifth – corporate social responsibility and sustainable brands. Moreover, the high link strength was noticed between the first and second clusters, which analyzed sustainability and green brands, especially green performance. The present paper covers the scientific publications on sustainable growth and green brand only from the Web of Science database. Given that, further investigations should be expanded with including the papers from the Scopus database.

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DIGITAL EDUCATIONAL SERVICES IN THE CONDITIONS OF GLOBAL CHALLENGES: ANTI-CRISIS INSTRUMENT OR NEW REALITY

Natig Gadim-Oglu Hajiyev
Department "Regulation of economy",
Azerbaijan State University of Economics (UNEC), Baku, Azerbaijan
n.qadjiev2012@yandex.ru; naig_hajiyev@unec.edu.az

Pogodina Irina Vladimirovna
Vladimir state University named by A. G. and N. G. Stoletovs,
Legal Institute named by M. M. Speransky, Vladimir, Russia
ipogodina@vlsu.ru

Avdeev Danila Alekseevich
Vladimir state University named by A. G. and N. G. Stoletovs,
Legal Institute named by M. M. Speransky, Vladimir, Russia
danilavdeev@yandex.ru

Mamedov Sabir Niyazovich
Vladimir state University named by A. G. and N. G. Stoletovs,
Legal Institute named by M. M. Speransky, Vladimir, Russia
sabir-40@mail.ru

Sugra Ingilab Humbatova
Department "Economy and Managements",
International Center for Graduate Education,
Azerbaijan State University of Economics (UNEC), Baku, Azerbaijan,
Department "World Economy",
Baku Engineering University (BEU), Khirdalan, Azerbaijan
sugra_humbatova@unec.edu.az; shumbatova@beu.edu.az

ABSTRACT

Universal digitalization is the mainstream of most changes in modern society, has recently taken over universities. Currently, we are dealing with the complexity and uncertainty in higher education and its low ability to respond to economic growth, as well as be a source of talent and innovation in society. Online learning, in addition to the advantages that are already described in the scientific literature (economic efficiency, versatility, accessibility, variability), also has anti-crisis potential. Distance learning remains the only possible one against the backdrop of global challenges facing mankind (military conflicts, technological disasters, pandemics). In the article, the authors study the issues of transferring higher education to the online environment associated with quarantine measures in connection with the coronavirus pandemic (COVID-19). The epidemic has become a kind of test designed to verify the readiness of classical universities to switch to digital education. In this regard, there is a need to determine how higher education fits into new conditions? The article analyzes the current state of ed-tech, the risks and prospects of the total transfer of educational services to an online form, provides examples from international practice.

Keywords: *educational technology, distance education, educational services, pandemic*

1. INTRODUCTION

In a dynamically changing world, universities have essentially remained the same as they were decades or even centuries ago, demonstrating amazing vitality as a feature of the organization. There is a limit to this phenomenal stability: the world is facing global challenges (both social and natural). They require universities to change educational formats, develop their own strategies, and constantly adjust them. Significant challenges include epidemics and pandemics. The spread of viral infections (bird flu, swine flu, Ebola, and now coronavirus infection) in a global world has required governments to impose large-scale restrictions affecting education.

The authors of this article attempted to study the digitalization of higher education in an emergency situation of international proportions. The article analyzes the current state of ed-tech development, the risks and prospects of the total transfer of educational services to an online form, provides examples from international practice.

2. LITERATURE REVIEW

A significant number of scientific studies are devoted to the issues of digital transformation of education. It is known that the term "Digitalization of Education" was introduced in 1995 by the American professor of media technology at the Massachusetts Institute of Technology, the founder and director of Media Lab, Nicholas Negroponte, who formulated the concept of "Digital Economics" (Negroponte, 1995). Since then, a substantial amount of empirical material devoted to the study of the use of modern technologies for teaching has been accumulated and comprehended in Western science. (Thompson, 2015; Margaryan et al., 2011). Researchers turn their attention to the fact that the use of digital technologies in teaching alone does not ensure the activity of students, their achievement (Tamim et al., 2011), at the same time, much depends on the teachers who implement digital media, and on the university pursuing policies in this direction (Bond et al., 2011). At the same time, other authors point out that increased incentives for the use of educational technology can increase the productivity and coverage of educational programs (Kraebber & Lehman, 2009). In other words, currently there is no unity among researchers in assessing the process of digital transformation of education: some interpret digitalization as an opportunity for development, others as a threat to classical universities. Meanwhile, online education was not seen as a tool for transferring knowledge in a pandemic (in particular, COVID-19). Existing studies on epidemics and pandemics concern either medical and biological (Yang et al., 2020; Cao et al., 2020) the properties of these phenomena, or their impact on the economy, politics, social sphere, etc. (Karlsson et al., 2014), missing out on education. Thus, the proposed study contributes to the study of the impact of global epidemics on education.

3. FINDINGS

The spread of coronavirus infection (known as COVID-19), characterized by the World Health Organization as a pandemic, is recognized as a public health emergency with social (economic, political, legal) consequences for all of humanity (Quintana, 2020). Extreme quarantine measures, including sealing off large cities, closing borders and confining people to their homes are critical to stemming spread of the virus (Yang et al., 2020). The pandemic risks inspiring the crisis in the field of education: now universities around the world are forced to quarantine students, to seek and develop new forms of education. The crisis caused by the global epidemic could provoke the intensive introduction of online technologies in the educational sphere or, in any case, make our society more prepared to cope with the next emergency. As a result of restrictive measures introduced by governments around the world to curb the spread of viral infection, educational organizations have excluded “contact” (“offline”) forms of education. In light of this, universities are forced to increase their online potential for the quality implementation of educational programs.

Despite the fact that all educational organizations, one way or another, previously used information technology to educate students (from email and webinars to online learning management platforms), there are no mandatory standards for online education. This circumstance, on the one hand, creates a space for institutions to take the initiative, and on the other hand, creates a huge variety between universities in the variety of presentation of the material and in its quality. Against the backdrop of the global crisis, it has become clear that digital technology is the dominant paradigm to be reckoned with in order to ensure the viability of the organization and guarantee success over time. It should be noted that until now, many domestic universities (mainly regional) have exploited established practices, not trying to make changes in work with students. A.V. Ilyin points out that training in most law schools takes place in the same way as in previous years: students study the established doctrine (in those industries where it exists) and the current legislation in lectures, where all this is stated, then they pronounce it at seminars and, finally, on the oral examination from memory, the memorized teacher is laid out. The viciousness of this system is obvious (Ilyin, 2019). The lack of content of the previous system becomes clear even to people who are not related to jurisprudence, and we hear calls to abandon lectures altogether, going to the online education system (Sheveleva et al., 2019). One of the problems is that, against the backdrop of expectations that digital technologies will improve the quality of customer service, increase the speed of innovation, make effective transformations, not all organizations, including educational ones, believe that they are ready to introduce digital technologies. Meanwhile, now it has become more evident than ever that the formation of a new era - the era of digitalization - requires, at a minimum:

- increase in the number of online courses;
- the introduction of online learning;
- the formation and formulation of courses with unique topics;
- encouraging the organization of interdisciplinary research (they can be developed by changing the organizational structure of the university or the integration of universities in different regions).

Thus, the epidemic became a kind of test designed to test the readiness of classical universities to switch to digital education. In this regard, there is a need to determine how higher education fits into new conditions? Education used to be considered a public good, provided by nonprofit organizations that were unexposed to market pressure and had clear societal missions. Now, education is becoming a global service delivered by quasi-companies in an ever-more complex and competitive knowledge marketplace (Pucciarelli & Kaplan, 2016). The need to maintain competitiveness in the global market partly explains the need for the introduction of modern technologies in the educational process. Jackson rightly notes:The dynamics of digital transformation have converged on both public and private sector organizations, highlighting the need to build better strategies that address digital transformation as a matter of both current and future socioeconomic change and development (Jackson, 2019). In other words, the Internet revolution in education is inevitable. Its danger to traditional universities is as follows:

- universities lose value as a repository of knowledge;
- universities lose in the effective organization of the educational trajectory of LMS-systems;
- diplomas issued by universities guarantee the level of knowledge and skills worse than online testing systems;
- online learning through edutainment technologies can be more effective in attracting and retaining weakly motivated students than traditional offline learning.

The Internet revolution is most threatened by mid-level universities. For regional universities, the use of “alien” online courses is acceptable.

This will also allow us to overcome the intellectual closeness of our universities. To successfully compete with metropolitan universities for the best applicants, a regional university must offer special educational formats (we are talking about modern digital formats). The transition to distance learning exposes both technical and social problems. Firstly, not all students have the necessary equipment or Internet access. The question remains how well the remote system will work in those households that lack broadband. Secondly, students are not always positive about this practice. There is a suspicious attitude towards new concepts and innovations that require greater risk and transparency of information. A case in point is the PRC: DingTalk, a well-known Chinese messaging application, has launched electronic classes for schools that are forced to quarantine. Then, students who do not want to master the educational program, put the application a low rating in the online application stores to remove this platform from the search results (Gerasyukova, 2020). Of course, this situation should not be taken seriously, at the same time, the importance of emotional reactions in trying to scale educational technology cannot be ignored. Thirdly, the digitalization of education often does not take into account the fact that education is a phased process. Digital technologies (in particular, the possibility of an arbitrary choice of an online course) casts doubt on the classical linearity and phased process of obtaining knowledge. Fourth, teachers in the framework of the classical educational model can independently determine what knowledge is true. The scientific community checks the adequacy by assigning degrees, reviewing, opposing and other institutions that have existed for centuries. When it comes to online learning, it becomes difficult to verify courses. Despite these shortcomings, there is also a need to determine where human judgment remains valuable and cannot be completely replaced by digital conversion technologies. Can distance education become a daily practice from a forced temporary measure? It is obvious that it is impossible to translate the entire education "into digital". In this case, the teacher-student relationship will be lost, a personal example. Classrooms provide personal communication between the teacher and the student, and remain the cornerstone of education. Self-education (through remote access) is more suitable for advanced training, for further development, while high-quality higher education requires close contact between the teacher and the student in all respects: in terms of mastering knowledge, educating the person, transferring certain patterns of attitude to the profession. The rapid changes associated with the digitalization of public life are changing the requirements for specialists, which means that approaches to education must also change. At the same time, digital education has the potential to form "digital competencies". ICT skills are becoming increasingly relevant in every context, especially in the workplace, therefore one of the prime objectives for universities has become preparing future professionals to be able to deal with problems and search for solutions, including digital competence as a vital skill set (Bond et al., 2018).

4. CONCLUSION

Thus, the study shows that online education, in addition to the advantages described in the literature (accessibility, economic feasibility, versatility), has anti-crisis potential. Distance learning in the face of global shocks (wars; climate crises; pandemics) remains the only way to ensure continuous knowledge transfer. Amid economic instability, the digitalization of educational services can help overcome emergencies and solve the personnel problem. However, what will happen after the crisis? Will the introduction of online learning continue or will we revert to the previous model? The answer is not obvious. On the one hand, the old traditional models of education need a critical reevaluation. Higher education organizations must now constantly reorganize themselves, turn into organizations of lifelong learning, which must take into account alternative external paradigms, adapt to the requirements and information of the foreign market. Digital technologies can bring new learning opportunities to existing learning models, which will allow us to create the "digital competencies" necessary in

the 21st century. At the same time, in some areas (medicine, construction), distance learning is in principle difficult to implement, and in all other sectors online education deprives students of the opportunity to create "flexible skills" that can be acquired in the process of working in a group or public presentation. Truth, as you know, is not at the extreme poles of opinions, but in the middle. In an era when extraordinary situations are becoming the norm, an alternative is the development of quick response mechanisms at universities (including through the allocation of individual posts and the creation of units). When necessary, educational organizations can quickly move to the Internet, and then, as soon as the crisis is over, return to normal work. To achieve the goals of transforming higher education, it is necessary to organize a dialogue between the leaders of the state, education and business and find out how higher education can gradually and quickly adapt to changing the landscape of the digital future.

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MORTGAGE LENDING MARKET: CHALLENGES AND PROSPECTS

Aydin Rafiyev
Azerbaijan State University of Economics (UNEC)
Baku, Istiqlaliyyat St., 6, AZ1001, Azerbaijan
aydinrafiyev@hotmail.com

Natalya Solovjeva
Belgorod National Research University, Russia
Belgorod, Pobedy St., 85, 308015, Russia
solovjeva@bsu.edu.ru

Natalia Melnikova
Belgorod National Research University, Russia
Belgorod, Pobedy St., 85, 308015, Russia
melnikova_n@bsu.edu.ru

ABSTRACT
The article is devoted to the topical issues of the mortgage lending development. Mortgage lending remains an important tool for solving the housing problem and is becoming increasingly important at the present stage of economic development of any country. Mortgage loan is one of the effective mechanisms that can accumulate temporarily available financial resources in the financial market and direct them to segments of the economy forming the potential demand for an investment resource. The world experience in state regulation of mortgage lending is characterized by comprehensive government support for system's participants. The article discusses the statistical data provided by the Central Bank of Russia and the information of the Federal State Statistics Service of the Russian Federation, where the analysis of changes in interest rates on mortgages is carried out. The dynamics of the amount of issued mortgages, mortgages with state support, which consists of a number of programs, the federal program of mortgage housing loans, operating under the national project "Housing", and rural mortgage, are considered. The problems, conditions and factors affecting the development of mortgages, as well as the main directions of development in modern conditions are identified. The role of the state in the system of mortgage lending is determined. Based on the analysis of the current situation in the mortgage market, conclusions are drawn on the prospects for the development of the mortgage market in Russia. For the mortgage lending development, it is necessary to ensure further improvement of the regulatory environment and the creation of favorable conditions in the relevant socio-economic subsystems (banking sector, financial market infrastructure, monetary and social policy, economic stability) which will allow us to come closer to a solution of housing problems of the country's population.
Keywords: *Agricultural mortgage, Housing loan, Mortgage, Mortgage lending, Mortgage rate*

1. INTRODUCTION

At the current stage of economic development, mortgage lending is aimed at housing in many countries. One of the main objectives of the social and economic policy of each country is the functioning of the real estate market in the area of affordable housing, where mortgages play an important role in generating the demand for housing. Consequently, mortgage lending is one way to address the housing issue (Ulyasheva, Mazaeva, 2015). The following Russian economists covered the problems of mortgage lending: I.T. Balabanova, G.N. Beloglazova, G.B. Blanc, O.I. Lavrushin, V.I. Limorenko and others. Among the foreign economists covered

mortgage lending and the real estate market were E.J. Dolan, C. Campbell. S. Fisher and others. The real estate market issues were considered by scientists such as A.N. Asaul, V.A. Goremykin, N. Ordway, J. Friedman, and others (Goremykin, 2011). The aim of the research is to identify mortgage market problems and trends affecting housing affordability in the context of improving the housing situation of citizens. The research methodology is based on the theory and practice of foreign and Russian economists on the topic. Monographic method, on the basis of which the study of the problem had been carried out, statistical and mathematical methods of analysis of the housing real estate market, the graphic method, which had made it possible to present the current situation on the mortgage market and to draw conclusions, were applied.

2. DISCUSSION

The development of mortgage lending contributes to the creation of a competitive economy of the country, economic modernization, the reduction of inflationary processes and social tensions. In the current context, low access to mortgages remains a serious problem, because of two mutually exclusive factors: the high cost of real estate and the low level of total incomes. This situation is determined by the resulting imbalance of supply and demand in the housing market, which has a negative impact on the quality of mortgage lending (Solodilova, 2014). The active development of mortgage lending is not possible without appropriate support at the state level. The mortgage lending market in the Russian Federation has been developing since the establishment of the Agency of Housing Mortgage Lending (AHML) by the Government of the Russian Federation in 1997 (AHML Has Updated the Development Strategy up to 2020, 2017). Then AHML has been transformed into the "DOM.RF", JSC (Development of the Mortgage Lending Market and the Activities of the AHML, JSC, 2015), which is recognized the financial development institute in the housing sector to facilitate the implementation of state housing policy. It performs a special state objective of attracting investment and improving the quality and affordability of housing through the development and implementation of federal standards that make it possible to create favorable conditions for the acquisition of housing, including mortgage. Currently, 561 credit organizations are operating in the Russian mortgage market, of which 410 is providing mortgage housing loans (according to the data at the beginning of the 2019). These are creditors with a high level of reliability and proven performance. These are the largest banks in the country, e.g. in Russia (fig. 1) or in Azerbaijan (fig. 2).

Figure 1: The largest banks in the Russian Federation
(Source: Bank of Russia Official Website)

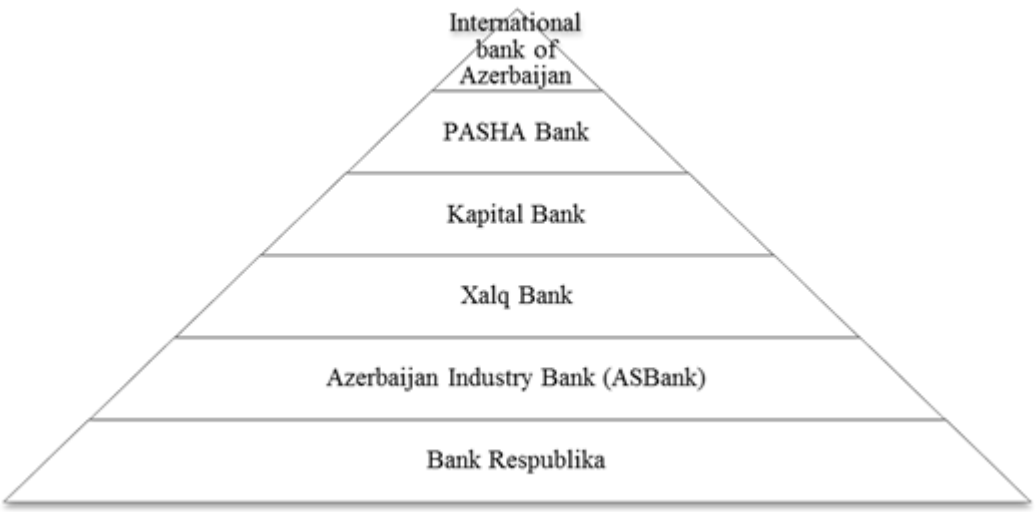

Figure 2: Major banks in the Republic of Azerbaijan
(Source: Banks in Azerbaijan Have Changed Mortgage Requirements, 2020)

The credit requirements of commercial banks have certain differences depending on the chosen banking product, history of the bank and client category, the duration of the partnership, et al. Mortgage in various Russian commercial banks is presented for illustrative purposes in table 1.

Bank	**Rate (%)**		**Initial payment (%)**		**Seniority (years)**	**Borrowers age (years)**	
	in the primary market	**on the secondary market**	**in the primary market**	**on the secondary market**		**in the primary market**	**on the secondary market**
Sberbank	9.3	9.2	15	15	6	21 - 75	21 - 75
VTB	9.8	9.8	15	15	3	21 - 65	21 - 65
Raiffeisenbank	8.99	8.99	15	15	3	21 - 65	21 - 65
Gazprombank	9.2	9.2	20	20	6	21 - 65	21 - 65
Rosbank	10.74	10.74	15	15	2	20 - 65	20 - 65
Russian Agricul-tural Bank	9	9.1	20	15	6	21 - 65	21 - 65
Absolut Bank	10.75	10.75	15	15	3	21 - 65	21 - 65
Promsvyazbank	9.15	9.8	15	20	4	21 - 65	21 - 65
DOM.RF	8.9	9.4	15	15	3	21 - 65	21 - 65
Uralsib Bank	9.49	9.49	10	10	3	18 - 65	18 - 65

Table 1: Mortgage dynamics in the primary and secondary markets of Russia
(Source: Analytical Center for Mortgage Lending and Securitization, 2020)

Thus, mortgage lending has declined over the past four years, falling by about 5 %. The loans issued has amounted to 7 % of the gross domestic product of the Russian Federation. Mortgage loans have become less frequent, and hence, there has been a decline in credit transactions by about 15 % and in the amount of loans issued by about 5 %. The bank mortgage rate, which is shown in figure 3, accordingly affects this.

Figure following on the next page

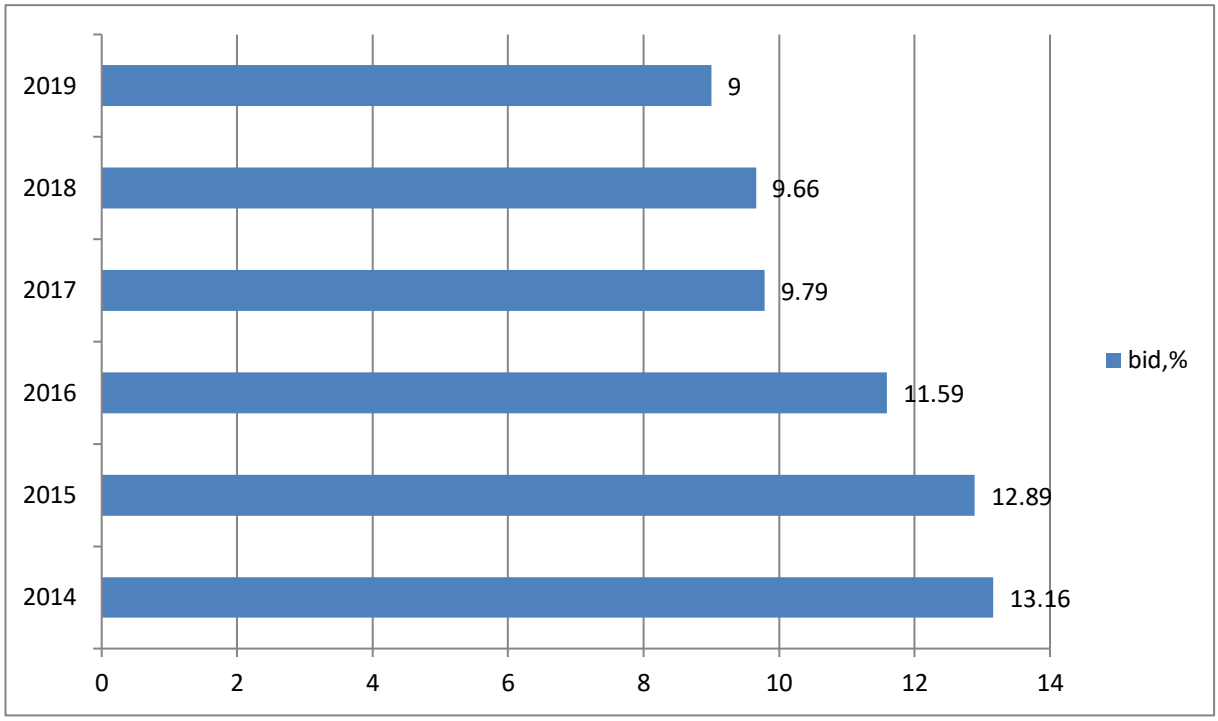

Figure 3: Weighted average rate on mortgage housing loans issued
(Source: Cian Analytical Center – according to the Bank of Russia)

Consequently, the affordability of mortgages continues to be directly affected by the mortgage rate. For more in-depth analysis, the issuance of mortgage loans in Russia is presented in table 2.

Year	Quantity of the credits	Relative dynamics to the previous year, %	Amount of loans, mln rubles	Relative dynamics to the previous year, %	Average amount of mortgage, mln rubles
2014	1012064	–	1 753 294	–	1.73
2015	699419	31 %	1 157 760	-34 %	1.66
2016	856521	22 %	1 472 380	27 %	1.72
2017	1086940	27 %	2 021 402	37 %	1.86
2018	1471809	35 %	3 012 702	49 %	2.05
2019	1269300	14 %	2 847 517	-5 %	2.24

Table 2: Issuance of housing (mortgage) ruble loans in Russia
(Source: Federal Service for State Statistics – Rosstat – Official Website)

The analysis shows the increase in mortgage transactions was observed only in 5 regions in 2019, and in the other leading regions of the country lending declined, even though the mortgage rate dropped to 9 %. Furthermore, there were amounted to 7.5 trillion rubles mortgage arrears, which was about 7 % of the gross domestic product. Citizens of the Russian Federation were trying to purchase housing (get a mortgage) for not more than 2.24 million rubles. An increase of sums was on the average of 100 thousand rubles. Thus, 40 % of mortgages was issued in 10 regions of the country (fig. 4), and the average mortgage period exceeded 18 years (The Russian Mortgage Market in 2019: Analysis, Statistics and Forecasts, 2019). In Russia, the issuance of mortgages was amounted to about 1.27 million in 2019, which was 14 % less than the previous year. The amount of loans reached 2.85 trillion rubles. The amount of mortgage loans issued totaled to 3 trillion rubles and the average sum amounted to 2.24 million rubles in 2018. The amount of the mortgage loans issued was 3 trillion rubles.

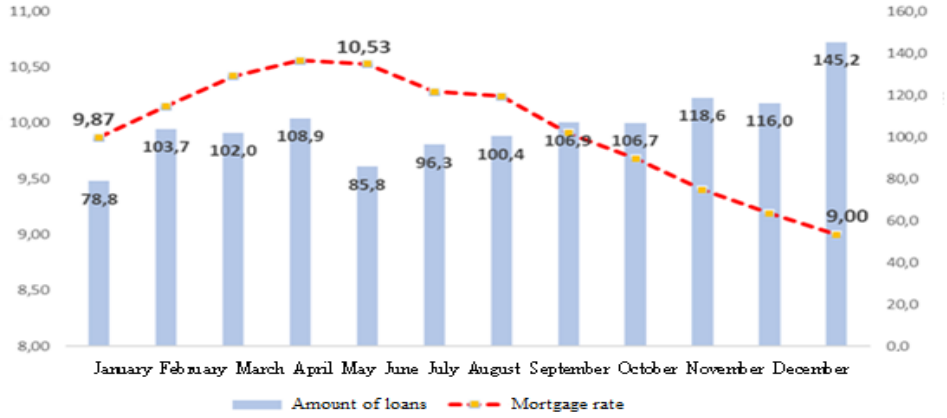

Figure 4: Dynamics of mortgage issued loans in Russia
(Source: Outcome of 2019 in the Mortgage Market: Housing Lending is Declining Despite the Reduction in Rates, 2020)

The key reasons for the decline in mortgage lending include a higher level of mortgage rates, which experienced during most of the last year, an increase in real estate prices and a decrease in the amount of loans issued with a low initial payment. 10 regions accounted for 40 % of mortgage loans in 2019. Comparing 2018, the list of regions has not changed: Moscow (80,800 mortgages), Moscow Region (71,400), Saint Petersburg (64,000), Tyumen Region (52,600), the Republic of Bashkortostan (46,200), the Republic of Tatarstan (44,100), Sverdlovsk Region (43,600), Krasnodar Territory (39,200), Chelyabinsk Oblast (37,100), Novosibirsk Region (32,400) (Ministry of Finance of the Russian Federation Official Website). These are mostly economically prosperous localities with relatively high incomes. In 2019, all the regions leading in mortgage issuance recorded a decline in relation to 2018 (most strongly in the Republic of Tatarstan and in Tyumen Region).

	Region	**Number of transactions**	**Development in 2018,** %
1	Moscow	80 758	-8.4 %
2	Moscow Region	71 422	-13.0 %
3	Saint Petersburg	63 936	-13.2 %
4	Tyumen Region	52 657	-16.4 %
5	The Republic of Bashkortostan	46 173	-13.7 %
6	The Republic of Tatarstan	44 089	-19.5 %
7	Sverdlovsk Region	43 670	-14.8 %
8	Krasnodar Territory	39 194	-10.2 %
9	Chelyabinsk Region	37 131	-12.8 %
10	Novosibirsk Region	32 416	-12.0 %

Table 3: Top 10 regions with maximum number of registered mortgages
(Source: Outcome of 2019 and Outlook for 2020 in the Mortgage Market: the Threat of Contamination, 2020)

It can be seen from the dynamics that by the end of 2019, 5 regions had shown an increase in mortgage transactions compared to 2018. Thus, in the Republic of Crimea and the city of Sevastopol mortgage transactions amounted to 32 %, and demand was growing not only from the local population, but also from those living in other regions (Mortgage with State Support in 2020, 2019). According to assessment of DOM.RF, JSC, 16.5 million families are planning to acquire housing in the medium term, and 80 % of them are ready to get a mortgage. In addition, mortgage arrears account for only 7 % of the GDP of the Russian Federation. In comparison, in developed European countries this indicator is approximately 20-50 % (The Russian Mortgage Market in 2019: Analysis, Statistics and Forecasts, 2019). According to the AIF portal, 13 of the 25 banks, that issue mortgages under the mortgage fund of Azerbaijan, increased the amount of the minimum living wage from 136 to 155 manats, Muganbank − up to 160 manats, Agbank − up to 170 manats, Bank VTB (Azerbaijan) − up to 175 manats, Expressbank, Atabank and Azer Turk Bank − up to 180 manats, while the International Bank of Azerbaijan, Kapital Bank and Bank Respublika − up to 200 manats. Three banks remained this indicator unchanged, it was 180 manats in PASHA Bank and Bank of Baku and 200 manats in Unibank. In addition, banks had reduced the size of the initial payment, in some cases by half. For example, Bank Respublika reduced its standard mortgage payment from 50 % to 25 %, and its concessional mortgage payment − from 50 % to 15 %. Five banks (PASHA Bank, Muganbank, Express Bank, International Bank of Azerbaijan and Atabank) had reduced their standard mortgage initial payment from 40 % to 30 %. Three banks (Atabank, Muganbank and Express Bank) had reduced their concessional mortgage payment from 40 % to 30 % (Banks in Azerbaijan Have Changed Mortgage Requirements, 2017). Conditions of 10 Azerbaijan banks for obtaining a mortgage loan are presented in the table 4.

Bank	**Subsistence minimum (the amount per family member should not be less than 155 manats)**	**Initial standard mortgage contribution (%)**	**Initial contribution on preferential mortgage (%)**
NBCbank	155	25	25
GunayBank	155	25	25
AGBank	170	25	15
Bank Avrasiya	155	15	15
Yapi Kredi Bank	155	30	30
Xalq Bank	155	30	30
Unibank	200	30	30
Turanbank	155	30	30
Rabitabank	155	30	30
Muganbank	160	30	30
Kapital Bank	200	30	30

Table 4: Updated conditions of 10 Azerbaijan banks to obtain mortgage loan (Source: Banks in Azerbaijan Have Changed Mortgage Requirements, 2017)

According to the new procedure for issuing a mortgage loan, approved in June 2016, the ordinary mortgage loan is issued only to citizens of Azerbaijan and only in the national currency for a period of 3 to 25 years, the concessional mortgage − up to 30 years for the purchase of residential space, owned by a citizen. Interest rates on conventional mortgages should not exceed 8 % and on concessional mortgages should not exceed 4 % per annum (Banks in Azerbaijan Have Changed Mortgage Requirements, 2017). As in any country, in Russia, the mortgage market has the potential for development, as for lots of people mortgages become the only option to improve their housing conditions. Therefore, based on 2020 results, the amount of mortgage loans is believed to exceed the mark of 3 trillion rubles, as it was in 2018.

Thus, mortgage lending is not a mass banking product, but is created as a product concept for certain borrowers, not only high-wage and high-income customers, but also for the category of citizens, with concessional offers from the state.

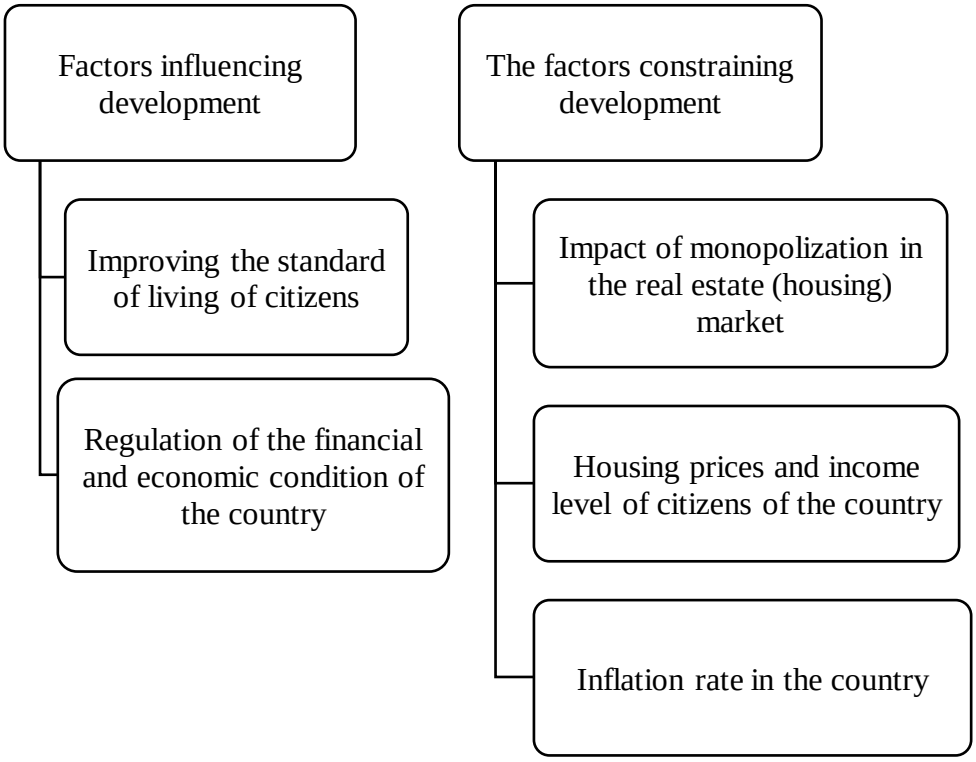

Figure 5: Factors influencing mortgage lending development in Russia

Based on the analysis and the identified factors affecting the development of mortgage lending in Russia, it is possible to predict several years in advance, but no more, due to political relations between countries, exchange rates, declining purchasing power of the population, overpriced offers, et al. Consequently, arrears are increasing, and citizens have to re-apply to banks for refinancing. Since February 2020, the development of the Russian mortgage market has been affected by the slowdown in economic growth, inflationary risks due to the fall in oil prices, and a COVID-19 pandemic. Regardless of these factors, it is possible to apply for a mortgage loan in any Russian bank. Banks offer programs with different conditions, interest rates and requirements to borrowers. For example, Belgorod Region and the city of Belgorod have such low-cost mortgage programs:

- Mortgage at 6 % per annum, provided from 2018 by subsidizing the interest rate on a loan if a second child or subsequent children are born;
- 450,000 rubles for mortgage payment at the birth of a third child or subsequent children from 01/01/2019 to 12/31/2022, granted to large families. This assistance to large families was announced by the President of the Russian Federation in his Message to the Federal Assembly on February 20, 2019;
- Rural mortgage at 3 % per annum. It is provided to rural inhabitants for the purchase of ready-to-use housing, for the construction of a dwelling house, and for the repayment of a loan for this purpose (Mortgage with State Support in 2020, 2019).

In the Russian market, the “Expert RA” Agency considers three scenarios of development of mortgage lending: positive, moderately negative and crisis (fig. 5) (Outcome of 2019 and Outlook for 2020 in the Mortgage Market: the Threat of Contamination, 2020).

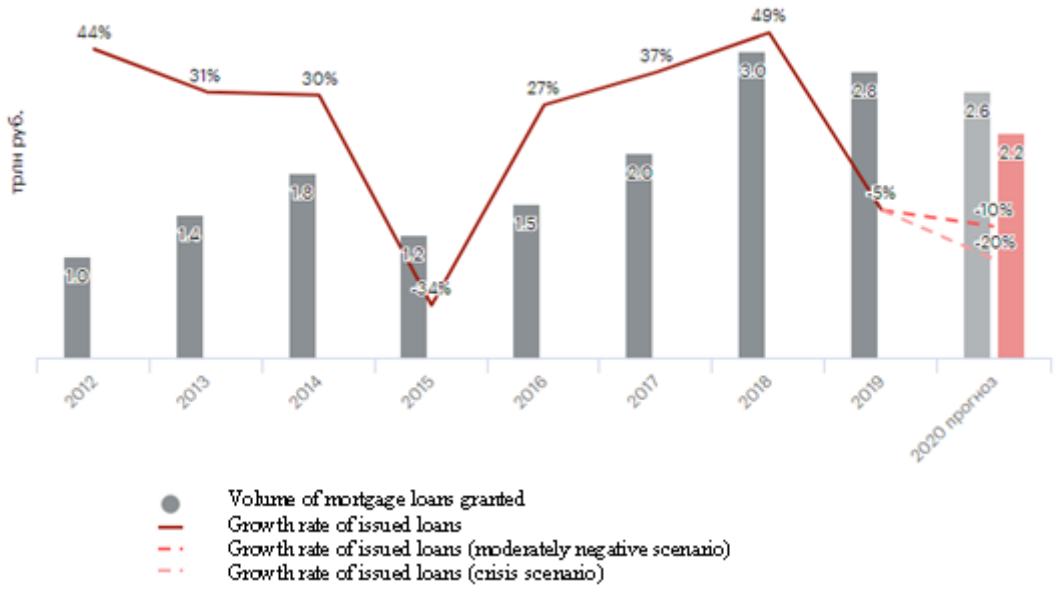

Figure 6: Mortgage market forecast situations
(Source: Outcome of 2019 and Outlook for 2020 in the Mortgage Market: the Threat of Contamination, 2020)

The positive scenario assumes the Bank of Russia will lower the key refinancing rate, which will facilitate the development of state programs. In this scenario, mortgage issuance can increase by 10-15 % by the end of 2020 and will be about 3.1-3.2 trillion. And the weighted average rate will decline to 8.5 % by the end of 2020. The next scenario is a moderately negative one if the average annual price of Brent oil will be totaled $40-$45 per barrel. Considering inflation may rise above the target of 4 % per annum and, as a result, the key refinancing rate will rise to 7-7.5%. In this scenario, mortgage issuance will be reduced to about 2.5-2.6 trillion rubles. A negative impact can be an increase in mortgage rates to 10 % per annum and a decline in real incomes. Banks will be facing a decline in the solvency of the population amid rising prices, job losses in various sectors related to COVID-19 pandemic, as well as overdue mortgage debt within 5-10 % during the year, but its share is supposed not to exceed 1.5 % of the portfolio. The crisis scenario assumes a drop in the average annual oil price to $30 per barrel, a significant depreciation of the ruble, an increase in inflation to 7-8 % at the end of the year, an increase in the key refinancing rate to 9-10 %, and mortgage rates will approach 12 %. Thus, banks will increase their requirements for new borrowers. In this scenario, mortgage lending will decrease by 20-25 % to 2.1-2.2 trillion rubles, and, in this case, the government can offer concessional credit programs. The analysis of mortgage lending revealed that the crisis has had a negative impact on both the Russian and foreign mortgage markets (Egina, Terkulova, 2020). Due to lockdown measures in Russia and abroad, the solvency of citizens has sharply declined, and hence economic activity is decreasing, inflation is rising, oil prices are falling, and the mortgage lending market needs support from the government. Such measures should, firstly, necessarily help to address the financial difficulties of borrowers (delays, vacations), and secondly, to support commercial banks, and accordingly to keep interest rates from rising and reduce risk.

3. CONCLUSION

To summarize, solving the problems of obtaining a mortgage is one of the main tasks of any citizen and one of the most important objectives facing the state. In accordance with the roadmaps and plans of the Ministry of Finance of the Russian Federation for 2019-2024,

mortgage lending has been designated as one of the points for economic development. The plans state an increase in the possibilities of acquiring (building) housing through mortgage loans and a reduction in the mortgage rates. In order to achieve these objectives, it is planned to increase liquidity and reduce credit risks for commercial banks, to gain access to prompt refinancing of mortgage loans on the primary market, and to update the legal framework and standardize the mortgage market. The development of a housing mortgage lending system in Russia through the introduction of state programs is necessary, since they can solve the problems of migration, as well as contribute to improving the living conditions of the population, thereby improving the quality of life of citizens.

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EDUCATION FOR SUSTAINABLE DEVELOPMENT AS A TOOL TO REACH HIGH QUALITY IN TEACHING

Farhad Rahmanov
Azerbaijan State University of Economics (UNEC)
Baku, Istiqlaliyyat str., 6, AZ1001, Azerbaijan
farhad52@live.ru

Nadiya Kostyuchenko
Sumy State University
Sumy, Rimsky-Korsakov str., 2, 40007, Ukraine
n.kostyuchenko@viod.sumdu.edu.ua

Denys Smolennikov
Sumy State University
Sumy, Rimsky-Korsakov str., 2, 40007, Ukraine
dos@management.sumdu.edu.ua

Farhad Huseynov
Azerbaijan State Academy of Physical Education and Sport (ASAPES)
Baku, Fatali Khan Khoyski, 98, AZ1072, Azerbaijan
farhadland@yahoo.fr

ABSTRACT

The paper is devoted to the analysis of education for sustainable development concept and its role in teaching social sciences. Using Scopus database and VOSviewer software, the investigation of the popularity of education for sustainable development concept among countries as well as in different sciences was made in the article. The paper outlines research of education for sustainable development phenomena in social sciences. The authors have proposed a methodology to implement education for sustainable development in higher education in social sciences. The authors found out that the core of the methodology is active learning techniques. Therefore, the conclusion was made that education for sustainable development could nudge the quality of teaching social sciences, as education for sustainable development applies the new, nowadays learning methods, which leads to a high quality of education. Even more, through the prism of education for sustainable development, students study global issues and ways to reach global aims through local actions. Authors state that education for sustainable development should not be considered as having one of the educational components in the curriculum. All the educational components or most of them should be constructed on the principles of education for sustainable development as well as the whole concept of sustainable development to achieve a high quality of teaching in social sciences. The research allowed to conclude that education for sustainable development concept is popular in social sciences and makes it possible to increase the quality of teaching social sciences and equip students with global competencies and XXI century skills.

Keywords: *Active teaching techniques, Education for sustainable development, Quality of education, Educational process, Technology*

1. INTRODUCTION

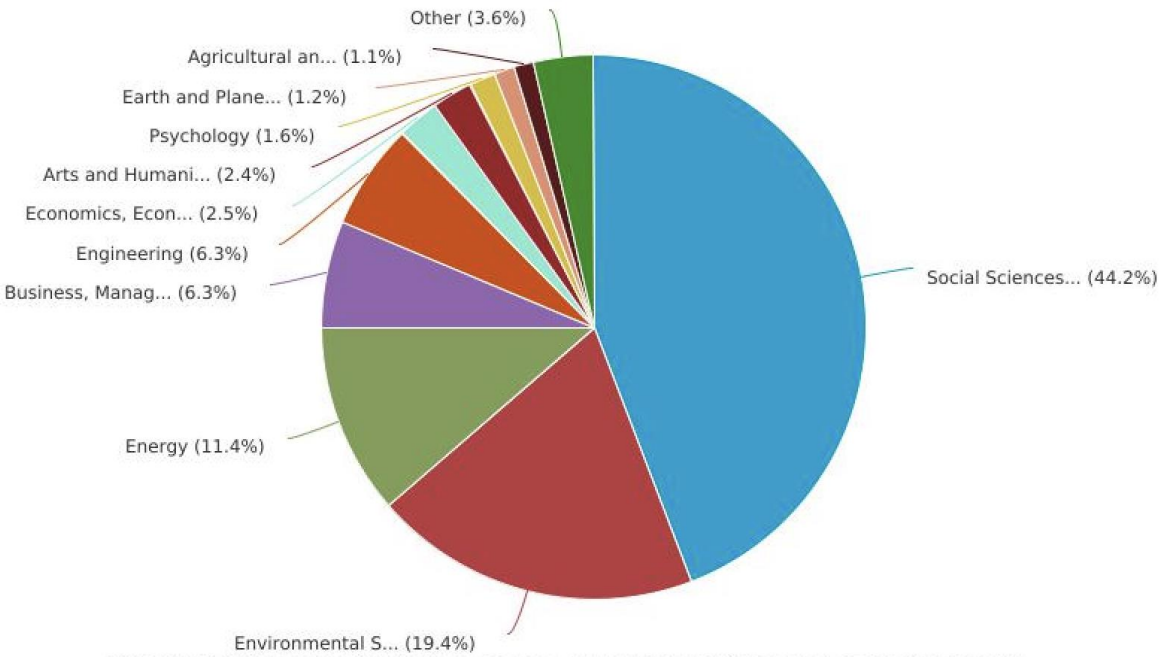
In a global changing world, education has to result in corresponding skills and competences. Even more, competencies required by employers are also changing rapidly. Therefore, educational curricula should be revised and modernized appropriately. Education for

sustainable development can become a vector for such changes. It can be a universal tool for teachers around the world, a strategic direction for changes that correspond to global challenges. And it can be the source of changes by itself, as sustainability issues can be seen as a reason to update and improve educational courses for students, to modernize training courses for teachers, to transform the teaching methods. Sustainable development issues can be implemented into different courses of different specialties, and even can be the source for transdisciplinary courses. While including sustainable development issues into the existing courses, teachers will have the chance to modernize, refresh, and change curricula, becoming "change-makers". They will also need to change approaches to teaching, as active learning techniques are much more effective in this case. Therefore, the paper hypothesizes that a high quality of education, particularly in teaching social sciences, can be reached while implementing education for sustainable development (as this allows students to study global issues and obtain global competences and XXI century skills and stimulates teachers to apply active teaching methods and modern approaches).

2. EDUCATION FOR SUSTAINABLE DEVELOPMENT IN DIFFERENT SCIENCES

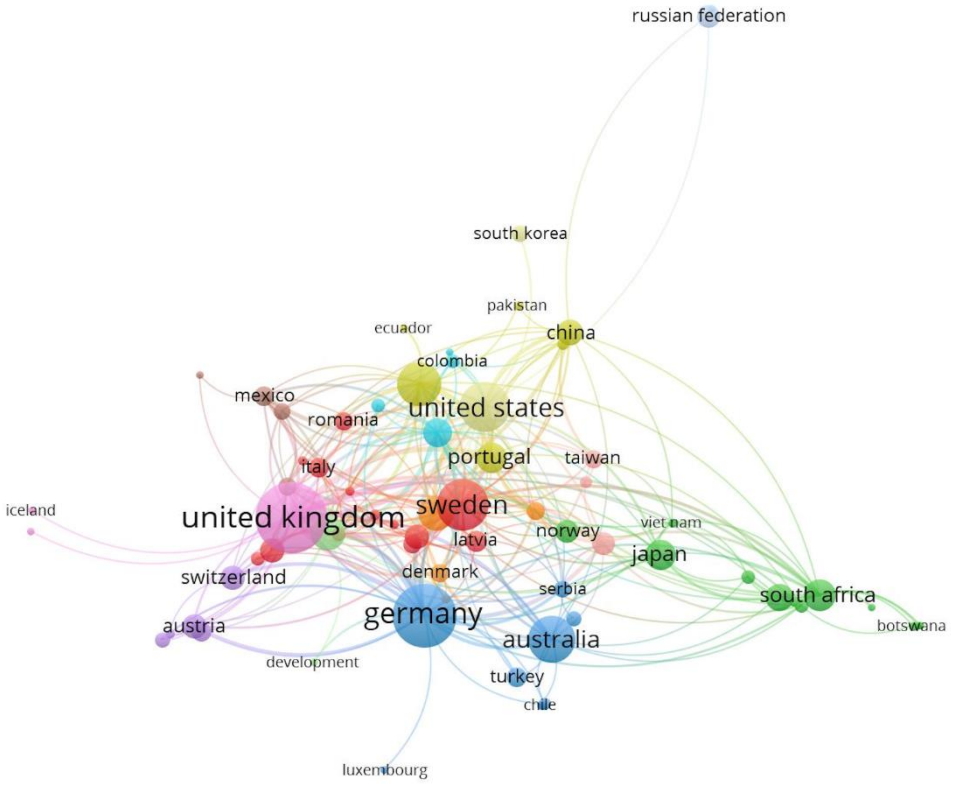
In 2005 the United Nations started promoting changes in education towards achieving a more sustainable society. The project was called the United Nations Decade of Education for Sustainable Development that took place during 2005-2014. UNESCO was the lead agency for the project (UNESCO, 2015). Education for sustainable development (ESD) is education that encourages changes in values and attitudes, in skills and knowledge to empower learners to take responsible actions towards a sustainable future with respect to economic viability, environmental integrity, and social justice (UNESCO, 2020a, 2020b). Since that time, lots of scientific research dedicated to education for sustainable development was conducted. The research was done in different spheres, but mostly in social sciences (see Figure 1) being most popular in the United Kingdom, Germany, Sweden, and the USA (see Figure 2).

Figure 1: Scientific papers on education for sustainable development (by subject area)



Source: own research based on Scopus database, N=1499 papers

Figure 2: Scientific papers on education for sustainable development (by country)



Source: own research based on Scopus database, N=1499 papers, VOSviewer software

Investigating the results presented in Figure 1, one can see that more than 44% of publications concerning education for sustainable development was made in social science journals. At the same time, we need to mention education itself is included in social sciences. In Table 1 we present the results of deeper analysis by looking at top-10 most cited authors on the topic and their field of expertise.

Table 1: Top-10 most cited authors on topic "Education for sustainable development"

Author	Country	Number of articles	Number of citations	Author's research area
Lozano, R.	Sweden, United Kingdom	11	1148	Sustainability, Business models, Food Waste, Corporate Social Responsibility
Huisingh, D.	Netherlands, Sweden	13	1147	Sustainability, Energy Utilization
Lambrechts, W.	Netherlands, Belgium	7	796	Sustainability, Supply Chain Management
Lozano, F.J.	Mexico	5	787	Biomass, Biofuel supply, Sustainability
Rieckmann, M.	Germany	13	616	Sustainability, Ecosystem service, Conservation
Ceulemans, K.	France, Belgium, Canada	6	603	Sustainability, Corporate Social Responsibility
Wals, A.E.J.	Netherlands, Sweden	5	555	Resilience, Governance, Sustainability
Kopnina, H.	Netherlands	16	440	Environmental Education, Environmental Ethics, Biodiversity
Barth, M.	United States, Germany	16	414	Sustainability, Technology, Sustainable Consumption
Caeiro, S.	Portugal	10	385	Sustainability, Sediments, Corporate Social Responsibility

** the authors with minimum 5 papers on topic were included into the analysis*
Source: own research based on Scopus database, N=1499 papers, VOSviewer software

Thereby, education for the sustainable development concept is mostly popular in social and environmental sciences. But still, we need to mention that the topic is comparatively new as even the most cited researchers have maximum 16 publications concerning education for sustainable development by the time.

3. EDUCATION FOR SUSTAINABLE DEVELOPMENT AND GLOBAL COMPETENCIES

In a rapidly changing world, new competencies are required from employees, particularly global competencies that refer to the knowledge and skills to examine local and global issues, to interact across cultures, to take actions towards sustainable development and collective well-being (OECD, 2018). According to Future of Jobs Report (2018), the top-10 skills demanded by employers in 2020 (so-called XXI century skills) are as following:

1. Complex problem-solving;
2. Critical thinking;
3. Creativity;
4. People management;
5. Coordinating with others;
6. Emotional intelligence;
7. Judgement and decision making;
8. Service orientation;
9. Negotiation;
10. Cognitive flexibility.

Therefore, education should equip graduates with those competencies. Krpalek P. et al. (2018) state that aim of education is "to guide learners to independence, activity, critical thinking, motivated approach to learning as well as responsible self-learning". Wodarski K. et al. (2019) indicate there are some discrepancies between the demanded competencies by the labour market and those provided by the universities at the moment. Lekashvili E. (2019) states that changes in teaching Economic Science are needed due to globalization issues and due to new competences demanded. Cavico F. J. and Mujtaba B. G. (2018) summarise that approach to sustainability is needed in teaching law, ethics and social responsibility. Education is usually associated with innovations, which, in turn, leads to sustainable economic development as proved by Kendiukhov I. and Tvaronaviciene M. (2017). Ivanova E. and Kordos M. (2017) state that ideas and knowledge are the basis for regional sustainable development. This is of particular importance in the context of entrepreneurship development: the quality of education is one of the decisive factors in creating a successful business (Dvorsky J., 2018). The main benefit of education for sustainable development is that it corresponds to global competencies, providing graduates with XXI century skills needed for their future jobs. Even more, through the prism of education for sustainable development students study global issues and ways to reach global aims through local actions. To implement education for sustainable development in higher education in social sciences, some particular learning components should be included in the course, or a separate course dedicated to sustainable development should be added into curricula. But having one learning component in the curricula does not mean education for sustainable development yet. Ideally, all the learning components or most of them should be constructed on the principles of education for sustainable development. Additionally, active teaching and learning techniques are to be applied in education for sustainable development, allowing to get knowledge based on real-life experience and simulations close to reality. That would lead to a higher quality of teaching in social sciences, and therefore to a higher quality of education. At the same time, such researchers as Vasylieva T. et al. (2017), Vorontsova A. et al. (2018) and Pryima S. et al. (2017), Tutar H. et al. (2019) mention that investments in the

system of education, as well as the construction of a global network for learning and development of lifelong learning, is highly required. The question of education quality assessment and quality assurance is outlined in the papers by Vardanyan N. (2017), Mazurkiewicz M. (2017), and others. Other aspects of educational issues are addressed by Hrynkevych O. et al. (2017), Savga L. et al. (2018), Davlikanova O. (2017), Shkarlet S. et al. (2019), Noruzy A. et al. (2017), Gregory Rayter et al. (2017), Migala-Warchol A. (2018), Abbas S.A. (2019), Kvitka S. (2019), Krejci P. and Sebestova J. (2019) and others.

4. QUALITY OF TEACHING THROUGH ACTIVE LEARNING TECHNIQUES

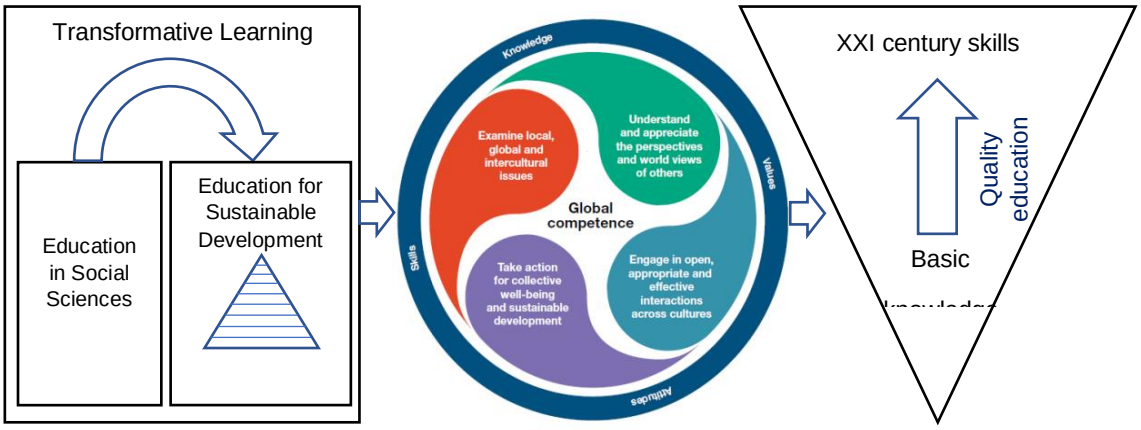
According to the "cone of learning" proposed by Dale E. (1969), active learning techniques are the most effective methods in the transmission of knowledge; students get up to 90% of knowledge while stimulating or modeling a real-life situation. It gives evidence of high quality in teaching if applying such learning methods. Active learning means that students are not passive observers in their learning but dynamic participants with their minds actively engaged; they reflect on and monitor the learning processes and its results (Barkley, 2009). Active learning is also defined as "any instructional method that engages students in the learning process. In short, active learning requires students to do meaningful learning activities and think about what they are doing" (Prince, 2004). The main active learning methods are as following (Kostyuchenko, 2016, Ebers, 2017):

- Case study (an analysis of a real-life situation to identify a problem that exists and to suggest solutions to the problem);
- Flipped classroom technique (a technique that allows students to study lecture material before class, that opens class time for discussion and other activities);
- Public debates (a formal method of presenting arguments for a given issue by two competing teams: one team offers arguments that support the issue, another group presents arguments that oppose the problem);
- Pitching competition (a method of presenting the idea during 3-5 minutes followed by questions and answers session);
- Simulation game (a model of reality simplification in the way of a game);
- Mind map (a visual learning tool to represent situation, concept, idea, etc.);
- "Think, pair, share" strategy (a technique when partners at first privately think about the problem and after that discuss the issue with each other);
- "World café" technique (a method to explore a problem from multiple perspectives by engaging every participant in several rounds of small-group discussions);
- "Open space" technique (a technology that allows participants to create an agenda by themselves: they are brought together under a guiding purpose; participants select the potential sessions by themselves and drift between the sessions).

Several more techniques are described in the guide (University of Toronto, 2015). Quality of education depends on teaching methods (Degtjarjova, 2018). Therefore, teachers are to be equipped with such techniques during teacher training. Sinakou E. et al. (2018) state that education for a sustainable development course should be included in teacher training as this will be an opportunity for teachers to study the concept of sustainable development and later-on to transfer the knowledge to students. Many scientists give evidence that active learning activities provide students with lots of benefits, particularly motivation and engagement in studies (Huston, 2012, Diochon, 2001); more profound knowledge, critical and creative thinking (Cherney, 2008, Gosser, 2005), etc. Such researchers as Lu S. and Zhang H. (2013), Onwu G. O. M. and Kyle W. C. (2011), Albareda-Tiana S. et al. (2019), Miguel N.P. et al. (2020) state that active learning methods are effective in education for sustainable development, and changes are needed in a traditional approach to education.

Therefore, while applying active teaching techniques into the study process and equipping curricula with education for sustainable development leaning components, the higher educational institutions can increase the quality of teaching and learning through implementing active learning techniques. And this will lead to a high quality of education (see Figure 3).

Figure 3: Algorithm for ensuring the quality of education through implementing ESD approach



Source: constructed by the authors based on (OECD, 2018)

High quality of education due to the high quality of teaching and students' engagement in the process will result in nowadays competences student will obtain during their studies. As a result, students will be equipped with XXI century skills needed in the modern labour market.

5. CONCLUSION

The research outlined the issue that nudging towards education for sustainable development is an effective way to increase the quality of the educational process, particularly the quality of teaching in social sciences. Authors found out that the concept of sustainable development is the most popular in social sciences. Authors state that transformative changes are needed in the educational system towards education for sustainable development. Education for sustainable development can result in global competencies and XXI century skills (including critical thinking, emotional intelligence, complex problem-solving, etc.), which are demanded by modern employers. Teachers will need to find new approaches to teaching, particularly implement active learning techniques. As a result, students will be engaged as the learning process will be exciting and closer to real-life issues. Therefore, education for sustainable development can be an effective tool to increase the quality of teaching in social sciences.

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NEW AGE OF MARKETING - NEUROMARKETING

Leonarda Jez
University North, Croatia
lejez@unin.hr

Ana Mulovic Trgovac
University North, Croatia
ana.mulovic@unin.hr

Ante Roncevic
University North, Croatia
ante.roncevic@unin.hr

ABSTRACT

This paper discusses about neuromarketing, a relatively young science and market research method that will be increasingly used due to the saturation with traditional advertising. The compound of psychology, neuroscience and economics represents the opportunity for better understanding consumer needs and ways to satisfy those needs. Using devices for scanning the brain, such as functional magnetic resonance imaging, electroencephalography or eye tracking method, allows to retrieve unconscious, but also the most reliable consumer reaction because neuromarketing skips the response given by the consumer. It is interested in the brain response. If the sense of sight, hearing, smell, taste, or touch is affected in the right way, it is possible to reach the reptilian brain that makes purchasing decisions. An online survey was conducted to examine respondents' views about this new science.

Keywords: *Neuromarketing, Reptilian brain, Subliminal advertising, Substitute logo*

1. INTRODUCTION

Neuromarketing is an interdisciplinary field that combines psychology, neuroscience and economics. The goal of this new science is to discover how advertising and marketing strategies affect the brain of consumers (Lee, Broderich and Chamberlain, 2010; referenced by Madan, 2010, p. 34). Neuromarketing and traditional marketing are striving for the same goal: to embed a desirable product image into consumer awareness. The difference between the two concepts is in the ways of market research and the techniques they use to achieve their goal. The most important thing that distinguishes neuromarketing from traditional marketing is that neuromarketing has the ability to explore the unconscious parts of the consumer's brain. Neuromarketing insights into consumers' brains provide precise information about their desires, tastes, goals and emotions. There is no hiding in neuromarketing. In the survey, respondents can easily give an incorrect answer or the one that is better, but they cannot control their brains (Kolev, 2012, p. 265). The human brain is divided into the left and right hemispheres. The left is the center of logic, thinking, science, speech, and the right is the center of emotion, music, art, intuition. There is also a categorization of the brain into three parts. According to Renvoisé and Morin (2007, p. 5-7) there is the new brain or neocortex that thinks and processes rational data. It forms the outer part of the brain. After it, deeper in the brain is the middle brain that feels and whose task is to processes emotions and gut feelings, while the decisive part lies deepest in the brain and it is called the old or reptilian brain. He takes into account data from the new and middle brain and then decides. It is also called the first brain because it was present in the human skull before the middle and new brain, and the first one is fully developed, unlike the new brain, which develops until age twenty-four.

2. NEUROMARKETING RESEARCH METHODS

In the research this field of science, a number of methods are used that are primarily used in medicine to diagnose brain diseases. Brain scanning is a way of discovering which part of the brain responds to a particular stimulus, which can be a product or an advertising message (Kolev, 2012, p. 256). The most common methods, according to Harrell (2019.) are functional magnetic resonance imaging (fMRI), electroencephalography (EEG), eye tracking method, biometrics and facial electromyography (fEMG). Functional magnetic resonance imaging is considered to be one of the most advanced forms of brain scanning and is the most common method used in neuromarketing research. The brain imaging captured by this method shows the active brain structures, the level of their activity, and provides an opportunity to detect which brain area has been activated in a specific task (Frković and Višković, referenced by Babić, 2016, p. 173). This method works by measuring the amount of oxygen that certain parts of the brain receive when are exposed to a task, which means that when a certain part of the brain is stimulated, it will seek more oxygen and that part of the image will be colored depending on the intensity of the activity. While measuring brain activity by functional magnetic resonance imaging, neuroscientists capture data from two different conditions. The first condition shows brain activity at rest, when it is not exposed to stimuli, while the second condition shows brain activity under the influence of stimulants. Places that were colored during the second state, while not in the first state, are a consequence of the stimulus (Plessis, 2011, p. 131). The EEG measures the electrical activity of the brain by monitoring the brain waves that brain emits (Morin, 2011, p. 133). The electrical activity of the brain is measured by placing the electrodes on the subject's head, and the signals from the neurons located in the first layer of the cortex, or superficial layer of the brain, are best received, because they are closest to the electrodes (Baars and Ramsoy, referenced by Plessis, 2011, p. 128). Eye tracking method includes tracking the eyeballs to find out what the respondent is looking at when is exposed to marketing or other content. From this method can be found out how the respondent perceives the content and how much interest causes by looking at it (Promosapiens, 29.09.2019). Biometrics examines changes in the human body, more specifically its physical reactions. In these changes are included respiratory rate, heart rate, blinking, skin changes, and more. Galvanic skin response (GSR) is a method for measuring changes in the skin, and refers to changes in the activity of the sweat glands that reflect the intensity of the emotional state or in another words, the emotional arousal of the subjects. Electrocardiography (EKG) is a method designed to measure the activity of the human heart and lungs during stimulus exposure. Facial electromyography is a method of obtaining information about how people change facial expressions when exposed to certain stimuli. During increased emotional intensity, microactivations of the facial muscles cause small electrical impulses. According to them it can be determined the intensity of emotions that the respondent feels (Mladenović, 2016, p. 23-24).

3. SUBLIMINAL ADVERTISING

"Subliminal advertising is a technique that exposes the consumer to images of products, their names and other marketing stimuli without costumer's knowledge." (Key, referenced by Miliša and Nikolić, 2013, p. 302). Subliminal advertising has a very effective impact on people and Lindstrom (2012, p. 81) cites two reason why is this so. The first reason is the awareness of the human brain. If a consumer sees an advertising message for a product on a poster or magazine and if its logo is visible, the consumer will know that someone has paid for that advertising message and is trying to sell it, so their brains are on alert. On the other hand, when the brain does not see the logo, it will be less alert and subconsciously respond to the advertising message that the consumer sees. Another reason lies in the carefully crafted associations. A great example of this strategy is the British cigarette brand, Silk Cut. A law banning tobacco advertising came into force in the UK in 1997.

To prepare for this ban, the brand began displaying purple silk a decade earlier in its advertising messages. Over time, consumers began associating purple silk with Silk Cut cigarettes. That is why this brand found itself in a simple situation when the law banning tobacco advertising came into force. They designed posters that showed neither cigarettes nor the Silk Cut logo, only purple silk. The effectiveness of this strategy is demonstrated by the results according to which about 98% of consumers associate purple silk with Silk Cut cigarettes. The way of advertising Camel cigarettes in Croatia is also very interesting. The advertisement for Camel light cigarettes, when they had arrived to the Croatian market, showed a camel on a light blue background, and the advertising text was: I AM IN CROATIA. FIND ME. This text instructs people that this is something foreign and now is in Croatia. Then, the camel image was put to associate with the international term kamel, which people would associate with famous cigarettes of the same name Camel, and light blue color is a light product, or less harmful effect. A few months later, a new advertisement appeared with the now-famous camel and a text: IN OUR BEAUTIFUL - IS BEAUTIFUL. The word CROATIA has been replaced by the opening verses of the Croatian national anthem (cro: Lijepa naša), and the entire text indicates that cigarettes are well received in Our Beautiful (Croatia) (Stolac, Vlastelić, 2014, p. 78). Subliminal advertising includes also a substitute or replacement logo. It is a form of neuromarketing communication where if the logo is properly designed and positioned to represent a new shape while maintaining a certain visual identity, can achieve a positive consumer reaction, first unconsciously and later consciously, as in the classic logo. An example of one such communication was presented at the Neuromarketing World Forum in Dubai in 2016. It is the logo of the Houston Rockets NBA Basketball Club which is shown at the figure below (Promosapiens, 2016).

Figure 1: Old (left) and new (right) logo of the Houston Rockets NBA Basketball Club (Source: Promosapiens, 2016)

The new logo shows the club name and a shape of a rocket is placed between them and the letter R is affixed to it. An ellipse below the rocket and the letter R is the main point for further analysis. It is important to note that a sponsor of the club is the Toyota and that ellipse is part of the Toyota logo, which means that the sponsor skillfully hid part of his logo in the club logo without mentioning his name.

4. METHODOLOGY

The primary survey was conducted on respondents' opinions and perception about filed of neuromarketing; the research instrument was questionnaire and it was conducted online. In the survey participated 620 respondents. This online survey has been conducted from July 7th to September 25th of 2019. Pre-research on smaller sample was conducted for the purpose of writing a student final thesis. In this research, four hypotheses have been put forward that will eventually be accepted or rejected:

1. Most respondents are familiar with the term of neuromarketing;
2. Most respondents are not object to the brain scanning method for neuromarketing purposes and would participate in neuromarketing research;
3. Most respondents believe that neuromarketing research will be used to manipulate consumers;
4. Most respondents think subliminal messages can influence their decision on what to buy.

5. RESULTS

In the survey participated 620 respondents, 82.3% (510) was female and 17.7% (110) was males. The age of the respondents was as follows: 8.5% (53) are 20 years old or under, 47.9% (297) are between 21 and 30 years old, 26% (161) are between 31 and 40 years old, 13.5% (84) are between 41 and 50 years old. 3.1% (19) are between 51 and 60 years and only 1% (6) of respondents are older than 61 years. According to these results, most respondents, more precisely 47.9%, are between 21 and 30 years old. Education level of the respondents is as follows: 5.5% (34) have completed primary school and 39.5% (245) high school. 6.3% (39) have completed college (2 years). Then, 16% (99) of the respondents hold a bachelor's degree, 30.8% (191) hold a master degree and 1.9% (12) have a doctoral degree. On the question Are you familiar with the term "neuromarketing"? 23.5% (146) of the respondents answered Yes, I know what it is and what it is used for. People who have studied marketing in high school and college, and whose business is marketing related, are very likely to answer affirmative to this question. 30.8% (191) of the respondents answered I only know that it is used with brain related research. This group would include those who associate the meaning of neuro with the brain and can assume what it is. Negative response or that they are not familiar with the term of neuromarketing, gave 45.6% (283) of the respondents. Figure 2 illustrates these results. Hypothesis 1, Most respondents are familiar with the term "neuromarketing", was examined with this question and considering that 54.3% (337), slightly more than a half of the respondents, know what neuromarketing is, what is used for and that is related with brain research, this hypothesis is accepted.

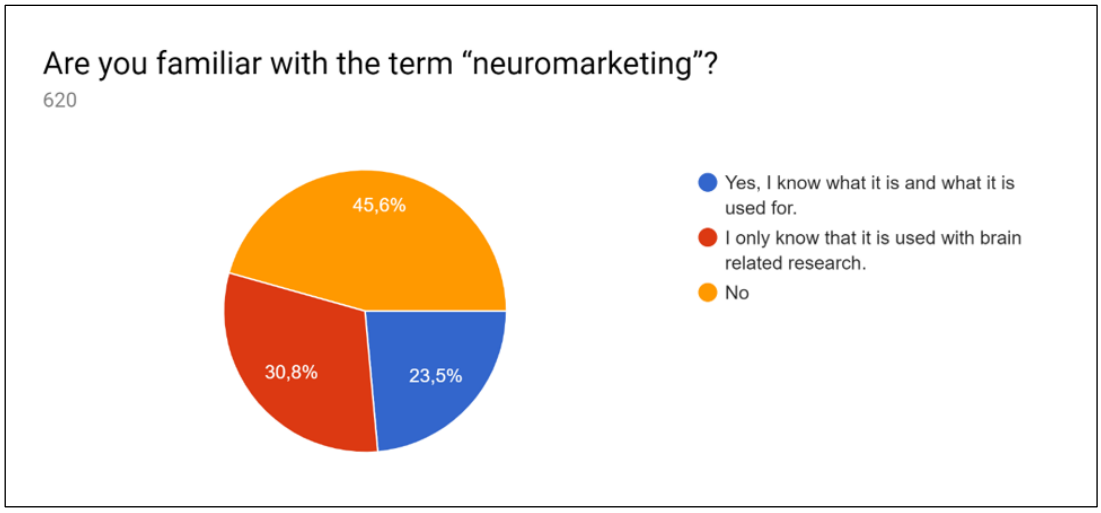

Figure 2: Respondents familiarity with the term neuromarketing
(Source: Author)

The next two questions are related to hypothesis 2 in which it was assumed that Most respondents are not object to the brain scanning method for neuromarketing purposes and would participate in neuromarketing research. The first question was Methods that neuromarketing use include brain scans and access to private information about respondents. What is your

opinion about this? In the description of it was a short definition of neuromarketing for those who are not familiar with this term and an example of neuromarketing research about warnings on cigarette packages: Neuromarketing is a field that combines psychology, neuroscience and economics. The goal of this new science is to discover how advertising and marketing strategies affect the brain. An example of such research is the discovery that warnings on cigarette boxes stimulate an area in the smoker's brain called the nucleus accumbens or “craving point". By stimulating this point, smokers are told to satisfy their desire to smoke and to light another cigarette. Figure 3 shows the results for this question. 71.3% of the respondents have a positive opinion about neuromarketing method of research. Of these, 43.1% (267) consider such research to be a very interesting way of doing it and 14.5% (90) say this is a very modern way of doing it. 13.7% (85) of the respondents are neutral thinking or that they do not mind this type of research. Negative opinion has 18.2% (113) of the respondents who think that this is an intrusion on a person's privacy, and 10.5% (65) think that this is not ethical and strongly oppose it.

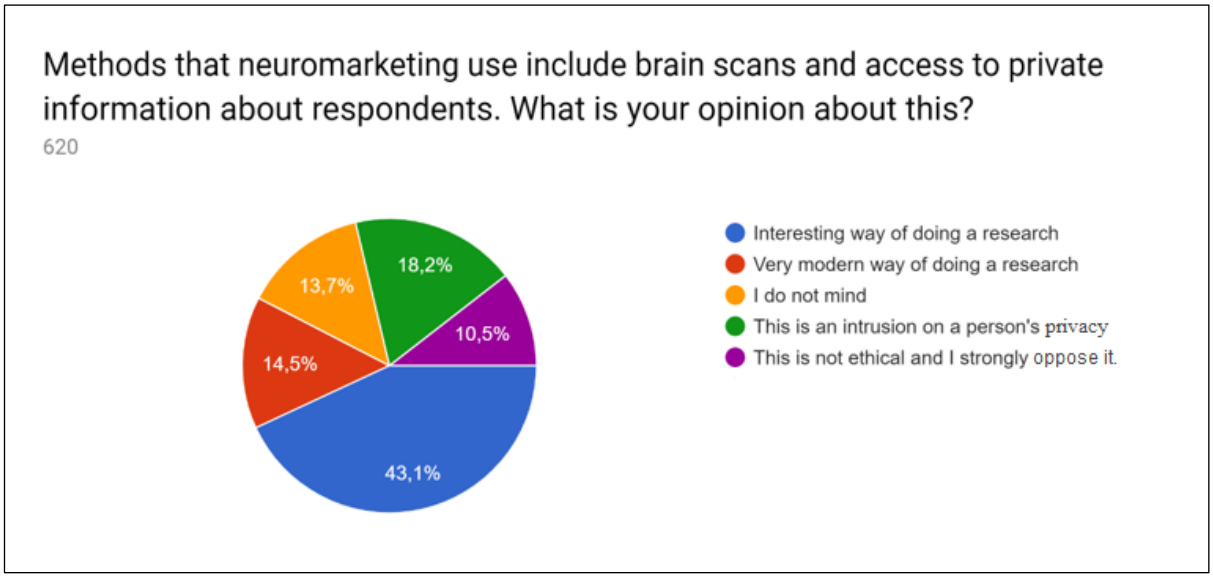

Figure 3: Respondents opinion on brain scan
(Source: Author)

The second part of the hypothesis 2 was examined in the following question: Imagine a situation where you were invited to participate in a neuromarketing survey. Your answer would b: Answers Yes and No were offered and a field in which the respondents could write another answer. The results are shown on the figure 4. The percentage of respondents who would participate in neuromarketing research was 30.8% (191), while the overwhelming majority, 62.3% (386), gave a negative answer. The rest of the respondents gave answers such as Maybe, I don’t know, Depends on a research, purpose, If it will be paid, I need to think about it, Yes, if I support the goal of a research and so. Having regard to the answer to the previous question, that 71.3% of the respondents have positive opinion about neuromarketing research, but on this question, only 30.8% of them would actually participate in it. Probably people are afraid to do a brain scan unless it is medically necessary. Finally, the hypothesis 2, Most respondents are not object to the brain scanning method for neuromarketing purposes and would participate in neuromarketing research, is rejected because 62.3% of the respondents would not participate in neuromarketing research.

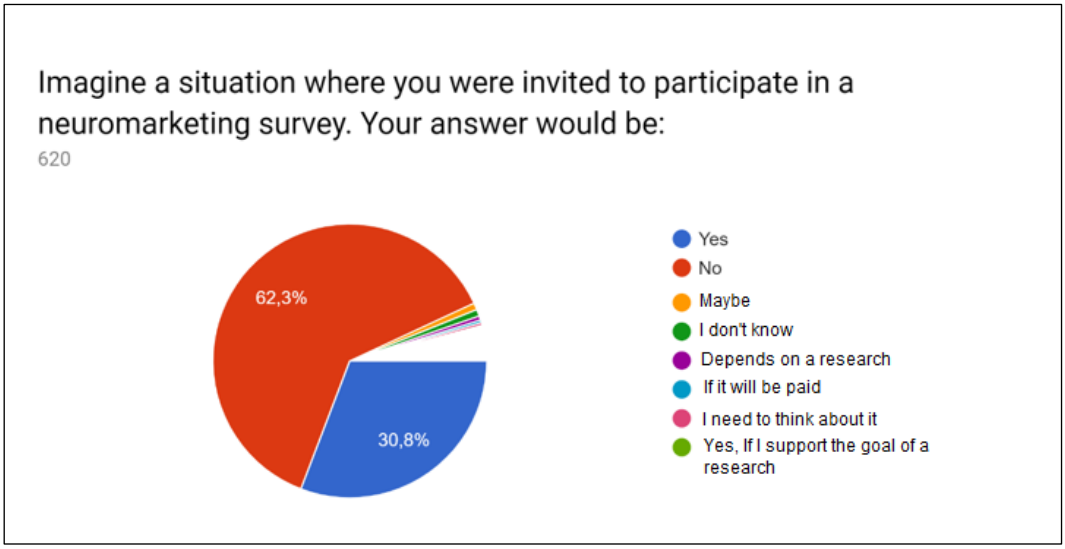

Figure 4: Respondents opinion about participation in neuromarketing research (Source: Author)

Following question, related to hypothesis 3, Most respondents believe that neuromarketing research will be used to manipulate consumers, was: What is the probability that some companies will use this science for bad purposes, that is, to manipulate people? and a scale from 1 to 5 was offered. 1 indicated a very low probability, while a number 5 indicated a very high probability. 2.1% (13) of the respondents said that companies are very unlikely to use neuromarketinga to manipulate people, 3.5% (22) answered number 2, in other words, there is low probability that companies will use neuromarketing to manipulate people. Number 3, medium probability of neuromarketing being tool to manipulate people, was marked by 16.9% (105) of the respondents. Number 4, which indicates a high probability that companies will misuse this science, was selected by 26.8% (166), while half of the respondents, 50.6% (314), chose number 5 indicates a very high probability of misuse this new science. Previous results can be justified within following figure 5. How the affirmative answers, that there is high and a very high probability of misuse neuromarketing, make 77.4% (430), the hypothesis 3 is accepted.

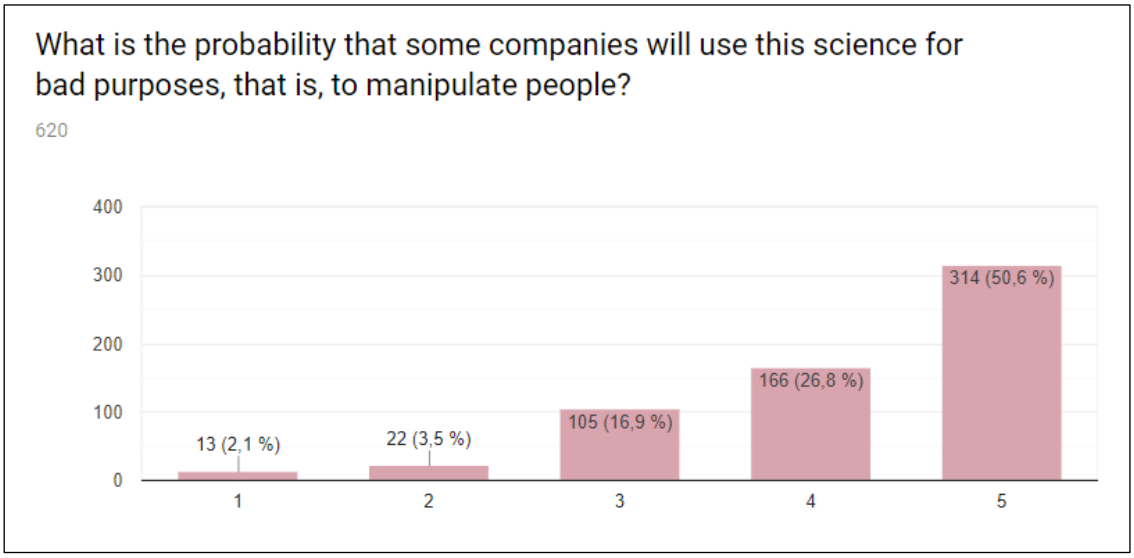

Figure 5: Respondents opinion about misuse of neuromarketing (Source: Author)

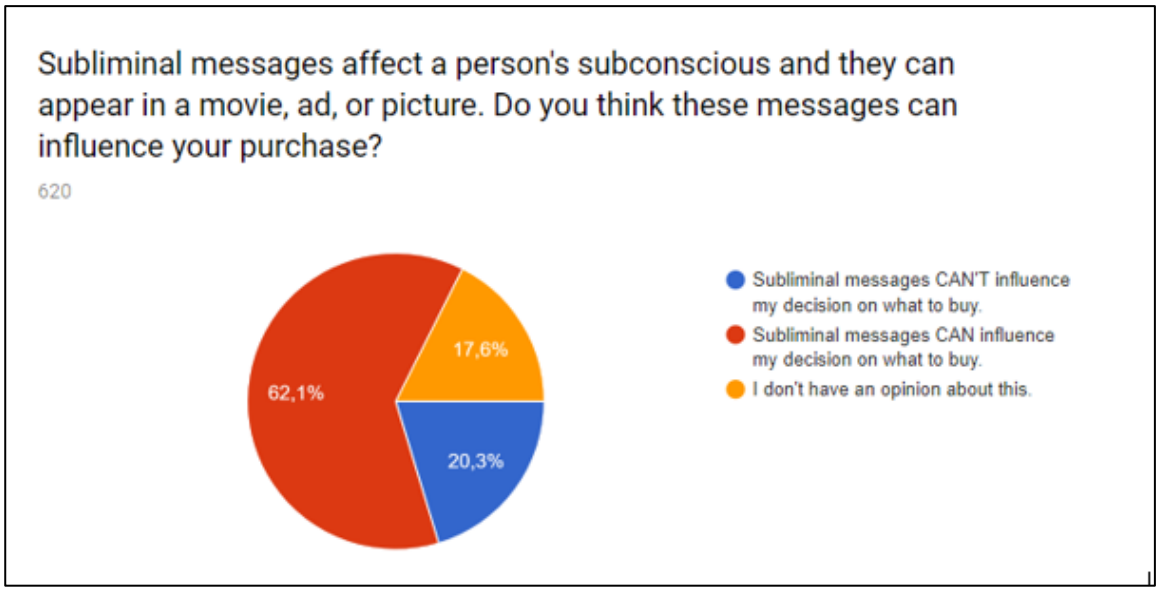

Figure 6: Respondents opinion about influence of the subliminal messages (Source: Author)

Figure 6 shows a question that provides a short description of subliminal messages, as it is highly likely that some respondents are unfamiliar with the term, and asked the question Do you think these messages can influence your purchase? Exploring the hypothesis 4, that Most respondents think subliminal messages can influence their decision on what to buy, it was found that 20.3% (126) of the respondents think that subliminal messages can't influence their decision on what to buy, while more than a half of them, precisely 62.1% (385), think this messages can influence their decisions. 17.6% (109) of the respondents don't have any opinion about this. The possible reason is that they are not familiar enough with this type of advertising. With this results, 62,1% affirmative answers, hypothesis 4 is accepted.

6. CONSLUSION

Neuromarketing is a science that will be increasingly developed and used in the future. The ways in which the market will be explored using power of neuromarketing will become cheaper, so more companies will be able to use them to find out the needs of their target groups. People are saturated with advertising in the traditional way, so new forms are emerging, such as substitute logos that can subconsciously affect humans. In the research that involved 620 respondents, four hypotheses were tested. Hypothesis 1, Most respondents are familiar with the term »neuromarketing«, is accepted because the results show that 54.3% of the respondents answered that they know what it is, what it is used for and that is related with brain research. The results for the hypothesis 2, Most respondents are not object to the brain scanning method for neuromarketing purposes and would participate in neuromarketing research, show that 71.3% of the respondents have a positive opinion about this way of brain scanning. Although is this such a large percentage, only 30.8% of it would participated in a neuromarketing survey. With that results hypothesis 2 is rejected. The hypothesis 3, Most respondents believe that neuromarketing research will be used to manipulate consumers, is accepted because 77.4% of the respondents have opinion that there is a high and a very high probability of misuse neuromarketing science for economics or any other reason. The last hypothesis explored that Most respondents think subliminal messages can influence their decision on what to buy and the results show that 62.1% of the respondents have an opinion that subliminal messages really can influence their decision. With that, hypothesis 4 is accepted. The study concludes that the purpose of neuromarketing is to discover the capabilities of the human brain.

More specifically, neuromarketing is designed to know people, their desires and needs, because, as Lindstrom (2012, p. 41) puts it, "neuromarketing is not about implanting ideas into people's brains, or forcing consumers to buy what they don't want to buy. Neuromarketing reveals what already exists in our head – ours buyology." As neuromarketing was created after marketing, so will be the third discipline, which will reveal how to reach a person, his or her attention and buying decision in an even better and more efficient way. The desire to sell will always be. Only the ways in which it will be realized will change over time.

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EARNINGS MANAGEMENT: THEORETICAL BACKGROUND AND BIBLIOMETRICS ANALYSIS OF THE ISSUE

Anna Siekelova
University of Zilina, Faculty of Operation and Economics of Transport and Communications, Univerzitna 1, 010 26 Zilina, Slovakia
anna.siekelova@fpedas.uniza.sk

ABSTRACT
The world economy has changed. In the present day, earnings management has a crucial impact on the financial world. Earnings management plays an important role in the reliability of financial statements, affects stock markets, investors, creditors, banks and many other financial institutions. In the last few decades, interest in the earnings management field has grown considerably. Literature review, as well as bibliometric analysis, are suitable tools for obtaining an overview of the development, changes and current state of the issue. A literature review is an integral part of scientific research. Bibliometric methods are used in all scientific areas. Results of bibliometric analysis provide tools accepted in the evaluation of researchers, teams, institutions, as well as indicators of the quality evaluation of scientific journals. Citation database data is a significant source of information. The aim of author's contribution is the literature review and bibliometric analysis of earnings management issue. The first part of our contribution is focused on the development of earnings management theories and the most significant works and authors in the field. The second part consists of bibliometrics analysis using by science map. VOSviewer - a software tool for constructing and visualizing bibliometric networks - was used. Science maps were used to show co-authors in the field of earnings management, country's and university's cooperation in the research dealing with earnings and its management, as well as keyword science map for publications with the term "earnings management". In conclusion, the author also focused on the use of the science map results for future research.
Keywords: *Accruals, Bibliometrics Analysis, Earnings, Earnings Management, VOSviewer*

1. INTRODUCTION

Academic scientists have been dealing with the issue of earnings management practices (hereafter „EM“) since at least the 1960s. Nevertheless, it can be stated that earnings management is still not a fully known issue. Its application in the emerging markets is noticeably smaller compared to abroad. Therefore, EM is reviewed mainly by foreign authors who have been dealing with its types, motives or models for its detection. First researches were focused on the impact of accounting choices on capital markets. Researchers were focused on the relationship between earnings management practices and stock prices. The mechanistic hypothesis arose. Authors Ball (1972), Kaplan & Roll (1972) stated that investors are focused on the reported numbers and ignore differences in the choice of accounting policy. It means that investors assume increasing their stock prices as a result of higher reported earnings. Based on the theory of the mechanistic hypothesis it can be also stated that earnings management might be misleading for investors that consider the amount of reported earnings based on the financial report as the only source of corporate information. (Rath & Sun, 2008) Contrary to the mechanistic hypothesis, the efficient market hypothesis was based on the assumption that stock prices are influenced by all publicly known information (not only financial reports) and the impact of the choice of accounting policy on profit is one of this information. (Mayer-Sommer, 1979; Famma 1970) The results of initial studies dealing with earnings management issue were inconclusive. Further studies have caused a shift from capital to non-capital market.

An important study in this area was Positive Accounting Theory published by authors Watts and Zimmerman in 1978. Authors dealt with the motives of earnings management practices. Based on their research, large entities with the risk of governmental interference manage reported earnings by investing in low-risk assets to avoid large growth and with that reducing political cost. Further, earnings are managed to avoid failing debt covenants and to improve the payments of bonus plans (Watts & Zimmerman, 1978). Positive Accounting Theory assumes rationality of management and the effort to choose accounting policy to influenced contractual outcomes for managers interests. Since 1990s, the interest of earnings management practices has shifted back from non-capital to capital market. Such shifts highlight that earnings management and its economic consequences have impact on capital resource allocation. As was mentioned above, earnings management play an important part in the reliable of income statements and balance sheets. Earnings management initiatives directly affect stock markets, creditors, investors and banks or many financial institutions. (Suprianto et al., 2019; Vrbka et al., 2019) The aim of the author's contribution bibliometrics analysis of earnings management issue.

2. THEORETICAL BACKGROUND OF EARNINGS MANAGEMENT

The following part of the contribution is focused on theoretical background and literature review of EM issues. The authors focused on the definition, motives, and initiatives of earnings management.

2.1. Earnings Management – definitions and motives

Earning is defined as a positive difference between income and expenses, or as an increase in the capital of the owner from the economic activity of the business entity.It is considered to be the most synthetic absolute value category. Earning reflects all factors of successful business. Its amount directly affects the increase in the value of the enterprise to the owner for the period and the ability and rate of its expanded production. There are several definitions of the earnings management in particular depending on the positive or negative understanding of the EM concept by the authors. One of the first authors dealing with the issue of earnings management was Copeland (1968), who defined it as offsetting year-on-year fluctuations in profits by moving them from the most successful periods, where profits are highest, to less successful periods, where profits are the lowest to reduce negative consequences caused by these fluctuations. Lev (1989) defined EM as a method of manipulating financial records, the aim of which is to improve the financial situation of the company. Authors (Valaskova et al., 2019, Valaskova et al., 2015; Misankova et al., 2015; Kovacova et al., 2019) state that EM is a powerful tool for reducing business risk. Healy & Wahlen (1999) describe that EM initiatives occurs when managers make decisions about changes in financial reporting and structuring transactions to either mislead stakeholders about the economic performance of the business, to influence contractual results based on profit. Earnings management is the managerial choice of certain accounting policy to achieve a specific objective. (Scott, 2003) McKee (2005) defines earnings management as a “legal” management tool that is used to achieve favorable financial results. It also adds that this is a beneficial mechanism when used by managers to improve the information content of the reported profits. To compare the different perceptions of several authors' views, Ronen &Yari (2008) have compiled a table where they divided EM initiatives into three basic types: white, gray and black EM. White earnings management initiatives are connected with the possibility of a flexible choice of accounting policy to signal the company's future cash flows. Such an understanding of EM can be found in the works of Ronen & Sadan (1981), Demski et al. (1984), Suh (1990), Beneish (2001), Sankar & Subramanyam (2001). Gray earnings management consists of opportunistic or economically effective accounting method choice.

Such an understanding of EM can be found in the works of Arya et al. (2003), Fields et al. (2001) or Scott (2003). Black EM can be described as a method of using accounting tricks designed to distort or reduce the transparency of financial statements. Such an understanding of EM can be found in the works of Shipper (1989), Levitt (1998), Healy & Wahlen (1999), Tzur & Yaari (1999), Chtourou et al. (2001) or Miller & Bahnson (2002). (Ronen & Yaari, 2008). Mulford & Comiskey (2002) state following motives for EM initiatives:

- Avoiding the risk of stock prices decreasing if achieved earnings are lower than expected;
- Creating the best picture of profit to maximize the selling price of stocks if the company is considering an IPO;
- Keeping profit at the level needed to get the maximum possible premium;
- Reducing profit volatility due to one-off items;
- Also changes in management give rise to new management efforts to show lower earnings in the first periods after accession in order to attribute such a situation as a result of old management decisions.

Salaries are not consider as performance-based payments. On the other hand, there are performance-based payments like bonuses, stock grants or stock options in the company. The higher performance measured through profit is the higher payments manager gets. That's why performance-based payments are generally perceived as incentives of earnings management. CEO turnover should be understood as exchange of employees in the position of CEO. The predecessor CEO can get more benefits from inflating earnings, so that he/she hides any bad performance, extracts more earnings-based benefits in his/her last year and creates better chances for moving to another job. On the other hand, the successor CEO gets more benefits from deflating earnings, so that he/she decreases shareholders' expectations that allow reflecting better future performance. Managerial abilities significantly contribute to the variation of performance. Different managers have dissimilar styles in running their firms as they vary in their accounting preferences, disclosure choices, tax positions, and selecting and implementing corporate policies and earnings management strategies. Many works dealing with the effect of the corporate governance on earnings management have mainly documented that the quality of corporate governance influences the quality of earnings. (Brabenec, 2010; Hudakova et al., 2018; Khanh & Thu, 2019; Sosnowski, 2018) It can be state that strong governance mechanisms can generally decrease earnings management behaviour. Others works found that corporate governance can stimulate earnings management because managers are under more pressure to improve firm value. Before taking a loan, companies might be motivated to manipulate earnings upward in order to avoid reporting low earnings. Companies may also manipulate earnings downward because entering a loan agreement means a long term commitment that requires companies to meet the debtors' expectations over time. After taking a loan, the probability of earnings management depends on the financial health. Some studies also document that the size of the company as one of the main companies' characteristics has an impact on its earnings management behaviour (Lee & Choi, 2002) others document no influence (Siregar & Utama, 2008). Capital market motives involves factors that support earnings management through their impact on the company's stock price. If the stock price is fully determined by information about the company's economic value, then the capital market motives are not expected to have any influence on earnings management. However, because of the noisy nature of the capital markets, stock prices do not completely reflect the firms' values; hence earnings management is likely to occur. The final group of motives is also known as third-party motives of EM. Third parties need the accounting information to make decisions related to entering into business transactions with the company or indirectly revising the structure of the environment where the company is operating. In this sense, third parties influence the company's strategies in managing its resources to generate earnings.

The relations of the company with the external parties may influence its earnings management behaviour to be able to maintain its future interests with them.

3. BIBLIOMETRICS ANALYSIS – METHODS, RESULTS AND DISCUSSION

The aim of author's contribution is the literature review and bibliometric analysis of earnings management issue. This chapter describes methods and results based on bibliometrics analysis of earnings management issue.

3.1. Methods

Bibliometrics analysis is widely used. (White at al., 2019) Based on data from publications, bibliographic references, and citations, it is possible to examine historical developments in individual scientific areas and to reveal the often hidden relations between disciplines, authors or topics. (Nyons, 2001) As well as, the bibliometric analysis identifies the most recent topics of scientific research. The interest in bibliometric researches has been increasing thanks to information and communication technologies that enable users to access and process large amounts of data. At the same time, information and technological progress provides a means for clear and sophisticated visualization of results, eg. in the form of science maps or video presentations. Bibliometrics analysis deals with the quantitative aspects of information. Mathematical-statistical methods are used, mainly descriptive statistics methods to summarize results obtained from bibliographies or citation databases. However, also other methods based on a quantitative analysis of the relationships between several variables, allowing them to be visualized can be used. Three types of methods can be distinguished: Descriptive statistics methods (graphs/tables or descriptive characteristics); Matrix-based methods; Similarity-based methods (science maps). Bibliometrics analysis of scientific databases and their content of scientific publications operating with the concept of earnings management starts with using descriptive statistics methods, the second part of the analysis deals with science maps. The source of information for bibliometrics analysis is data from database records. Large specialized or multidisciplinary citation databases are often used. They provide data, as well as analytical tools for their bibliometics analysis. The source of information for the present research is Web of Science – an online database providing common access to the following citation indexes:

- Science Citation Index Expanded (SCI-E);
- Social Science Citation Index (SSCI);
- Arts & Humanities Citation Index (AHCI);
- Index Chemicus;
- Current Chemical Reaction;
- Conference Proceedings Citation Index -Science (CPCI-S);
- Conference Proceedings Citation Index -Social Sciences & Humanities (CPCI-SSH).

The following table 1 describes the basic dimensions of bibliometrics analysis.

THE BASIC DIMENSIONS	
Subject of bibliometrics analysis	Earnings management
Time perspective	2000 – 2019
The source of information	Web of Science
Using methods	Descriptive statistics methods Science maps

Table 1: The basic dimensions of bibliometrics analysis
(Source: Own processing)

3.2. Results and discussion

As was mentioned above, the first part of the author's contribution is focused on using descriptive statistics methods. The results of the descriptive statistics method used in bibliometrics analysis are shown in figures 1-3. In the beginning, the total sum of records for the title: "earnings management" was searched in the Web of Science database from 2000 – 2019. The database contains data from 1900 to 2020. As was mentioned above, the interest in earnings management issue has increased over the last period. The number of records dealing with earnings management from 1900 to 1999 did not even reach 10 publications per year. A significant increase in publications on this topic was noticed after 2000, so the period 2000 – 2019 was chosen to follow.

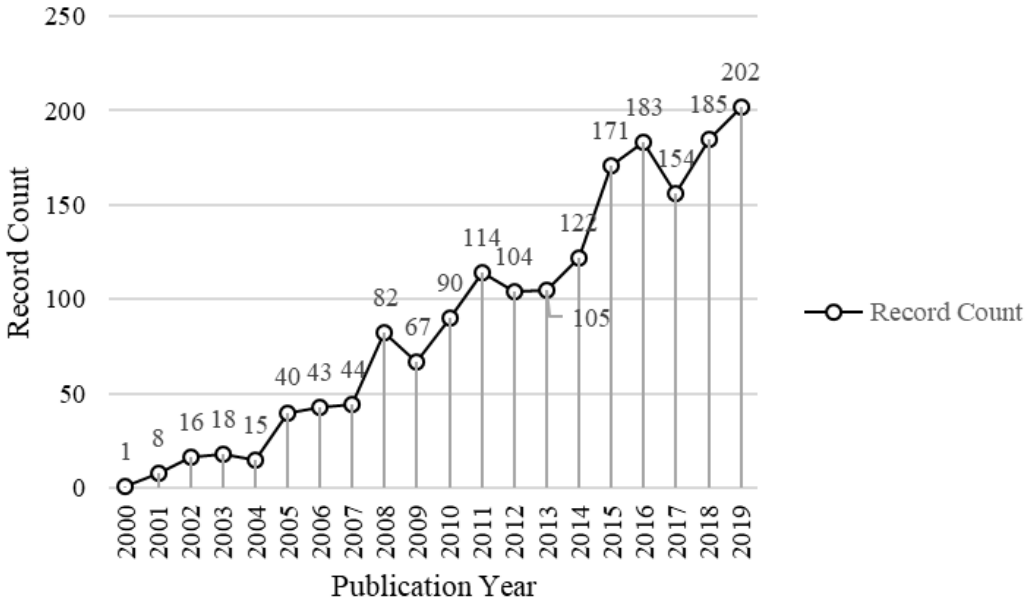

Figure 1: Development of the number of publications on EM in 2000-2019
(Source: Own processing based on Web of Science database)

The topicality of the EM issue is declared by the following results of bibliometrics analysis. Figure 1 confirms the topicality of the EM issue, as well as the author's statement that that interest in this topic in the scientific community has increased significantly over the last 10 years.

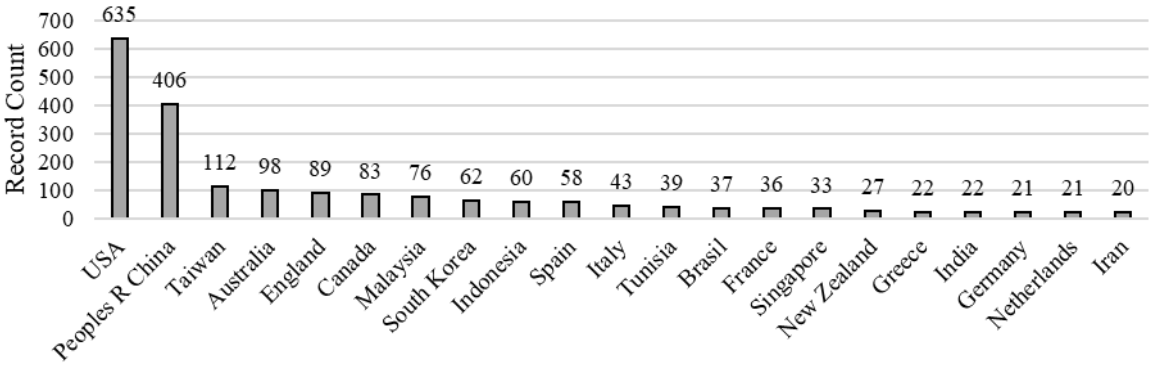

Figure 2: Frequency of "earnings management" publications in selected countries
(Source: Own processing based on Web of Science database)

Figure 2 shows the frequency of "EM" publication in selected countries from 2000 to 2019. The only countries with a frequency higher than 20 records are displayed. The USA has the highest frequency of articles dealing with earnings management issue - 635. From the European countries, articles dealing with earnings management issue are published mainly in the UK, Spain, Italy, France, Greece, Germany or Netherlands. Two articles on the topic of earnings management registered in the Web of Science were published in Slovakia from 2000 to 2019. Following figure 3 shows the number of publications with the term "earnings management" in different fields of science.

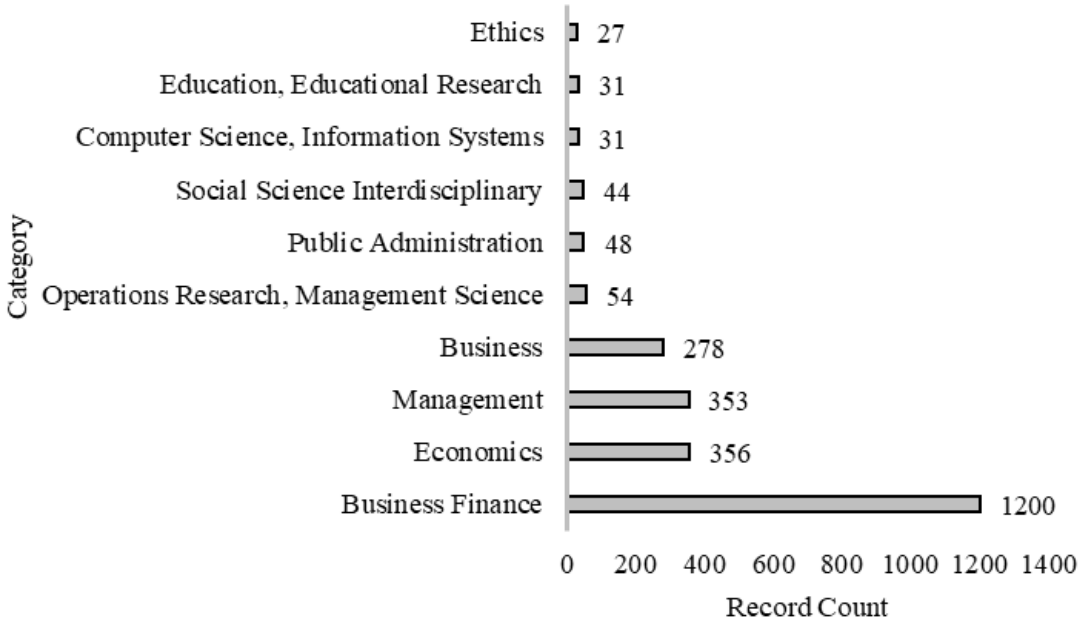

Figure 3: "Earnings management" in different fields of science
(Source: Own processing based on Web of Science database)

Based on figure 3, it can be stated that the earnings management issue is a multidisciplinary topic. The second part of bibliometrics analysis is based on the using a similarity-based method to create science maps. Science maps were developed in the 1970s. Science maps are symbolic representations of scientific fields or organisations in which the elements of the map are associated with topics or themes. Elements are positioned in the map so that other elements with related or similar characteristics are located in their vicinity, while those elements that are dissimilar are positioned at distant locations (Noyons, 2001). The elements in the map can be authors, publications, institutes, scientific topics, or instruments, etc. The purpose of the representation is to enable the user to explore relations among the elements. There are several software for creation science maps. VOSviewer - a software tool was used for constructing and visualizing bibliometric networks. This software was developed by Nees Jan van Eck and Ludo Waltman at Leiden University's Centre for Science and Technology Studies (CWTS). VOSviewer version 1.6.14 released on 27th January, 2020 was used. The results are represented by figures 4 – 7. Data from 2000 – 2019 obtained from Web of Science database was used.

Figure following on the next page

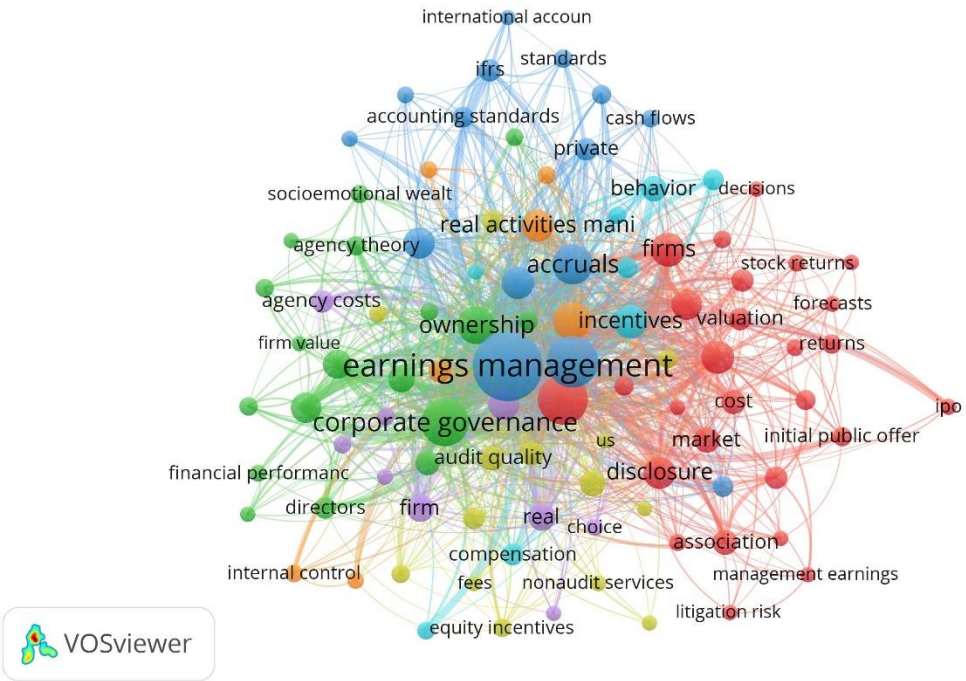

Figure 4: Keyword science map for publications with the term "earnings management" (Source: Own processing by VOSviewer using)

Figure 4 represents a network visualization (clusters) of keyword publications on the topic of earnings management. The author analyzes keywords to obtain information about factors related to the earnings management issue. The size of the circle represents the weight. The larger circle is, the higher weight it has. The color of the circles determines the cluster to which the keyword belongs. Individual links are links between items. The distance between the circles reflects the correlation between the keyword and the term “earnings management”. The closer keyword is to the term “earnings management”, the stronger the relationship can be observed between keyword and the term “earnings management”. It can be seen that research deals with earnings management issue also contains keywords like ownership, corporate governance, audit quality, firm, accruals, accounting standards and so on.

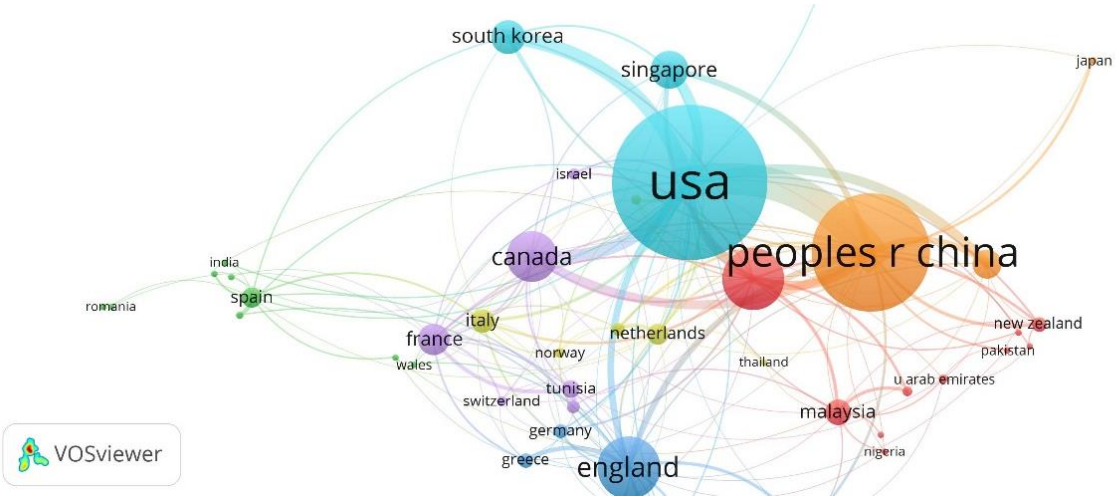

Figure 5: Science map for the origin of publications dealing with „earnings management“ (Source: Own processing by VOSviewer using)

Figure 5 represents the origin of publications dealing with earnings management issue. The analysis shows that in the scientific community the most cited publications on the subject of EM come from the US, China, Australia (Note: Australia is represents by red circle between USA and China but its name is covered by USA and China), England, Canada and so on. Links between circles also represent cooperation between countries in the research.

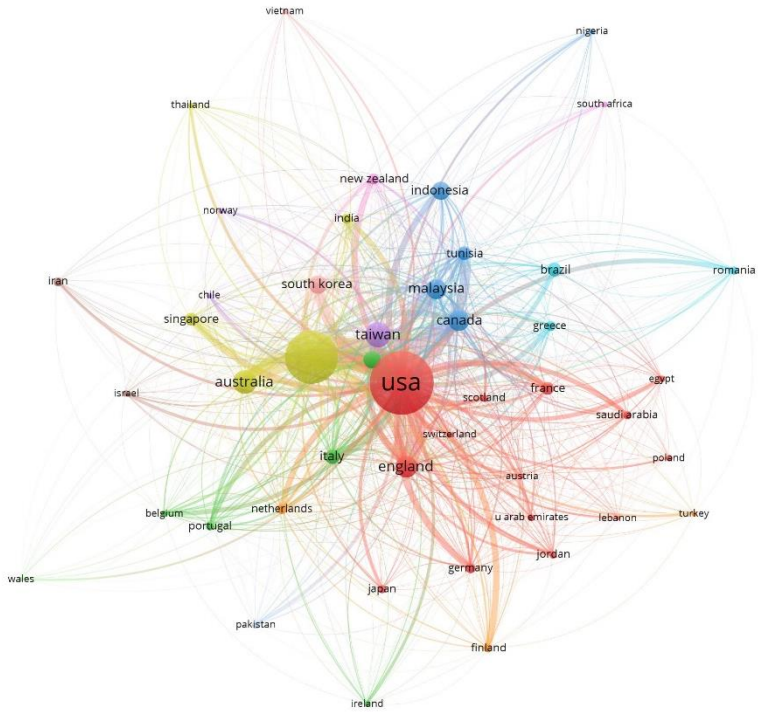

Figure 6: Science map for the countries that most frequently cite publications with the term "earnings management"
(Source: Own processing by VOSviewer using)

Figure 6 shows the origin of the authors who most often cite publications dealing with earnings management issue. Most publications are cited by authors also from US, China (Note: It is represented by yellow circle next to the USA), Australia, England, Taiwan or Canada.

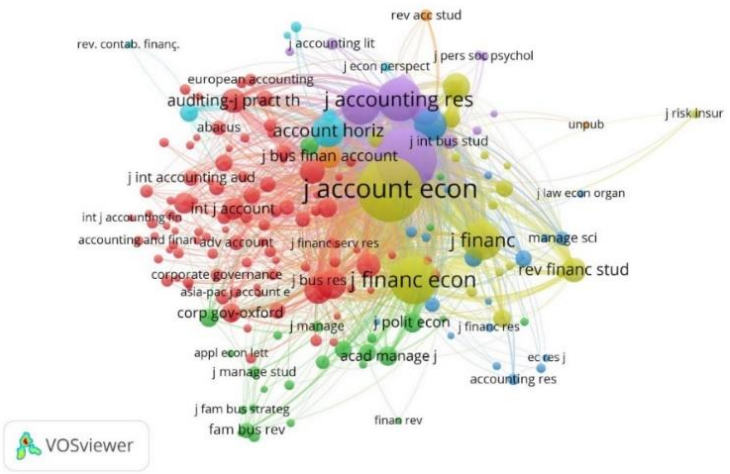

Figure 7: Science map for the journals that publish research with the term "earnings management"
(Source: Own processing by VOSviewer using)

4. CONCLUSION

Bibliometric analysis has become widely known as a supporting tool for processes evaluation, as well as depicting development of science, a particular discipline or researches issues and the relationships between them, their dynamics, etc. Bibliometric analysis as a part of researches has several advantages. Based on the keyword science map, researchers are able to change the point of view. Even at first glance, an exclusively economic problem can be solved at an interdisciplinary level, bringing another point of view to our research. It is possible to identify areas of research in the field. Science map for the countries that most frequently cite publications with the selected term or science map for the origin of publications dealing with the selected term help us to identify countries where researchers are interested in the issue. Another important point is scientific cooperation. It is an essential feature of scientific research. Scientific cooperation gives researchers an opportunity to share knowledge or specialized technical equipment. Scientists are looking for experts dealing with the same issues, or are looking for experts from other areas in cases of a multidisciplinary research. Bibliometric analysis may be a suitable tool for such a search. Descriptive statistics and similarity-based methods were used to conduct bibliometrics analysis of the term "earning management".

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RATIONALITY OF PUBLIC INFLATION EXPECTATIONS

Avaz Alakbarov
Azerbaijan State University of Economics (UNEC)
Baku, Istiqlaliyyat str., 6, AZ1001, Azerbaijan
avaz.alakbarov@unec.edu.az

Anna Buriak
Sumy State University
Sumy, Rimsky-Korsakov str., 2, 40007, Ukraine
a.buriak@uabs.sumdu.edu.ua

Anna Lasukova
Sumy State University
Sumy, Rimsky-Korsakov str., 2, 40007, Ukraine
a.lasukova@uabs.sumdu.edu.ua

ABSTRACT

Ensuring price and financial stability under conditions of inflation targeting involves management of the public inflation expectations. Inflation expectations are not only an indicator of future price dynamics but also an indicator of uncertainty and confidence in the financial sector – in particular in the central bank and its monetary policy. An analysis of inflation sentiments, including gaps between inflation expectations and real inflation, makes it possible to distinguish between periods of "price optimism" – when inflation expectations are low and "price pessimism" – when inflation expectations are overstated compared to real inflation. Understanding the mechanism of the inflation expectations formation requires testing them for rationality to apply sound monetary decisions and instruments by the regulator, and to prevent a crisis of confidence in the central bank. Testing the rationality of expectations is based on the theory (concept) of rational expectations, according to which agents formulate their expectations based on the using of all available market information. If there is a systematic error (dispersion of individual expectations around mathematical expectations) – there is a revaluation or underestimation of price dynamics in the future, that is, the irrationality of the formation of inflation expectations. The use of vector autoregression (VAR) allows to investigate the impact of the dynamics of underlying shocks on the inflation expectations of economic agents, using lag values of endogenous variables. The Bayesian approach is used to estimate the model parameters by applying the likelihood function to estimate the a priori parameter distribution. Identification of the inflation of previous periods expectations impact on price expectations indicates a mechanism for irrational decision-making – "adaptive learning".

Keywords: *Inflation, Price stability, Public expectations, Trust crisis, Central bank, Vector autoregression*

1. INTRODUCTION

The global financial crisis of 2007-2008 was accompanied with protracted trust crisis – the loss of public confidence in financial markets, institutions and other economic agents (Subeh, Boychenko, 2018; Gillespie, Hurley, 2013; Moskovicz, 2018; Gupta, 2017; Greco, 2018; Bagmet and Haponova, 2018). Trust became crucial for economic dynamics and financial market activity, as a result, requiring active and sufficient efforts from the government (Levchenko et al., 2018, 2019; Rubanov et al., 2019; Bilan et al., 2019). Today financial stability remains the main prerequisite for public trust in the financial system.

The task of ensuring financial and price stability is assigned to the regulatory bodies (usually central banks) responsible for management of inflation expectations of society in the context of inflation targeting policy (Svirskyi, Melykh, 2017; Poliakh, Nuriddin, 2017). Price stability will be achieved only when price expectations can be curbed. Inflation expectations are not only an indicator of future price dynamics, but also an indicator of uncertainty and trust in the financial system (trust in the central bank and its monetary policy) (Jiang, Wang, 2018). A sign of trust will be the maximum convergence of inflation expectations and the inflation rate planned by the central bank – the target, which in turn determines the effectiveness of regulatory measures in the monetary area. Thus significant deviations of inflationary expectations of society from the target indicate a high level of public uncertainty, loss of trust in the central bank and its monetary policy, and, as a consequence, loss of control by the central bank over the expectations of economic agents. Therefore inflation expectations could be a channel for the formation of a trust crisis in the central bank. Accordingly, transparency became essential feature of modern regulatory bodies activity as well as commercial entities including financial intermediaries (Morscher et al., 2017; Barhaq, Zakutniaia, 2017; Logan, Esmanov, 2017; Vasilieva et al., 2017; Druhov, 2019; Bilan, 2019). Understanding the channels of trust crisis formation in the financial system requires a deeper studying of forming inflation expectations mechanism, including checking their rationality, in order to apply prudent monetary decisions and instruments, and prevent the crisis of trust in the central bank and, as a result, price instability. A review of current academic research on the formation of inflation expectations by economic agents points to the focus on the research of inflation expectations determinants in the context of the transmission mechanism of monetary policy and inflation targeting, and in recent years - in the using of unconventional monetary policy. The ultimate goal of studying inflation expectations is to forecast inflation dynamics in the country and increase the efficiency of the transmission mechanism of monetary policy. Level of interest rates, GDP and unemployment rates are considered the main drivers of inflation expectations (Belke et al, 2018). A number of studies in recent years have empirically shown an increase in the impact on inflation expectations of the dynamics of gasoline prices, especially in the post-crisis period of development (Sussman, Zohar, 2015; Elliot et al., 2015; Badel, McGillicuddy, 2015). The aim of this research is to deepen the understanding of the mechanism of the inflation expectations formation with focus on testing the rationality and efficiency of public expectations to apply sound monetary decisions and instruments.

2. METHODOLOGY OF THE RESEARCH

The most common methodological approach to modeling inflation expectations is vector autoregression (VAR) which allows to study the effect of the dynamics of major shocks on inflation expectations of economic agents using lag values of endogenous variables. The use of lag values is possible when inflation expectations are influenced by inflation of previous periods. The Bayesian approach is used to estimate the parameters of the model by applying the probability function for priori distribution of parameters. The mechanism of formation of inflation expectations (expect_inf) is considered on the example of business expectations in Ukraine. The data set contains a sample based on publications of National Bank of Ukraine (further as NBU) – a survey of business expectations for the period from 01.01.2010 to 01.01.2019 (quarterly data). Software such as Stata 15.1 and Eviews 10.0 were used as software modeling implementations; and Python (to fill in missing data for Q2 and Q3 2013 using the multivariate imputation algorithm). Using Pearson's correlation coefficient and variance coefficient the following determinants were selected (out of about 20 possible) for inflation expectations:

- real salary index (*ind_sal*);
- unemployment rate in % to the working age population (*unemployed*);

- inflation rate (*cpi*);
- index of the real effective exchange rate of the national currency (*exchan_rat*);
- NBU discount rate (*discount_rt*).

2.1. Stationarity analysis on data

Before modeling time series data were checked for stationarity of variables by applying the Dickie-Fuller test to check the single root (ADF-test). Results of testing the statistical hypothesis on the stationary formation of inflation expectations and its determinants are presented below (Fig.1). To implement this the value of t-statistics for the time series parameter is calculated and compared with the upper and lower critical values of DF-statistics. If the value of the calculated t-statistic is less than the lower critical value, then the null hypothesis is rejected and the series is considered to be stationary. According to the results of testing variables, it was found that the vast majority of variables are non-stationary.

```
                                  Expect_inf

Dickey-Fuller test for unit root                   Number of obs   =        30

                               ---------- Interpolated Dickey-Fuller ---------
                  Test         1% Critical       5% Critical      10% Critical
               Statistic           Value             Value             Value
------------------------------------------------------------------------------
 Z(t)             -1.784            -3.716            -2.986            -2.624
------------------------------------------------------------------------------
MacKinnon approximate p-value for Z(t) = 0.3886

Dickey-Fuller test for unit root                   Number of obs   =        28

                               ---------- Interpolated Dickey-Fuller ---------
                  Test         1% Critical       5% Critical      10% Critical
               Statistic           Value             Value             Value
------------------------------------------------------------------------------
 Z(t)             -5.004            -3.730            -2.992            -2.626
------------------------------------------------------------------------------
MacKinnon approximate p-value for Z(t) = 0.0000
```

Figure 1: Fragment of data analysis on stationarity (Dickey-Fuller test)

Since most of the variables turned out to be nonstationary, they were transformed into stationary by the method of the first differences. For stationary variables, the Granger test has already been performed for causal relationships between variables to be modeled by VAR equations further. The essence of the null hypothesis is that a factor is not the cause of another factor. The hypothesis is tested on the basis of Wald's statistics and P-value - if the latter is less than 0.05, then the null hypothesis is refused and the causal relationship is confirmed. Testing was performed for lags from 1 to 3 quarters.

2.2. Using lag values in the model based on information criteria

Determination of the optimal number of lag values in the VAR-model is carried out on the basis of information criteria - a measure of the relative quality of econometric models for a given data set. Information criteria are used exclusively to compare models with each other, without meaningful interpretation of the values of these criteria. They do not allow testing of models in the sense of testing statistical hypotheses. The smaller the value of the criteria, the higher the relative quality of the model. The Akaike Information Criterion (AIC), the Bayesian Schwartz Information Criterion (SBIC), and the Hannah Quinn Criterion (HQIC) indicate that 4 lags are preferred. Despite the fact that according to the criteria, the model with 4 lags is statistically reliable, the model with three lags is more optimal for the available number of observations (Fig.2). Therefore, in this study we will use a model with 3 lags.

Sample: 2010q4 - 2019q1

lag	LL	LR	df	p	FPE	AIC	HQIC	SBIC
0	-978.774				5.1e+18	65.7849	65.9044	66.1586
1	-767.71	422.13	64	0.000	3.3e+14	55.9807	57.0565	59.3436
2	-672.23	190.96	64	0.000	1.2e+14	53.882	55.9141	60.2341
3	981.996	3308.5	64	0.000	1.1e-30*	-52.133	-49.1447	-42.7917
4	6386.88	10810*	64	0.000	.	-409.792*	-406.206*	-398.583*

Figure 2: Information criteria of the VAR model

2.3. Model specification

Further for the analysis of the impact on inflation expectations of business (*d_expect_inf*): the index of real salary (*d_ind_sal*), the unemployment rate (*d_unempl*), the inflation rate (*d_cpi*), the index of the real effective exchange rate of national currency (*exchan_rat*) and the discount rate (*d_discount_rt*) in the past three periods (quarters) - one past quarter (-1), two past quarters (-2), three past quarters (-3), we will implement the following specification of the VAR model:

$$expect_inf = c_{(1)} * expect_inf_{(-1)} + c_{(2)} * expect_inf_{(-2)} + c_{(3)} * expect_inf_{(-3)} + c_{(4)} * cpi_{(-1)} + c_{(5)} * cpi_{(-2)} + c_{(6)} * cpi_{(-3)} + c_{(7)} * exchan_rat_{(-1)} + c_{(8)} * exchan_rat_{(-2)} + c_{(9)} * exchan_rat_{(-3)} + c_{(10)} * d_ind_sal_{(-1)} + c_{(11)} * d_ind_sal_{(-2)} + c_{(12)} * d_ind_sal_{(-3)} + c_{(13)} * unempl_{(-1)} + c_{(14)} * unempl_{(-2)} + c_{(15)} * unempl_{(-3)} + c_{(16)} * discount_rt_{(-1)} + c_{(17)} * discount_rt_{(-2)} + c_{(18)} * discount_rt_{(-3)} + c_{(19)}$$

The formalized view of the model will be followed:

$$expect_inf = 0.055 * expect_inf_{(-1)} - 0.949 * expect_inf_{(-2)} + 1.038 * expect_inf_{(-3)} + 0.541 * cpi_{(-1)} + 1.047 * cpi_{(-2)} + 0.539 * cpi_{(-3)} - 12.375 * exchan_rat_{(-1)} - 46.015 * exchan_rat_{(-2)} - 25.333 * exchan_rat_{(-3)} + 0.370 * d_ind_sal_{(-1)} - 0.779 * d_ind_sal_{(-2)} + 0.011 * d_ind_sal_{(-3)} +- 2.296 * unempl_{(-1)} - 6.160 * unempl_{(-2)} - 3.508 * unempl_{(-3)} - 0.924 * discount_rt_{(-1)} + 0.846 * discount_rt_{(-2)} - 0.495 * discount_rt_{(-3)} - 66.945$$

According to the modeling results a statistical insignificance of a number of indicators was revealed – in particular change of inflation expectations in 1 quarter, inflation in 1 and 3 quarters, real salary in 3 quarters, unemployment rate in 1 quarter. The most influential indicator was the change in the index of the real effective exchange rate - an increase of 1% in the index of the real effective exchange rate of the national currency leads to a decrease in the value of inflation expectations in the 1st quarter by 12,374 percentage points; in 2 quarters - by 46,015 percentage points; in 3 quarters - by 25,332 percentage points. The results show that the strengthening of the real exchange rate of the hryvnia creates the preconditions for price optimism among businesses. The unemployment rate in the country has a significant impact on price expectations - a change of 1% in the unemployment rate on average reduces the value of inflation expectations by 2,160 percentage points after 2 quarters, and by 3,507 percentage points after 3 quarters. The effect of the NBU discount rate differs at different intervals - a change of 1% in the NBU discount rate on average reduces the value of inflation expectations by 0.923 percentage points in 1 quarter; increases by 0.846 percentage points - in 2 quarters; decreases by 0.495 percentage points in 3 quarters.

Similarly, the multidirectional effect has:

1) change in real salaries – a change of 1% of the real salary index on average increases the value of inflation expectations by 0.369 percentage points after 1 quarter and decreases by 0.778 percentage points in 2 quarters;
2) change in inflation expectations of previous periods – a change of 1% on average reduces the value of inflation expectations by 0.949 percentage points after 1 quarter and increases the value by 1,038 percentage points in 3 quarters.

Regarding the impact of inflation, a change of 1% of the inflation index increases the value of inflation expectations by 1,047 percentage points in 2 quarters. Analyzing the quality of the model, it should be noted that the coefficient R-square shows the value of the variance of inflation expectations, explained by the factors included in the model. In our case, the factors included in the model explain 97% of the variance in inflation expectations. The main problem with the application of this coefficient is that its value increases (does not decrease) from the addition of new factors to the model, regardless of their direct impact. The standard regression error (S.E. of regression), also known as the standard estimation error, is the average distance over which the observed values deviate from the regression line. The lower its value, the higher the predicted accuracy of the model.

2.4. Impulse response function estimation

Impulse response function analysis could be an additional estimation of the VAR model. The shock for the variable affects not only directly on this variable, but is also transmitted to all other endogenous variables through the dynamic (lag) structure of the VAR. The impulse response function tracks the effect of a single shock on current and future values of endogenous variables. To better understand the obtained coefficients of the model and the dynamics between the variables, we analyze the orthogonal pulse-response function (orthogonalized IRF). From the figure below (Fig. 3) we can conclude that the dynamics of inflation expectations is most influenced by the index of real salaries and past values of inflation expectations - when adding a positive shock to the dynamics of these factors (increasing their value by one standard deviation). The NBU discount rate has the least impact on the dynamics of inflation expectations. Therefore, the biggest shocks for business price expectations should be considered the dynamics of salaries, which directly shapes domestic consumer demand for business goods/services, and inflation expectations of previous periods - activates the mechanism of irrational decision-making - "adaptive learning" - focus on past experience, not on the real dynamics of indicators. The decomposition of the forecast error variance (FEVD) indicates the proportion of variation of the dependent variable explained by each of the independent variables (shows which of the independent variables is "stronger" in explaining the variation of the dependent variable over time). The decomposition showed that initially 100% of the variance in inflation expectations was due to previous shocks in inflation expectations. This trend decreases to about 20% in 3-4 quarters. Initially the fluctuation of inflation expectations is slightly explained by shocks in the growth of the real salary index, but this effect increases to 45% in 3-4 quarters. Other factors do not significantly affect inflation expectations. Thus the inflation expectations of business are most influenced by past values of inflation expectations and the value of the real salary index. It is necessary also to note some discrepancy between the IRF and the FEVD for an effective exchange rate. The reason for this difference may be that increasing the rate by 1 unit for an effective exchange rate is a shock, and the dynamics of other factors is not significantly affected.

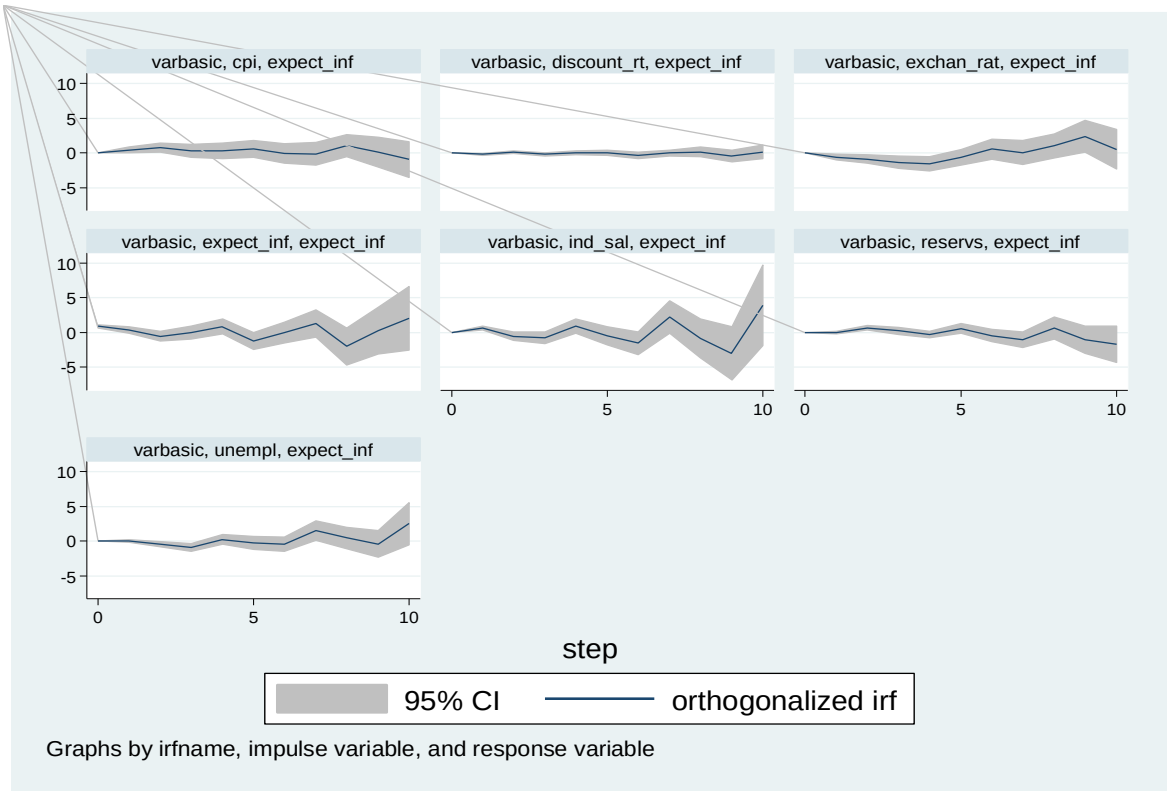

Figure 3: Orthogonal function of the pulse response

3. RATIONALITY AND EFFICIENCY OF INFLATION EXPECTATIONS

Verification of the rationality of business expectations is based on the theory (concept) of rational expectations, according to which agents form their expectations based on the use of all available market information. If there is a systematic error (ε_t, the variance of individual business expectations around the mathematical expectation) - there is an overestimation or underestimation of price dynamics in the future, the irrationality of the formation of inflation expectations. Hypothesis H1 is that, α, $\beta = 0$. If the hypothesis cannot be rejected, then the errors in anticipation of inflation are zero, expectations are unbiased in the statistical sense. Checking the inflation expectations of business in Ukraine (Fig. 4) shows the following:

1) α (cons = -10.64698) is not equal to 0, which means that business representatives on average overestimate (negative value) the future level of inflation;
2) β (Expect_inf = 0,3947554) is not 0, which means that the strength of the expected inflation rate affects the expectation error, for example, if a business expects an extremely high future inflation rate, then most likely it will not and business has formed its expectations with errors. Thus, the mismatch between inflation and inflation expectations of business is due to macroeconomic factors that form a systematic error. To check the impact of macroeconomic factors allows to check inflation expectations on the efficiency of information using. The hypothesis being tested is that if independent variables are significant, they affect errors and businesses use this information inefficiently.

Figure following on the next page

```
. reg gap expect_inf

      Source |       SS           df       MS      Number of obs   =        34
-------------+----------------------------------   F(1, 32)        =      2.35
       Model |  177.347193         1  177.347193   Prob > F        =    0.1350
    Residual |  2413.12815        32  75.4102545   R-squared       =    0.0685
-------------+----------------------------------   Adj R-squared   =    0.0394
       Total |  2590.47534        33  78.4992527   Root MSE        =    8.6839

------------------------------------------------------------------------------
-
         gap |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
-
  Expect_inf |   .3947554   .2574134     1.53   0.135    -.1295785    .9190894
       _cons |  -10.64698   4.025461    -2.64   0.013    -18.84658   -2.447384
------------------------------------------------------------------------------
```

Figure 4: The results of checking the inflation expectations of business for the rationality of formation

Analyzing the impact of macroeconomic variables on business error in the inflation forecast, we can state that: 1) since only the inflation index is significant (P> | t | = 0.026) it turns out that only this indicator is studied by business inefficiently; 2) other macroeconomic factors do not significantly influence on errors in business expectations. It can be argued that businesses use information about these factors more effectively to forecast future inflation.

4. CONCLUSION

This paper focuses on the identification and formalization of the influence of the channel of public (economic agents) expectations on the formation of the trust crisis in the financial system. Inflation expectations are regarded as not only an indicator and determinant of future price dynamics, but also an indicator of uncertainty and trust in the financial system (trust in the central bank and its monetary policy). Understanding of the forming inflation expectations mechanism, including checking their rationality is necessary for applying prudent monetary decisions and instruments, and prevent the crisis of trust in the central bank and, as a result, price instability. The application of vector-autoregressive modeling of inflation expectations of businesses in Ukraine allows to deepen the mechanism of formation of the trust, to formalize the strength of the main shocks for expectations, to confirm the irrationality and inefficiency of decision-making by agents due to the existence of a mechanism of "adaptive learning". Impulse response function estimation points that the biggest shocks for business price expectations should be considered the dynamics of salaries, which directly shapes domestic consumer demand for business goods/services, and inflation expectations of previous periods - activates the mechanism of irrational decision-making - "adaptive learning" - focus on past experience, not on the real dynamics of indicators.

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CENTRAL BANK INDEPENDENCE MEASURING

Azer Babayev
Azerbaijan State University of Economics (UNEC)
Baku, Istiqlaliyyat str., 6, AZ1001, Azerbaijan
azik.347@yandex.ru

Tetyana Vasilyeva
Sumy State University
Sumy, Rimsky-Korsakov str., 2, 40007, Ukraine
tavasilyeva@fem.sumdu.edu.ua

Victoria Dudchenko
Sumy State University, Ukraine
Sumy, Rimsky-Korsakov str., 2, 40007, Ukraine
v.dudchenko@uabs.sumdu.edu.ua

ABSTRACT
Nowadays independence of central banks creates a background not only for the price stability but also for the banking system stability. The negative experience of political and economic crises attests to the priority of ensuring central bank independence as the main prerequisite for its effective activity in regulating the banking system. Existing researches define different types of central banks' efficiency. It is determined that the most general of them is the operational, functional, financial, political, personal, legal, institutional independence of the central bank. Each type of independence determines the specific indicators that should be used to measure it. The most important task in building an integrated central bank independence indicator is to choose the right approach to combine a number of these specific indicators. To solve this problem it is necessary to correctly choose the number of indicators describing each direction of independence and their weights in the general structure. Despite the existence of a number of integrated indices of central banks' independence, their structure often depends on the subjective approach of authors' and does not take into account all existing aspects. The aim of the paper is to develop the complex approach for central bank independence measuring that include its different dimensions evaluated both quantitative and qualitative indicators. This was done by summarizing the different types of central bank independence and justifying the criteria to be used to characterize them. The conducted study forms a basis for measuring the role of central bank independence in ensuring its performance and achieving its strategic and tactical goals.
Keywords: *Central bank, Independence, Indicators, Index*

1. INTRODUCTION

The negative effects of the economic and social recession caused by the onset of the financial, economic and political crises have led to increased attention to ensuring financial stability. The most effective tool to counteract financial instability is the development of a regulatory environment (Jiang, Wang, 2017). Financial and macroeconomic stability are complex phenomena, determined by a significant list of social, economic and institutional factors (Bilan et al., 2019c; Louis, 2017; Subeh, Boiko, 2017), the most important of which is the effective regulation of the economy. Ensuring financial stability, in particular, the stability of the banking system, is a subject of great relevance, which forms the basis for the stable functioning of the economy as a whole (Koziuk, 2017). The banking system has been transformed in recent years. In particular, the growing influence of technology on the development of commercial banks has been proven

(Bilan et al., 2019b; Vasylieva et al., 2017), which forms a new model of banking management and requires changes in the banking regulation system. The banking systems of the most developed countries of the world have already transformed in the direction of their digitization (Druhov et al., 2019; Rubanov et al., 2019), which indicates the need to create a flexible regulatory environment for their effective functioning. On the other hand, banks' stability remains a core concept of scientific studies (Zarutska, 2018). In this context, it is relevant to ensure the independence of banking regulation and directly of the central bank, which creates the preconditions for maximizing its effectiveness. The existing system of financial regulation in the country should create conditions for innovative development of banks (Peresadko, Nikolaieva, 2012) and ensure the quality of banking services (Leonov et al., 2018). Dkhili (2018), Hrytsenko et al. (2018) grounded an importance of institutional component in ensuring of regulation efficiency. Despite the development of selfregulation theories (Kouassi, 2018) the governance remains a central compoment of preconditions for banks' efficient and stable functioning (Agnihotri, Gupta, 2019). Convergence of economic and social processes leads to synchronization of social and business cycles (Bilan et al., 2019a; Dave, 2017) and increasing attention to issues of trust in the economy, especially in financial and banking system (Brychko et al., 2019). Social protection becomes an important target of regulation system development (Bagmet, Obeid, 2017). This demonstrates the urgency of increasing the independence and objectivity of banking regulation in the context of ensuring the smoothing of trust cycles and their restoration (Buriak et al., 2019; Poliakh, Alikariyev, 2017). Another relevant area of development of the regulatory environment is to ensure its transparency, which today not only plays an important communication role, but also a tool for improving the efficiency and sustainability of the regulatory environment (Makarenko, Sirkovska, 2017; Vasilieva et al., 2017; Vasyl'eva et al., 2017). It is proven, that financial regulation transparency creates a background for its independence enhancing (Logan, Esmanov, 2017) as well as information disclosure has a strong relationship with financial inclusion (Morsher et al., 2017). Thus we come to the conclusion that the independence of the central bank is associated with a wide range of aspects of its functioning and development of the financial system, which determines the specifics of the approach to the construction of indicators for its measurement.

2. LITERATURE REVIEW

The issue of central bank independence has been the focus of scholars for a long time. The most general approach to interpreting the essence of central bank independence is to define it as minimizing the government's influence on the procedures and decisions taken by the central bank (Mathew, 2006). At the same time, the parameters of independence are indicators of financial transactions, independence of central bank staff, independence of procedures, etc. This formed the basis for determining the different types of central bank independence. The development of approaches to measuring the independence of the central bank was accompanied by the separation of its individual areas. The fundamental principles of measuring the independence of the central bank were laid by Grilli, Maschiandaro, Tabellini (1991), who singled out the criteria of political and economic independence. The criteria of political and operational independence defined by Balls, Hovat, and Stansbury (2018) are similar to those defined within the GMT-index of political and economic independence. Zuckerman, Webb, Neyapti (1992) have developed a central bank independence measurement index (CWN-index) that includes the following groups of indicators concerning to the peculiarities of appointment and dismissal of the chief executive officer (CEO), formulation of monetary policy, central bank objectives and limitation of government lending. In subsequent studies, these indicators formed the basis for the formulation of personal, functional, institutional and financial independence of the central bank. At the same time, the set of criteria for evaluating each of these types differs within each approach.

Position of the European Central Bank (Smaghi, 2007) aimed at identifying three areas of central bank independence: functional (the ability to freely choose monetary policy instruments aimed at achieving its main goal); personal (independence of central bank management – CEO and central bank board); financial (reflects the freedom and certainty of the central bank at the disposal of its financial resources). Another approach is demonstrated by Sheppard (2008), who concentrates on the independence of the goals and instruments of the central bank. Thus, the independence of goals characterizes the ability of the central bank to independently choose the target values of inflation and unemployment, based on the principle of priority to achieve the target level of inflation over unemployment (functional independence). In turn, the independence of the instruments allows the bank to simplify the choice of levers of influence on the actual employment and unemployment rates, while focusing on inflation and taking into account public interests in the labor market (instrumental or institutional independence). It should be noted that this approach is quite limited, as in fact there is a concentration on the main function of the central bank – to ensure price stability, ignoring other areas of its activities. Kremen et al. (2018) propose to measure independence of different authorities in financial regulation by similar approach with separation of institutional, operational and financial aspects of independence. Ivanovich (2014) demonstrates a broader approach, distinguishing all four types of central bank independence: 1) functional – related to the freedom to choose the objectives of monetary policy; 2) institutional – independent choice of monetary policy instruments and specifics of their application; 3) personal – characterizes the peculiarities of the formation of the central bank management; 4) financial – the independence of the central bank from the budget and the prohibition of budget financing by the central bank. At the same time, the author did not specify the list of indicators that should characterize each of these four types of independence. A similar approach with the separation of such four types of independence was formed in the study of central bank independence, defined by the criteria of convergence of banking legislation in the Eurozone (Pisha, 2011). Thus, in this approach both the list of the criteria characterizing each of kinds of independence, and the alternatives allowing to establish their numerical values for calculation of integral value were defined. Another approach proposed by Mathew (2006) for calculating the central bank's independence index involves only three components: the independence of monetary policy (taking into account both objectives and instruments), financial independence and political or personal independence. Romelli (2018) proposes an extended index of central bank independence, which includes personal independence (presented by the criteria for the appointment of the CEO and board of the central bank), functional independence in relation to monetary policy objectives, instrumental independence in monetary policy implementation, and financial independence in using the central bank's own funds, as well as a separate government lending unit. In addition, the author identified a unit of accountability. Another approach to determining the types of central bank independence is related to the choice of method of forming the information base for their evaluation. In this context, a distinction is made between de jure independence of the central bank, reflected by the provisions of national legislation and de facto independence, the measurement of which is based on analysis of the country's experience on the implementation of certain aspects of the central bank functioning. Accordingly, to assess legal independence, a historical analysis of the regulatory framework governing the activities of the central bank is conducted, while actual independence is most often assessed through surveys. At the same time, the composition of the criteria of de jure and de facto independence of the central bank showed that within their characteristics it is possible to differentiate certain types of independence presented above. So, Fouad, Fayed, Emam (2019) proposed the following blocks of components de jure and de facto indices of central bank independence: CEO appointment and dismissal; central bank board appointment and dismissal; policy goals and formulation; government lending; financial independence, accountability, transparency and exchange policy.

At the same time, the consideration of transparency and accountability as indicators of central bank independence remains debatable, especially from the point of view of taking them into account as equivalent parameters to the previous characteristics. Based on the analysis, it can be stated that the assessment of the independence of the central bank should be carried out on four criteria: personal, functional, instrumental and financial independence. This approach will allow to sufficiently generalize the existing common indicators, as well as to conduct further analysis in terms of the priority of individual blocks of independence. That is why the research should include an analysis of the indicators that shape the different types of central bank independence. One of the most important tasks in forming an integral index for assessing central bank independence is to choose an approach to grouping indicators. The selection of the indicators that most characterize the process under study can be made using regression modeling (Kozmenko, Kuzmenko, 2011; Vasylieva et al., 2018; Kostel et al., 2017). Another approach to weight the indicators is their comparison with some calcucaled average level (Buriak et al., 2015). Levchenko et al. (2019) use the Fishburn's method for prioritizing the components of the integral index and further setting the weighting coefficients. Levchenko et al. (2018) use the fuzzy logic methods to built an integrated index with weighted values of its indicators. Other widespread approaches for the assessment of composite indices are Harrington's desirability function (Kuzmenko, Koibichuk, 2018) or Euclidean distances calculation (Alikariev, Poliakh, 2018). As evidenced by the practice of forming integrated indices for assessing the independence of the central bank, the establishment of weights for individual indicators is often established by the expert method.

3. MEASURING DIFFERENT TYPES OF CENTRAL BANK INDEPENDENCE

Despite the discrepancies in the interpretation of certain types of central bank independence, the study of the criteria that characterize each of types was conducted taking into account the analogies identified by different approaches. Table 1 shows the indicators used to describe the personal independence of the central bank, which some researchers define as political independence. To identify the personal independence of the central bank, researchers have identified certain criteria that determine the choice of indicators for its measurement. Thus, first of all, the personal independence of the central bank is determined by the peculiarities of the appointment of its top management. In this context, the role of the government in the process of appointing the CEO and the board of the central bank should be assessed. It can be concluded that the appointment of CEO and board members of the bank should be carried out by separate authorities to ensure a balance of powers. Some researchers also highlight the criterion of political influence on the formation of proposals for the CEO and members of the central bank board. However, the inclusion of such indicators leads to complication of calculations and some duplication of this aspect of the study. On the other hand, an important condition is the compliance of central bank officials with a number of qualification requirements. The presence of clearly defined criteria in this direction allows to eliminate the subjective political influence on the formation of proposals for the appointment of top management. The next important aspect is to determine the term of appointment of the central bank management. In order to maintain the conditions of independence, the term of appointment must exceed the cycle of elections of the authorities that have the responsibility to appoint them. Some researchers also analyze the de facto period of permanent management in office, which allows to detail compliance with the law. In addition, attention should be paid to the need to define in law strict clauses that determine the possibility of reappointment or dismissal of the CEO and members of the central bank board. The reasons for dismissal of the central bank's CEO and board should be related solely to a breach of qualification requirements or unforeseen circumstances and should not have a political context. It is also necessary to limit the participation of the central bank's management in the government and, accordingly, to regulate the participation of

government representatives in the central bank's board. On the other hand, strict regulation of the composition of the central bank's board is not a necessary condition for ensuring its independence, as the independence of each official from political influence is more important than their total number.

Criteria for measuring	GMT-index	CWN-index	Romelli (2018)	Pisha (2011).	Mathew (2006)	Sheppard (2008)	Fouad, Fayed and Emam (2019)	Jacome (2001)
CEO appointment	+	+	+	+	+	+	+	
CEO nomination				+	+			
Term of CEO appointment	+	+	+	+	+	+	+	
CEO reappointment			+	+			+	
CEO dismissal		+	+		+	+	+	
Option for CEO to hold a position in government		+	+				+	
CEO qualification requierements			+					
Board appointment	+		+	+	+	+	+	+
Board nomination				+				
Term of board appointment	+		+	+	+	+	+	+
Board reappointment			+	+			+	
Board members dismissal			+	+			+	+
Option for board members to hold a position in government			+	+				
Board qualification requierements			+					
Permanent term board members			+					
Government representatives in board	+		+		+			
Board number and structure				+				+

Table 1: Criteria of central bank personal independence measuring

The next block of parameters of the central bank's independence (functional independence) concerns its functions. As can be seen from Table 2, the maximum level of functional independence of the central bank is achieved when it concentrates on achieving its primary goal – to ensure price stability. Some approaches also define the conditions for the functioning of the central bank in case of a conflict of objectives, such as the priority of ensuring price stability along with maintaining employment. Some approaches also determine the specifics of the central bank's function as a lender of last resort. The presence of pre-defined restrictions allows to maximize the independence of the central bank, especially in conditions of financial instability.

Criteria for measuring	GMT-index	CWN-index	Romelli (2018)	Pisha (2011).	Mathew (2006)	Sheppard (2008)	Fouad, Fayed and Emam (2019)	Jacome (2001)
Central bank primary goal	+	+	+	+		+	+	+
Creditor of last resort function							+	+

Table 2: Criteria of central bank functional independence measuring

The institutional independence of the central bank (Table 3) characterizes its freedom in choosing monetary policy instruments. In this context, the overall freedom of the central bank in the choice of instruments, as well as the need to prioritize central bank decisions in the event of a conflict of interest related to the implementation of monetary policy, should be assessed first. It is also important to assess all possible functions of the central bank that could lead to a conflict of interest and lead to a decrease in its independence. For example, the function of banking supervision or participation in the budget process are factors that restrict the institutional independence of the central bank.

Criteria for measuring	GMT-index	CWN-index	Romelli (2018)	Pisha (2011).	Mathew (2006)	Sheppard (2008)	Fouad, Fayed and Emam (2019)	Jacome (2001)
Formation of monetary policy	+	+	+	+	+	+	+	+
Definition of interest rates	+		+	+	+			
Banking sector supervision	+		+		+			
Central bank participation in the budget process	+	+	+					
Confict solving in monetary policy formation	+	+	+		+		+	
Dependence of central bank on any influence				+		+	+	

Table 3: Criteria of central bank institutional independence measuring

The next block of indicators of central bank independence includes its financial aspects. This dimension should include the peculiarities of the formation and use of the central bank's own financial resources, its relationship with the budget, as well as the peculiarities of banks' participation in government lending (Table 4). It should be noted that the definition of restrictions on direct and indirect lending to the government should be a necessary condition for ensuring the financial independence of the central bank. At the same time, the presence of detailed characteristics of this area creates some inconvenience for a comprehensive assessment. That is why it is advisable to single out one criterion for limiting government lending and to determine a wide range of estimates depending on the level of the restrictions. According to research by most scholars, the central bank should receive an appropriate level of financial autonomy. That is why it is important to clearly define the conditions for the formation of its capital, as well as independence in the formation and approval of its own budget. The next area of financial independence of the central bank, which must be taken into account in an integrated approach, is the procedure of profits allocation and losses covering. In this context, the general terms of the transfer of funds between the central bank and the treasury should also be defined.

Table following on the next page

Criteria for measuring	GMT-index	CWN-index	Romelli (2018)	Pisha (2011).	Mathew (2006)	Sheppard (2008)	Fouad, Fayed and Emam (2019)	Jacome (2001)
Prohibition of automatic direct credits	+	+	+		+			+
Responsibility to define financial conditions for government		+	+					
Potencial borrowers of central bank		+	+					
Type of direct credits limitation	+	+	+		+			
Maturity of direct credits	+	+	+		+	+		
Interest rates on direct credits	+	+	+		+			
Prohibition of buying government securities on primary market	+	+	+	+	+			
Initial capital of central bank			+				+	
Authorized capital of central bank			+	+				+
Central bank financial autonomy			+					
Automatic recapitalization			+					
Transfer of money from treasury			+					
Central bank budget approval			+	+			+	+
Central bank balance sheet adoption			+					
Central bank audit			+					
Net profit allocation			+	+				+
Dividends payment before the end of financial year			+					
Including unrealized profit to the distributable profit			+					
Covering central bank losses				+			+	

Table 4: Criteria of central bank financial independence measuring

Some researchers, within the financial independence of the central bank, also determine its reporting and audit. However, it should be noted that these indicators are indirectly related to independence and to a greater extent characterize the transparency of the central bank.

4. CONCLUSION

The analysis shows the lack of a coherent approach to the interpretation of the essence of central bank independence, the definition of its types, as well as a list of indicators that will allow a comprehensive and coherent assessment of its level. Based on this, the development of complex approach for assessing the independence of central banks becomes relevant, which will allow the most objective to form an information base for research in this area. Given the significant amount of work on assessing the independence of central banks and its relationship to economic development parameters and the achievement of monetary policy objectives, the selection of indicators to measure central bank independence should be based on previous conclusions about the importance of individual parameters to achieve national economic and financial system development goals. The study of frequency of certain areas and criteria of independence of the central bank in different approach allowed to identify four blocks that together fully characterize its independence. Generalization of specific criteria for measuring each of these types of independence allows to form a basis for further evaluations and the establishment of quantitative levels for each criterion.

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CHANGE FROM PERSONNEL MANAGEMENT TO HUMAN RESOURCE MANAGEMENT IS AN EPISTEMOLOGICAL NECESSITY OR RHETORIC CHANGE?

Hasan Tutar
Bolu Abant İzzet Baysal University, Turkey
hasantutar@ibu.edu.tr

Teymur Sarkhanov
Sakarya Universty, Turkey,
Azerbaijan State University of Economics (UNEC),
Baku, Istiqlaliyyat str.6, AZ1001, Azerbaijan
teymur.sarkhanov@gmail.com

ABSTRACT

When the field of management practices is analyzed recently, a "New Management Approaches" is generally encountered. However, when it is subjected to a deep analysis, it is understood that the approaches that are conceptualized as new management approaches today actually do not have "new" aspects other than renaming the conceptual framework. Therefore, it should be said that it is more realistic to talk about the different names of the same approaches rather than mentioning "innovation" in the management approaches including the personnel management area. The main aim of this study is to determine whether the conceptual change in the subject of "human management" evolving from personnel management to human resources management to strategic human resources management and "talent management" is rhetorical change or epistemological necessity. For this purpose, despite this rhetorical change in human management, which we assume that it was produced in line with neo liberal theses by using secondary data, the rhetorical change experienced from personnel management to talent management in this research, which is based on the assumption that it continues to be seen as a "cost element" despite the misleading statement produced in favor of the employee who is the producer of labor. The question of whether it is a requirement will be tried to be answered. The research is a research based on secondary data sources. In order to make a detailed analysis of the research subject and to analyze the problems in depth, it will be handled with an interpretive approach.

Keywords: *Personnel management, Human resource management, Strategic human resource management rhetorical change*

1. INTRODUCTION

When the theoretical framework of the science of management is examined, the number of theory schools that are increasing day by day and the applications emerging under a new name are encountered. Harold Koontz calls the conclusion of the curiosity of being different as "The Jungle of Management Theories" (Harold, 1961). Highlighting one of the features of management approaches that are already known, existing, and implemented, presenting them as if they did not exist before reveals the distinctive feature of contemporary management approaches. However, when viewed with a different reading style or a deep analysis, it is seen that the approaches conceptualized as "new management" approaches do not mean anything other than partially different applications and renaming of existing theories. Accordingly, the essence of the rhetoric of innovation consists of the term "old wine in new bottles" presented in known terms. Since the times when the idea of Business Management started to be handled with Taylor with a scientific approach, different approaches have reached the present day with new concepts and theoretical namings.

Some of the “new” concepts and approaches used in the field of business management and partly in the field of public administration are as follows: Total Quality Management, Change Engineering, Personnel Empowerment, Learning Organizations, Strategic Management, Human Resources Management, Outsourcing, Self Talent, Competence Management, Mission And Vision Management, etc. The confusion brought by the abundance of new managerial approaches stems from the multitude of concepts, techniques, theories, or approaches involved. Another concept that derives from the modern approach qualification is Human Resources Management.

2. CONCEPTUAL FRAMEWORK

The question of whether HRM is significantly different from traditional Personnel management remains subject to substantial debate in the academic literature. In the 20th century, there was a wide debate as to whether HRM represents a "fundamental change in human management" or whether it is merely "a stage of Personnel management" (Beardwell and Claydon, 2004). Some theorists emphasize a transformational change from Personnel Management to HRM. At the same time, others believed that HRM is only the next step in Personnel management (PM) development caused by historical and environmental factors (Bach & Sisson, 2000). While it is stated that employees in PM are seen as a variable cost, HRM shows that these are a variable asset for the organization. However, some theorists argue that the name change does not really change, so HRM is defined as 'presenting the old wine in a new bottle' (Armstrong, 1987) and 'a wolf in sheepskin' (Keenoy, 1990). For example, Guest (1987: 505-509) developed an alternative theoretical framework to show how HRM differs from traditional staff management (see Table 1). According to Guest, HRM differs from traditional Personnel management for the following reasons: (1) integrates human resources into strategic management; (2) seeks behavioral commitment to organizational goals, the perspective is unitary, focusing on the individual; and (3) work better in organizations with an organic structure and emphasis is placed on the full and positive use of human resources. Comparing between PM and HRM, Legge (1995: 70-71) shows clear similarities between the two:

- Both models emphasize the importance of integrating PM and HRM practices with corporate goals. Especially in American commentators, it cannot even be said that the language has changed - Pigors and Myers (1969) speak of “determining competitive advantage” and Megginson (1972) refer to “total business environment”.
- Both models (PM and HRM) are tightly linked to line management.
- Both models highlight the importance of individuals who, in most of the examples, fully develop their abilities for their own personal satisfaction to make their “best contribution” to corporate success.
- Both models define placing "right" people in "right" jobs as an important means of integrating PM/HRM practice into corporate goals, including individual development.

So, is there any difference between the normative models of HRM and the models of Personnel management? It is tempting to say “not much” (Legge, 1995: 71). The sharp contradictions that Guest (1987) called 'stereotypes' in Personnel Management and Human resource management (see Table 1) seem to owe to an implicit comparison of the descriptive practice of the staff, despite the denials. The same can be said for Storey's (1992: 35) comparison (see Table 2). However, both strict comparisons and similarity assumptions should be carefully considered. Even at the level of empirical observation or at the level of normative analysis, neither Personnel management nor HRM is a singular model, but each is conceptualized in various ways. Perhaps the sharpest contrasts can be found when comparing British PM models with US HRM models or paradoxically comparing the 'hard' and 'soft' versions of the HRM model (Legge, 1995: 72).

	PM	HRM
Time and planning perspective	Short term reagent temporary marginal	Long-term proactive strategic unified
Psychological contract	Harmony	Loyalty
Control systems	External audits	Self-control
Employee relations perspective	Pluralist collective low trust	Unitarist individual high trust
Preferred structures / systems	Bureaucratic / mechanical central officially defined roles	Organic It has been transferred flexible roles
Roles	Expert / professional	Greatly integrated in line management
Evaluation criteria	Cost minimization	Maximum utilization (human assets accounting)

Table 1: Personnel management and Human resource management stereotypes. (Source: Guest, 1987: 507)

Dimension	PM	HRM
Beliefs and assumptions		
1. Contract	Careful depiction of written contracts	Aim to go 'beyond contract'
2. Rules	The importance of devising clear rules	`Can do` outlook; impatience with `rule`
3. Management action guide	Procedures	Business-needs
4. Behavior reference	Norms / custom and practice	Values / mission
5. Administrative task related to labor	Monitoring	Nurturing
6. The nature of relationships	Pluralist	Unitarist
7. Conflict	Institutionalized	De-emphasized
Strategic aspects		
8. Key relations	Labour management	Customer
9. Initiatives	Piecemeal	Integrated
10. Corporate plan	Marginal to	Central to
11. Speed of decision	Slow	Fast
Line Management		
12. Management role	Transactional	Transformational leadership
13. Key managers	Personnel specialist	General / business / line managers
14. Communication	Indirect	Direct
15. Standardization	High (eg 'parity' an issue)	Low (for example, 'parity' not seen as relevant)
16. Prized management skills	Negotiation	Facilitation
Key levers		
17. Selection	Separate, marginal task	Integrated, key task
18. Pay	Job evaluation (fixed grades)	Performance-related
19. Conditions	Separately negotiated	Harmonization
20. Labour management	Collective bargaining	Towards individual contracts
21. Thrust of relations with stewards	Regularised through facilities and training	Marginalized (except some bargains for change models)
22. Job categories and grades	Many	Few
23. Communication	Restricted flow	Increased flow
24. Job design	Devision of labour	Teamwork
25. Conflict handling	Reach temporary truces	Manage climate and culture
26. Training and development	Controlled access to courses	Learning organizations
27. Foci of attention for interventions	Personnel procedures	Wide ranging cultural, structural and personnel strategies

Table 2: Storey's PM and HRM Dimensions (Source: Storey, 1992: 35)

Legge (1995: 70) proposes two approaches to identify possible differences between personnel management and HRM. First, it questions whether the normative models are different; The second question whether descriptive-behavioral models differ from their respective applications. As Guest (1987: 507) suggests, if we don't have a model of what to build, we can't really ask how HRM looks in practice. Otherwise, even if it is indistinguishable from what we called 'personnel management' a few years ago, we face the danger of accepting practices labeled in this way as HRM. Theoretically, after a normative HRM model is created and empirical research is done, various results are logically possible: staff management and HRM normative models may be similar, but their applications (descriptive-behavioral models) are different; normative models may differ, but their applications are similar; both their normative models and related applications may be similar or both may be different (Legge, 1995: 70). According to Blyton and Turnbull (1992), one of the differences between Personnel Management and HRM's different ways of being designed is the implementation of HRM to management and workforce, although personnel management is something that managers do to employees. This difference is detailed by Legge (1995: 74-76), which compares Personnel Management and HRM in terms of both normative models and actual practices. Although Personnel management or HRM is not a universally accepted 'single' model, Legge concluded that the differences that distinguish the two at the normative level are relatively small, and identified only the following three important differences (Legge, 1995: 74-75):

a) HRM seems to be a more centralized strategic management task than personnel management, as it is experienced as the most valuable resource to be managed by managers. While personnel management is largely directed at non-managers, HRM applies to employees as well as managers and not only emphasizes the importance of employee development but also focuses specifically on the development of the 'management team';
b) While personnel management sees line managers as implementing personnel policy for the employees under their control, HRM is a much more integrated line management activity, using human resources proactively, coordinating and directing all other resources in the business unit in search of the sub-unit;
c) While HRM emphasizes the corporate responsibility of senior management for managing the organizational culture and giving a sense of direction and leadership within the organization, staff management tends to see it as an activity for a separate department such as organizational development.

All of these three differences in emphasis express to HRM that it is essentially a more centralized strategic management task than the management of personnel, and the organizational values preferred by the top management, as it is experienced by managers as the most valuable company resource to manage.

Torrington and Hall (1995: 11) state that there is a philosophical difference that reverses PM and HRM. For example, while personnel management is supply-oriented, they say that HRM is demand-oriented. Personnel management is mainly aimed at the employees of the organization, finds and educates them, regulates wages and employment contracts, explains what they expect from them, justifies what management does, and tries to change the response from employees to any management action that may have an undesirable result. In contrast, HRM is primarily directed at management needs for human resources (not just employees) to be provided and distributed. There is more emphasis on planning, monitoring, and control over problem solving and mediation. It is fully defined by management interests and is relatively distant from the workforce as a whole. Based on the explanations above, Torrington and Hall (1995), therefore, show that personnel management is labor-centric and thus guiding itself towards employees, while HRM is resource-centric and therefore relates to an organization's overall human resources needs.

The difference between the two is that although personnel activity is a management function, it is not fully defined by management interests. On the contrary, HRM is a central management problem that is above the level of the function as it is resource-oriented. In addition, Guest (1991) follows the path of Lawrence (1985), who suggests that HRM is a new tradition for personnel management in the organization and management of employees. As a reference framework for employees, HRM is designed to encourage a commitment that staff managers cannot successfully make because they are primarily related to the implementation of decisions taken elsewhere in the organization. In this context, personnel activity within the broader HRM rubric list serves the service areas. The HRM rubric is designed to change the reference framework of staff practices to integrate business and market. However, there are still some British critics and HR practitioners who believe that HRM does not offer anything new and is re-labeling and repackaging staff management encouraged by staff managers to seek improved status and power (Torrington, 1988). Guest (1987: 506) points out that many staff departments have become 'human resources departments', with no apparent change in roles, just as new editions of textbooks for long-standing textbooks have changed their name. Skepticism about the fact that there is little fundamental difference between human resources management and traditional personnel management is further reinforced as a general term and a replaceable practice with "personnel management", especially in the USA. For example, Fowler (1987: 3) argues that there is nothing substantially new in HRM:

- What is new in staff activity? What is new about how employees do their best when they are treated as responsible adults? Have they not been at the center of good staff practices for decades? The answer is, of course, “yes”.

Similarly, Armstrong (1987: 32) “Human resource management: a case of the emperor’s new clothes?” He says the following about the subject in his article:

- HRM may not actually be more or less than any other name for Personnel management, but as it is often perceived, it has the virtue of emphasizing the need to treat people as a key resource, at least as management as part of the business's strategic planning processes. Although there is nothing new in thought, it has not been paid enough attention to in many organizations. A new bottle or label can help overcome this shortcoming.

Armstrong (1992: 34) also states:

- Personnel work always includes strategic issues, and the current emphasis on business issues represents another change in the environment where only the personnel manager adapts by strengthening the competencies required for the new situation. Human resources management is only an ongoing process of personnel management, it is no different.

In general, although these statements tend to be persuasive arguments, it can be said that the awareness of being more strategic and business oriented among staff managers may not have reached its current state without the influence of the HRM concept. Perhaps the most important differences that distinguish personnel management and HRM are that HRM seems to be a central, senior management-based strategic activity, is based on a management and business-oriented philosophy, and to support the interests of the institution they are developed, owned and served as whole management (Armstrong, 1992: 34, 38). Although the term "human resources management" has been used since the 1960s, the development of many American academic researchers was gradually filled with new content in the context of the events of the 1980-1990s. The "new"s in the content of HRM are as follows (Грэхем & Беннетт, 2003: 18):

- individualism is more than collectivism (this is the result of a long-term decline in the number of employees in unions).

- a wage system based on individual employment contracts, a system in which workers' wages are determined by individual negotiations with unions rather than collective bargaining.
- Employment growth is temporary, part-time, and in the case of workers.
- the idea that managers and employees have common interests in achieving the goals set by the company.
- The need to reduce costs and demonstrate cost-effective production methods in the context of ever-increasing international competition in businesses.
- The interpersonal relations and communication system between management and employees comply with the standards of high-tech industries using the latest management technologies.
- The system of communication between employees in accordance with the standards of interpersonal relations, management, and high-tech industries using the latest management techniques.
- flexible business applications.
- teamwork, implementation of corporate values, collective corporate training, the idea of prioritizing customer needs. Aside from pluralism and conflict management, HRM experts focus their efforts on the large-scale corporate culture and leadership issue rather than detailed procedures and rules.

Naturally, there are many things in common between the “new” content of HRM and traditional personnel management. Both agree that PM and HR experts are mostly involved in network administrators. Experts from both categories solve the problems of workers appearing during work and face the same practical tasks (Грэхем & Беннетт, 2003: 18). Starting from all of the above, we can say that, aside from the fact that seeing the human as a “source”, when the human resources management literature is examined, it is understood that the definitions are different from the personnel management, namely, there is no innovation that deserves to be presented as a new approach. First of all, it is not the right approach to see people as a resource. Because it cannot be used as a production factor without consuming any resources. At this point, where the understanding of seeing people as a resource has come, the high number of studies on the burnout of employees, especially in recent times, can be seen as one of the results of the erroneous definition of “resource”.

3. CONCLUSION

Despite the above, it should be noted that the differences in the terms "Personnel management" and "Human resources management" are not radical, but evolutionary in nature. We can say that managing human resources of an organization gives a new meaning to the term “Personnel management”. The difference in these terms implies different approaches to managing the organization's workforce resources, without affecting the essence of this activity in any way. Author Karen Legge (2005: 87) gives three differences in terms of "Personnel management" and "Human resources management" based on a review of the specialized literature on this subject in their work:

1. Human resources management is more focused on senior employees than on personnel management.
2. If staff management acts directly on the heads of departments, human resources management complicates the activities of the managers of departments, giving them greater authority over the influence of employees.
3. Human resources management places great emphasis on socio-psychological working methods and management of organizational culture. A special role is given to top

management in this regard. While in personnel management, these aspects of the activity in working with employees have never been given much importance.

As a result, we can say that the transformation of Personnel management into "a new approach" to Human resources management caused many criticisms. Some of these criticisms are given below:

- Although HRM's strategic orientation reflects management's hopes and aspirations, this new approach to personnel issues in practice is uncertain and lacks specific requirements in the field of personnel policy. Also, there is no single rigorous theory that combines various elements of the new HRM practice.
- Mixing business directive processes (production efficiency management, quality control, etc.) with traditional personnel management creates a shadow over personnel management, which reduces the importance of this vital type of activity.
- A broader management-oriented approach to HRM can lead employees to perceive HRM as a means to enable them to work more at less cost.
- In the relationship between the employer and the employee, power is mainly concentrated in the hands of managers. Therefore, workers can perceive HRM policies unilaterally.
- Workers are expected to be loyal to their company.
- In a business with a strong corporate culture, it is known to face the risk of not distinguishing the individuality of the employee.
- Without asking questions about the appropriateness and usefulness of their actions for specific individuals and for themselves, we can say that employees will face the risk of brainwashing if they do everything they need automatically.
- Continuous openness to pressures from management and constant propaganda can make employees feel manipulated.
- Competent, educated, and committed managers are required to apply new approaches to HRM. In reality, many managers are not suitable for solving such problems.
- In an organization lacking a stable strategic development aspect, it is very difficult to implement ideas about "new approaches" to HRM.

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POVERTY ALL OVER THE ROMANIAN RURAL AREA - SHORT MONOGRAPH OF SOME RURAL LOCALITIES IN ROMANIA WITH THE LOWEST POVERTY LEVEL

Cristina Stroe
National Scientific Research Institute for Labour and Social Protection, Romania
cristinaradu@incsmps.ro

ABSTRACT
Poverty is present and also it has been present in all societies and throughout all times. Whether we are talking about countries or regions, counties, villages or cities, poverty has made its presence felt everywhere in these places. This phenomenon still affects a large part of the population, especially the rural people, so that the distribution of poverty between rural and urban areas highlights important socio-economic inequalities. Also in Romania, rural poverty is high, the gaps between rural and urban areas are significant in poverty rates and, thus, rural poverty alleviation is still a major challenge of national and local strategies and of its action plans, as well as for the national and local actors. Although studies on poverty, as well as on its distribution by areas of residence, are present in the specialized literature, and highlight the high incidence of poverty in rural areas, this paper focuses on identifying the rural localities in Romania that have managed to reach and maintain the lowest level of poverty rates, much lower than the level of other rural, but also urban localities, and also much lower than the national average. Thus, even though poverty at the national level is currently high (among the highest compared to EU28 countries), and even though cities or towns and suburbs face high rates of poverty, however, there are some rural localities that are found in the list of the least poor areas at national level. These rural localities, through their low poverty incidence, are real counter-examples of rural poverty in Romania. These good examples need to be identified and studied, and they should be constituted in real models to be followed by other rural and urban communities, which are also facing high incidences of poverty rates in the present time.
Keywords: *Poverty, Rural poverty, Rural poverty distribution, Rural poverty inequalities*

1. INTRODUCTION

It is well known that in Romania poverty is high; in 2018 at national level, poverty rate was 23.5% - a value that places it among the poorest European countries, but also well above the European average EU28 (approx. 17%). It is also well known that poverty affects a large part of the national rural population, where the poverty rate reached 39% in 2018 - a value that fluctuates around this threshold of more than 6 years (38% in 2012 and slightly over 40% in 2015-2016 period). In addition, the gaps between rural and urban areas are significant in terms of poverty rates in Romania recorded in 2018: 39% in rural areas, 14.9% in town and suburbs and 6.6% in large cities, according to Eurostat. Thus, with such high values in rural spaces, of approx. 40%, which almost remained in dynamic, reducing poverty in rural areas is still a major challenge. In the same time, there are also some rural localities in Romania with low poverty rates, below 10% (some rural localities even 5-6%), and these situations are not at short-term, and recorded only for a short period of time. This paper focuses on identifying those rural localities in Romania that have managed to reach low poverty rates, and these examples should be models to follow both by other rural localities, but also by urban localities that are currently facing high incidences of poverty. Identification at NUTS 5 / ATU level - administrative territorial unit of these rural localities with the lowest poverty rates was not an easy task, as national statistics (and Eurostat) do not provide data on poverty indicators at this finest level of disaggregation, respectively at locality / ATU level (commune, village). The identification of these rural localities with the lowest poverty rates was completed with short comparative

analyzes from their monographs, local strategies or other sources to obtain a whole picture of the least poor rural localities in Romania, that can be established, through its low incidence of poverty, in real counter-examples of rural pauperity.

2. AREAS CONNECTING WITH SPECIALTY LITERATURE

The literature abounds in scientific paper and documents regarding poverty and rural poverty, starting from identification, specific characteristics, indicators, causes and factors, ways to reduce poverty and revitalize especially the rural area, etc. A special emphasis is placed on identifying those paths that lead to the achievement of poverty and social exclusion alleviation targets set by the Europe 2020 Strategy and the 2030 Agenda for Sustainable Development. In this sense, given the decline of national rural areas, a study conducted by Profiroiu and Rădulescu (2019, pp. 312) focuses on local policies in national rural areas. The authors emphasize the important role of local policies in the development of rural communities, by "supporting them to diversify the rural area, creating market-oriented institutions and strong social capital to increase rural resilience and support rural communities". Some studies are even dedicated to certain community areas in difficulty, e.g. Stănică (2015, pp. 194) appreciates that "the economic development of the rural facing difficulties requires a top-down intervention program, with the assistance of these communities for a sufficient period of time and the creation of fiscal facilities to attract former inhabitants or other people to develop businesses in these communes, by capitalizing of the local potential. The involvement of local communities in their own development can give sustainability to the process". By deepening research on rural areas, Stănică (2016, pp. 207) mentions the responsibility of rural development and gives an important role to the relevant local stakeholders in local development. Thus, a strategic issue in community development starts from identifying and assuming development at the local level, shaping and supporting the community governance. Other authors focus on local development initiatives through local action groups / LAGs, considering that their activities really support the local development. Thus, Mosora (2012, pp. 62) highlights the real difficulties of economic progress in rural areas. With an approach of revitalizing the rural areas, the author relies on the interventions of rural development initiatives, and the Leader program is "a good chance to accelerate the local development process", emphasizing "arguments that support local action groups as a solution to solve the rural problem". In the same context of local development initiatives, other authors focus on Local Development under Community Responsibility / LDCR, and O. Frunze (2016) concludes that these initiatives offer real opportunities for rural development, being an important tool in poverty reducing. Also in the context of these local development initiatives, accessing European funds is particularly important to support rural development and poverty alleviation. A more targeted study was conducted in Arad county - chosen for example in this paper, because in our analysis, we found that Arad county has the most rural localities (4) with the lowest poverty rates nationwide, below 9% (compared to the other 40 counties of the country). In his thesis, Marton, under the coordination of Csosz (2017, pp. 11), focuses on the following: emphasizing the importance of rural development and European funds to support rural development; highlighting the financing of rural development from European resources; analysis of the rural development degree and of the impact of European funds on rural development in Arad county. The author appreciates that "European funds represent an important catalyst for the development of the rural area of Arad county", supporting population and infrastructure, and their development, depending on the financing purpose. Also, Pezzini (2000) highlights the main common key elements of rural policies, and a special emphasis is given to local governance, supporting local capacity, involvement of governmental and NGO actors, strengthening rural economies by diversifying of the economic activities, infrastructure and human resources development, etc. Pezzini considers that these are the main pillars of rural development that contribute to poverty reduction and quality of life

increasing. Regarding the rural dimension of poverty, the European Commission (2008) identifies the main specific problems in rural areas, and focuses on the main policies for poverty alleviation and social inclusion increasing. Even if it is a strategic document initiated over 10 years ago, it can still be considered today, because the problems of poverty are the same, its incidence differs only slightly, which even after a decade remains at high values, especially in rural area. Starting from this comprehensive 2008 study, Augère-Granier under the auspices of European Parliamentary Research Service, through a Briefing (2017) on ”Rural poverty in the European Union”, analyzes the picture of poverty, risk groups, factors that lead to poverty and social exclusion in rural areas and some action directions of regional policies and rural development policies - which support the improvement of the economic development in rural areas. As main tools, the Briefing mentions the Leader measures (mandatory feature of all development programs) and Rural networks (the National Network, which includes groups or organizations that contribute to increasing of social inclusion in rural areas). Also other international experts focus their research on rural poverty (Bertolini, 2019). Starting with common features of rural poverty, the author mentions the lessons learned: ”Pay attention to agriculture and value local resources deriving by agriculture, and also to industry (SMEs) and services (tourism and also basic services and advanced services using ICT - slide 15)”. To reduce poverty in rural areas, Bertolini notes that ”vicious cycles must be broken” that are linked to the labor market, education, demography, infrastructure and difficult access to basic services and that support rural poverty. Also, Bertolini presents the “lessons learned which represent models of good practice and which refer to the general economic situation, the connection between rural and urban, agricultural traditions, the dispersion of branches such as industry, services, tourism, etc.” (slide 23); and we will have in mind all of these dimensions in the monographs presented in the paper for the rural localities considered. As Bertolini (slide 27) argues, ”There is no standardizes recipe for fighting against poverty of rural areas”, but knowledge of this phenomenon, as well as good practice examples, they would contribute to ”the possibility of shortening the process (of poverty alleviation), using imitation and adaptation of good practice”. As mentioned at the beginning of the Report titled “Rural poverty reduction in the 21st century” (2019), “Political will and leadership are needed to make rural development and poverty reduction a priority. This Report presents new challenges and opportunities for governments and organizations that share the goal of pro-poor development”. In addition, it is mentioned that ”while the agricultural sector remains the most important, other sectors are crucial to generate income for poor people in rural areas”. In the chapter on Resilience and Rural Poverty Reduction (pp.28), the Report mentions as particularly important a key aspect regarding adaptive governance and connecting institutions for the common goal of poverty reduction, as ”they are more in touch with local realities and needs and are more flexible”. Therefore, poverty remains a real challenge, and a lot of efforts are made to identify and characterize it, but also to find those ways to reduce poverty and to increase the quality of life.

3. NOTIONS, STATISTICAL INDICATORS AND DATA

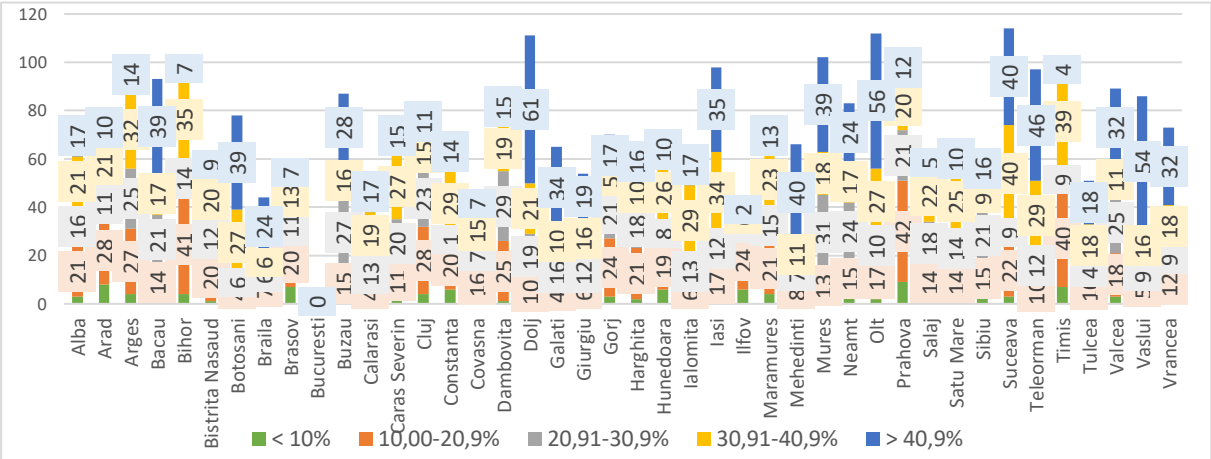
At-risk-of-poverty rate refers only to the strictly material dimension and represents the proportion of population with an equivalent disposable income, after social transfers, below a specific threshold which is usually set at 60% of the national median disposable income. Statistical date used to analyze the incidence of poverty (Eurostat or data from the National Institute of Statistics NIS / Tempo online database) show poverty rates only at NUTS 1 (macro-regions) or NUTS 2 level (regions). For a finer level of disaggregation (NUTS 3 county or NUTS 5 – administrative territorial units ATU / locality), as these structures are not available in Eurostat or NIS statistics, some existing interactive maps on the territorial distribution of poverty were used in the paper. In these interactive maps we can identify the poverty rates at locality level NUTS 5 / ATU for all 3181 localities in Romania.

These interactive maps are available only as a result of the Project "Implementation of a system of elaboration of public policies in the field of social inclusion at the level of MMJS" (SIPOCA code 4) / author translate (notation Project** in the paper). This project was made by the Ministry of Labor and Social Justice MLSJ (in present Ministry of Labor and Social Protection, MLPS) in cooperation with the National Institute of Economic Research (INCE) and was co-financed by the European Social Fund (ESF) through the Administrative Capacity Operational Program (POCA); the interactive maps were published by the Ministry of Labor and Social Protection / MLSP on 02.05.2018, at https: // portalgis.servicii-sociale.gov.ro/arcgis/home/.

4. ANALYSIS OF POVERTY INDICATORS

Whereas the statistical data (Eurostat or NIS data / Tempo-online) do not have available poverty rates at a finer level than the NUTS 2 region, in order to analyze in more detail, at the level of ATU / NUTS 5 (at this lowest administrative unit level, of commune and village), we identified the existing data within the interactive maps regarding the territorial distribution of poverty from the Project** mentioned above (MLSP, publication date 02.05.2018, https://portalgis.servicii-sociale.gov.ro/arcgis/home/). According to the data extracted by the author from the available interactive maps, the paper analyzes the data regarding the poverty rates at locality level (ATU) and the distribution of all these localities by poverty rate, and highlights those rural localities with the lowest incidences of poverty. The distribution of urban and rural areas from all 3181 localities of the country, by poverty rates, are in Figure 1.

Figure 1: Distribution of localities by the risk of poverty rate at NUTS 5 (UAT/ locality), in Romania, 2018

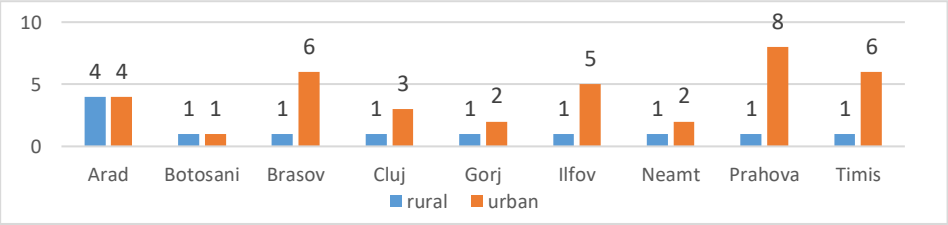


*Source: Data selected by the author from the Interactive maps regarding the territorial distribution of poverty, Ministry of Labour and Social Protection MLSP, Project**, publication date 02.05.2018, https://portalgis.servicii-sociale.gov.ro/arcgis/apps/MapJournal/index.html?appid=2b5d7bc721b047998b07048fc19956f8*

From the selected data in Figure 2 it is observed that Arad county has out of a total of 78 ATUs, 4 rural localities and 4 urban localities where poverty is below 10%, so Arad is the only county (out of 40 counties of the country) which has the highest number of rural localities with low poverty rates, below 10%. Otherwise, the other counties have a higher number of urban localities where poverty is reduced, below 10% (e.g. 8 urban localities in Prahova county, 6 urban localities in Brașov county, 6 urban localities in Timiş county, etc.) and only 1 rural locality with low poverty rate. At national level, there are 115 localities with poverty rate below 10% (that means over than 3.6% of the total localities), of which 12 are rural localities and 103 are urban ones.

These 12 rural localities are found in 9 counties (theses 9 counties have 49 rural and urban localities with low poverty rates, of which 12 are rural localities and 37 are urban ones). So, there are some localities with low poverty rates, below 10%, given that in many localities, the incidence of poverty exceeds 60% (or even 70%) for many rural localities. The 12 rural localities with the lowest poverty rate, below 10%, are: Iratoşu, Dorobanţi, Chişindia and Peregu Mare (Arad county); Şendriceni (Botoşani county); Feldioara (Braşov); Floreşti (Cluj); 1 Decembrie (Ilfov); Teleşti (Gorj); Dumbrava Roşie (Neamţ); Cornu (Prahova); Dumbrăviţa (Timiş). These 12 rural localities where poverty is very low must be examples of good practice for other rural areas, but also for urban areas that face high poverty rates.

Figure 2: Number of urban and rural localities from the 9 counties in Romania, at ATU / NUTS 5 level, with poverty rate below 10%, 2018.



*Source: Data selected by the author from the Interactive maps regarding the territorial distribution of poverty, Ministry of Labour and Social Protection MLSP, Project**, publication date 02.05.2018, https://portalgis.servicii-sociale.gov.ro/arcgis/apps/MapJournal/index.html?appid=2b5d7bc721b047998b07048fc19956f8*

This picture of the 12 rural localities with the lowest poverty rates, below 10%, needs to be analyzed in detail from multiple perspectives, to see what are the reasons why some rural areas have low poverty incidence, giving the existence of high poverty rates, especially in many rural localities, where poverty has reached particularly high levels (448 localities registered high poverty rates, over 50% - that means more than 14% of localities; or 148 localities had poverty rates over 60%, than means more than 4,6% of total number of localities). These motivations could be found through spatial analyzes of poverty (seen as the distance between that rural locality and a town/city – numerous authors associate this distance with some disparities in social development, such as D. Sandu, 2011, pp. 19), or by the degree of development of that locality, given by the specific area (e.g. through important economic activities in those areas, within the sectors of agriculture, services, industry, or other specific activities), through the development of infrastructure, or by accessing the structural funds that contributed to the rural development, by attracting of investors who have contributed, in turn, to rural development, or by directing local funds to intervention priorities, and so on – all of them essentially contributes to the growth potential of the area.

**1.* Out of the 12 rural localities with the lowest poverty rates (with data extracted from interactive maps showing the territorial distribution of poverty published by MMPS, in 2018), the World Bank (2016) mentions 7 rural localities that are in the list of more developed localities (Iratoşu, Feldioara, Floreşti, 1 Decembrie, Dumbrava Roşie, Cornu and Dumbrăviţa). These 7 rural localities are part of the most developed rural areas (determined according to the local human development index LHDI calculated by the World Bank). The gap between these 2 years of analysis and the positioning of these rural localities in the sphere of rural areas with low poverty and low social marginalization (or without marginalization) demonstrates the *persistence of low poverty rates over time* among these rural localities.

*2. *Spatial poverty* can be seen as the distance to a town/city. This spatial criterion, which refers to the neighborhood in relation to an urban development pole, is directly related to the spread of poverty, which also leads to its clustering. This does not mean that the proximity of a town or city or a metropolitan area will implicitly contribute, automatically, to the development of the rural locality placed in its vicinity or to the implicit reduction of poverty (as proof that many other rural or even urban localities, located near these cities or county residences face poverty). Thus, other authors support these aspects, namely Sandu (2011, pp.18) who considers that "Social development tends to be higher in commune near the city than in distant ones, in localities near an European road compared to those that have access only to communal, county or national roads". On the other hand, poor localities tend to attract in poverty also neighboring localities, which register a slightly higher income; and where high-income localities / ATUs are dominant, the tendency is to raise even poor ones. This entropy is desirable where there are positive effects of contagion and important attention must be paid where poverty and vulnerabilities multiply. In terms of distance from a city, these 12 rural localities are between a minimum of 5-7 km (Şendriceni, Cornu, Dumbrăviţa) and a maximum of 20-22 km (Iratoşu, Feldioara) near a town or large city. These distances are relatively short, and fall under the conditions of spatial contiguity regarding low poverty. Other authors have also focused on peri-urban analyzes and specific indicators. Thus, based on the indicator on land covered with buildings at LAU2 level identification of locations with peri-urban development, Lincaru et al. (2016) make a map at national region and county level. Using these maps, we can see that certain rural localities adjacent to larger cities are included in so-called HH / high high areas (marked in red in this map), in terms of the land covered with building indicator. Thus, we can identify in these clusters from the HH area the following rural localities, such as Dumbrăviţa (6 km from the Timişoara metropolitan city), or Dumbrava Roşie (8 km from the Piatra Neamţ city), etc., where areas with high level of land covered with buildings can be observed (red color in the map). Thus, we can notice that some rural localities placed in the immediate vicinity of large cities could be subjected to an impulse of „development contagion". All these MAR-Jacobs dynamic externalities, regarding location and specialization, or diversification and urbanization, can give an impetus to the development of the neighboring rural areas, facilitating its economic growth. This axis of connectivity and poverty reduction is complemented by other dimensions that cause certain social disparities in the rural localities and correlate with poverty.

*3. As mentioned by other authors (D. Sandu, 2011), but also is presented in the National Strategy for Regional Development 2014-2020, another axis of generating disparities that acts especially in rural areas is related to the dominant *agricultural occupation* of population, strongly dependent on the form of relief specific to the respective area. A large part of the population, especially in rural spaces, depends on subsistence agriculture. This specific activity has an important role, as a "social buffer", a niche for the rural population, where the dynamics of the economic and social environment has led to unemployment and lack of opportunities. Although it cannot be considered economically efficient and competitive, subsistence agriculture is still an essential binder of stability, especially among the rural population, using this activity for self-consumption and survival. Family farms are currently supported (through legislation, measures for their development, European financial support, etc.), and these family farms act as a protection against poverty and represent a mechanism of minimum security for households in rural areas with low incomes and limited employment. Studying the specific activities and the main economic activities in all 12 rural localities, we observed that agriculture is the main activity for the rural localities in Arad county (Dorobanti, Peregu Mare, Iratoşu, Chişindia); for other rural localities, although agriculture is dominant, there are also trade activities (Teleşti, Dorobanti, Şendriceni) or small industry, textiles (Floreşti, 1 Decembrie, Cornu), wood industry (Dumbrava Roşie, 1 Decembrie, Feldioara).

A single rural locality of the list does not mention agriculture neither as a specific activity of the area nor as its main economic activity, where the predominant activities are services, logistics, production, and housing in the residential area (Dumbrăviţa). Thus, agriculture is the basis of self-consumption or maybe for commercialization of the obtained products, and ensures the minimum survival among these rural households. Other authors also highlighted this aspect regarding the practice of agriculture, and they mentioned "subsistence agriculture is a widespread survival strategy" (Paraschiv, 2008, pp. 447).

**4.* Another dimension presented in the literature refers to *the size of the locality* given by the *number of inhabitants*, but also to the existence of some educational infrastructure units. Therefore, these aspects also influence the quality of life and the well-being of the population. The 12 rural localities have a population contingent that varies greatly, between a minimum of 1432 inhabitants (Chişindia) - or 8935 inhabitants (Dumbrăviţa) - and reaching up to 23150 inhabitants (Floreşti). Given the inclusion of Floreşti rural locality in Cluj metropolitan area, it is explained the large number of inhabitants, and households (3626), but also the large number of dwellings (9689). Considering the high degree of development of this commune, but also the population contingents, the number of schools and kindergartens is important here (4 kindergartens and 2 schools), compared to other communes from the list of the 12 studied. But other rural localities also have a similar number of school and preschool units, with a much smaller number of inhabitants: e.g. Teleşti has a population of 2723 and 4 kindergartens and 4 schools; Dumbrava Roşie has a population of 7165 and 2 kindergartens and 4 schools, etc. And other rural localities have developed even more educational units, including at a higher level: e.g. Șendriceni, with a population of 4470, has 3 kindergartens, 3 schools and 1 high school; Feldioara, with a population of 6150, has 3 kindergartens, 5 schools and 1 high school.

**5.* Another important dimension that we could add to this list of motivations that support local development and also contributes to reducing the economic and social gaps and inequalities, reducing poverty and social exclusion, increasing the quality of life, etc., refers to the *investment projects on the local level*. These investment projects depend on the existing situation, the estimated need, the development plans, the existing and necessary budgets (accessing funds), and so on. All these rural localities, despite its low poverty rates, mentioned a lot of priorities and areas of intervention, to continue development and modernization, to maintain and ensure a decent quality of life of the population. Other authors also mentioned a similar conclusion, found even at the town or city level, namely that "small towns concentrate community poverty, mainly due to underdeveloped physical infrastructure; in addition, due to the dependence on a single enterprise and / or the underdevelopment of the private sector at the local level, small towns are the most vulnerable to restructuring in the economy and have been most severely affected by the reforms implemented so far" (Paraschiv, 2008, pp 446).

**6.* Also, in close connection with these efforts, at the same time the direct and quality targeting of local development-oriented resources must be highlighted. Thus, the good management of revenues and expenditures from the local budget must be supported. *Accessing development funds*, implementing projects from European funds, structural funds, projects financed from the local budget and the state budget largely support the local development. Good management of these funds and their direction towards the development of infrastructure (transport and technical-utilities), public services, etc., development of local partnerships (twinning with other localities), for development and investments, accessing European projects, etc., they particularly support the vision of local development, the increase of the quality of life and the reduction of poverty among the rural population. As we do not have a database with the situation of accessing European funds and projects implemented or being implemented in these

12 rural localities, at the level of each commune hall of these localities are mentioned some of these initiatives and the results obtained or to be achieved. From the analysis of the available data and information sources, it is observed that these localities have resorted to various development tools for their numerous local development investment projects (e.g.: Dumbrăviţa - https://www.arq.ro/in-iratosu-90-din-strazi-se-vor-asfalta/19043; Dumbrava Roşie - https://primariadvarosie.ro/proiecte-investitionale/; Iratoşu - https://www.arq.ro/in-iratosu-90-din-strazi-se-vor-asfalta/19043; Şendriceni - http://primariasendriceni.ro/proiecte_investitionale; Peregu Mare - http://primariaperegumare.ro/proiecte-de-investitii/, etc.). These initiatives aimed at rural development have been implemented mainly in these localities and continue to be considered.

5. CONCLUSION

The emphasis on placing a rural locality in the list of the least poor localities is not necessarily based on demographic, cultural-ethnic, historical, or administrative issues, these dimensions having very strong connotations; keeping them out of poverty line could derive from an accumulation of potential vectors that support local development and poverty reduction and that refer to the development degree of that rural locality given the zonal specificity (e.g. through important economic activities of those areas, within the sectors of agriculture, services, industry, or through specific zonal activities), or through the development of infrastructure, either by accessing the structural funds that have contributed to the area development, or by attracting investors that have in turn contributed to rural development, or by directing local funds to intervention priorities, etc. Among the main action directions that contribute to local development and poverty reduction for rural population are the following important vectors that must be prioritized in placing and maintaining the rural locality with the lowest levels of poverty and supporting the quality of life of its inhabitants:

- *Continue to implement the local strategies*. All localities are subject to local development strategies, national rural development program, national strategies to improve human capital by increasing employment, social inclusion, improving education, health and housing conditions, strategies to promote local development regarding agriculture or tourism, or poverty and social exclusion reduction, etc. By analyzing these multitudes of programmatic documents / strategies, and its action plans that support policies regarding poverty alleviation and rural development, it was found that there is NO single, integrative and integrated solution to reduce poverty. In this context, people-oriented sectoral policies in close connection with development policies must converge, through its specific action directions, towards the common goal of reducing poverty and social exclusion and, implicitly, of increasing the quality of life, not only among the vulnerable, but for the entire population.

- *Implementing the community governance*. Local development is an important step at the community level that aims to provide opportunities for access to quality public services, in order to create the premises for inclusive economic growth, respectively to reduce poverty and social exclusion and to increase the quality of life. One factor that can make a decisive contribution to achieving this goal is therefore the involvement of the community, of local public authorities in partnership with private and civil society to initiate steps to stimulate participation and social development. A good accountability of this partnership would mean local development and good governance at community level, which therefore relies on an active repositioning of partnerships at community level, for the common goal of local development and rural poverty alleviation. As we are considering the whole community area where sectoral policies and interventions simultaneously make their own contribution

to local development and poverty and social exclusion alleviation, especially in rural areas where this incidence is quite high, horizontal integration of local governance is particularly important. This means the cooperation of all relevant local actors, with potential in local, intra- and inter-community development interventions, in order to achieve the common goal of local development, to reduce poverty and social exclusion, and to increase the quality of life.

- *Accessing structural funds*. Following the whole analysis (the monographs of these rural localities connected with the demographic aspects, main economic activities or specific activities of these rural areas, specific investment plans and projects, local development plans, which correlate with the national / regional development plans and with the multiple national / local / regional strategies, with the accessing local, national or international projects and funds, etc.), it cannot focus on a single and successful recipe that consists of examples of good practice and guidelines to be followed blindly by other localities, especially rural ones, to reduce poverty among the rural population. However, some conclusions can be drown regarding a good management of these national or international funds, investments in rural development, increasing the capacity to access structural funds and implementation through European projects, as well as a complementarity and simultaneity implementation of such projects, to contribute to zonal development and poverty reduction. Accessing these funds and implementing such projects aim to improve and develop rural public infrastructure and reduce trends in social and economic decline in these rural areas – these actions represent important vectors in increasing the quality of life.

In this paper, in order to analyze the incidence of poverty at the level of rural locality (village, commune) and to identify those rural localities with the lowest poverty rates, we focused only on two data sources (MLSP and the World Bank - which present only at a certain moment the incidence of poverty at locality level). Efforts have been made to identify from the literature as many sources and statistical data on poverty rates or other related issues at the locality level in rural areas (commune, village), to analyze in dynamics the incidence of poverty in these rural areas. Despite the paucity of these statistics, databases and dynamics on poverty at the local level, local strategies and other information documents at the local authority / commune hall were consulted, as well as other bibliographic sources (studies, reports, etc.). Thus, the paper identified a picture of these rural localities with the lowest poverty rates. Within this picture, some elements were highlighted that made these rural localities become a real counter-examples of rural poverty, given that other rural and urban localities (even cities) face high poverty. The paper wanted to exemplify a certain paradox, namely that despite achieving high poverty rates in rural areas, but also in urban areas and at national level, there are some rural localities that are in the opposite pole and would be interested to know the main engines and keys that contribute to this exclusion from the list of rural and urban localities facing high poverty. From the short monographs it was possible to deduce some of the main aspects that could argue those keys, that represent the basis for the development of some rural localities and place them among the rural localities least affected by poverty. From the analysis of these aspects, it was found that there is no single recipe for achieving the lowest values of the poverty rate in rural areas, but there would be a combination of aspects that contribute to these good examples. Thus, the three major dimensions that make these communes the least poor rural localities over time concern the local development, by continuing implementation of local strategies, along with the creation, maintenance and involvement of community governance, access to European funds and implementation of investment projects. In addition to these aspects, which are the essence of rural localities development, the involvement of local authorities in managing resources for continuous area development must be mentioned.

We consider that these important dimensions must be completed in a convergent way towards the common goal of poverty reduction and local development in rural communities. In addition to these convergent initiatives that must complement each other harmoniously, we do not exclude the aspects that actively involve local authorities, but also the population, in the sense of increasing the educational and occupational level - essential aspects in reducing poverty both in rural and urban areas. Therefore, even if the paper does not have multicriteria analyzes with exhaustive matrices or does not highlight new keys and solutions, it only makes a review of some elements and dimensions that generally characterize the local development of those rural localities with the lowest poverty rates of the country. The paper wanted to emphasize the fact that despite the existence of high poverty rates at national, urban, but also at rural level, there are some rural localities that seem to defy poverty. In the context of this picture, the main efforts to support and maintain low poverty in these rural localities were based on the will and involvement of relevant actors at the local level, and maintaining low poverty over time certifies these issues. The continuing of these complementary efforts contributes greatly to reducing poverty and raising living standards, especially now when these goals will be severely affected by the current challenges facing the entire world. In the current conditions regarding the coronavirus pandemic, which this time severely hits all the countries of the world, numerous international forums (United Nation, International Monetary Fund, World Bank, etc.) announce that the risk of poverty will increase so much that the poverty targets for 2020 and 2030 will be affected. In this context of the impending recession, more than ever, we must support the interventions aimed at strengthening the resilience and leading to economic consolidation, minimizing losses for the public and private sectors, protecting the quality of life of citizens and the recovery of the standard of living that will be severely eroded. In such conditions, whether in rural or urban areas, priority access to funding through financial assistance programs is particularly important. This absorption is more than ever one of the generating engine that will act and diminish the economic and social impact that will be registered after this economic crisis generated by the epidemic crisis. Under these conditions, the fight for economic recovery will be a real challenge at national level, as it will be, in fact, for all countries all over the entire world.

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THE APPLICATION OF REMOTE SENSING DATA FOR WHEAT YIELD PREDICTION

Anna Pavlova
Novosibirsk State University of Economics and Management, Russia
Siberian Federal Scientific Center for Agrobiotechnology, Russia
annstab@mail.ru

ABSTRACT
At present, multi-zone space images and digital images obtained by unmanned aerial vehicles for the important task of predicting crop yields are becoming increasingly practical. The work uses space images of Landsat-8, Sentinel-2 and results of multispectration survey from unmanned aerial vehicle of aircraft type. Space images are Sentinel-2 characterized by good spatial and spectrozonal resolution, territorial coverage, widely used for monitoring, rational management, forecasting. At the same time, in order to estimate land in more detail and predict yield taking into account the properties of the relief, it is necessary to involve modern unmanned technologies of multispectration survey. In order to develop a prognostic mathematical model of yield, a multi-spectral survey was carried out on the territory of key sections of ZAO "Peaceful" of the Kochenevsky district of the Novosibirsk region, as well as the field hospital of the Siberian Federal Scientific Center of Agrobiotechnologies. The most significant agroclimatic indices, productive moisture reserves in the soil, as well as vegetation indices were used to predict wheat yield.
Keywords: *remote sensing data of The Earth, unnamed technologies, crop yield prediction, wheat, climate, soils, farm lands, vegetation Indices (VIs)*

1. INTRODUCTION

Remote sensing data has been used for more than 30 years for global monitoring, agriculture, forestry, water management, etc. In particular, they are needed to address food security in crop mapping, cadastral land assessment and assessment. The information obtained during the processing of space images serves as an objective basis for the territorial management of highly productive agricultural products (macromanagement and micromanagement of agricultural production). However, the use of space images for precision agriculture has certain limitations related to the ability to determine vegetation indices (VIs) and spatial resolution of the images.

2. REMOTE SENSING PLATFORMS

Many countries around the world are establishing national and regional agricultural land monitoring systems. Terra, Aqua/MODIS (Moderate Resolution Imaging Spectroriometer), and Landsat-7,8 (USA) space images are used to monitor and predict yields. The spatial resolution of MODIS images of Terra and Aqua EOS series satellites is 250 m, 500 m and 1000 m in the near, middle and thermal infrared bands with 36 spectral channels. Moderate Resolution Imaging Spectroradiometer (MODIS) imagery was obtained from the Descartes Labs Satellite Platform. Data from MODIS have a nominal resolution of 250 m at the nadir of each swath. In the Descartes Platform, MOD09 Aqua and Terra surface reflectance data points with associated coordinates are interpolated onto a grid in the form of an image [1-2]. The most well-known agricultural monitoring systems are MODIS and MARS (The Monitoring of Agriculture with Remote Sensing) projects implemented by the European Commission 's Joint Research Centre for Agricultural Land Monitoring. The technical means and software used by this centre allow determining land and crop areas, plant conditions and crop yields [3-5]. In China, crop forecasting is part of the Crop Watch Program at the Institute of Remote Sensing Applications (IRSA) of the Chinese Academy of Sciences (CAS) [6].

Forecast of yield of spring wheat in the territory of Novosibirsk region since 2005 is carried out by SO FSBU NIC "Planet." SDIM (System of Databases and Imaging Modeling), which implements the American Bioproductivity Model EPIC (Erosion Productivity Impact Calculator), is used to calculate the yield forecast of spring wheat. Adaptation and verification of the model of bio-productivity to agroclimatic conditions based on the use of weather data and data on actual crop yield for 20 years has been performed [7-9]. The prediction uses information from the American Terra satellite (MODIS spectroradiometer) with a spatial resolution of 250 m and a survey bandwidth of 2,300 km. Images of the territory of interest are taken up to several times a day, which provides monitoring of the condition of crops. However, the use of MODIS snapshots for territorial management of the farm due to low resolution has significant limitations. Space images of Landsat 7 and Landsat 8 of medium spatial resolution with resolution of 15 m, 30 m, 60 m are an alternative source of spatial information on agricultural land. This allows to recognize terrain objects with higher accuracy and detail compared to images of MODIS satellite [10-11]. New opportunities for crop yield prediction have been discovered with the advent of space satellites WorldView -2 and WorldView -3 (DigitalGlobe, Longmont, CO, USA). One of the first commercial satellites of high spatial resolution WorldView -2 was launched in 2009. The satellite allows to obtain images with high resolution 0.46 m in panchromatic range and 1.84 m in eight spectral ranges. The spectrometer established onboard the satellite provides shooting of the land surface in traditional spectral zones of an electromagnetic range: red, green, blue and near infrared (NIR-1) and also in four spectral zones - violet for decryption coastal water areas (coastal), yellow, "dark red" (red edge) and near infrared-2 (NIR-2). This allows WorldView -2 snapshots to be used for mapping analysis and vegetation analysis with greater detail than Landsat-7 and Landsat-8. However, a significant limitation of the use for territorial management of the economy is their high commercial cost. The problem with satellite based remote sensing in the revisitation time, with is 16 days in average, which makes the agricultural application difficult, specifically those related to water and nutrient management [13]. The European Global Monitoring for Environment and Security (GMES) initiative aims to develop its own European monitoring capacity (France, Italy, Germany, Canada, Israel and a number of aerospace companies from other countries participate in the project). The European Earth remote sensing satellites Sentienel are part of the space constellation of satellites under the international programme The Global Monitoring for Environment and Security (GMES). As part of this program, Sentinel satellites 1, 2, 3, 5 [14] were launched. Space images of a high spatial resolution of 10 m of space satellite Sentielel-2A. Space images are characterized by high periodicity, good spectral resolution. Space imagery of Sentinel 2A, Sentinel 2B satellites is of greater interest for crop monitoring. The most interesting satellites for our study are Sentinel 2A, Sentinel 2B, which were launched in 2015 and 2017 respectively. They implement all advanced technologies of taking pictures in different zones of the spectrum, spatial resolution of which is from 10 m to 60 m and temporary resolution of 5 days, at the same time they belong to the class of resource and are freely available. In the development of these satellites, modern technologies of space survey of the Earth 's surface in different spectral ranges with spatial resolution of the raster model from 10 m, 60 m were used. A distinctive feature of space images is free access for solving scientific and practical problems. In 2021, the European Space Agency plans to launch two more Sentinel 2C and Sentinel 2D [14] satellites. UAV data are seen as an alternative source of data to traditional remote sensing data, providing greater potential for yield forecasting. Digital images obtained from aerial photographs from UAV RS (Unmanned Aerial Vehicle Remote Sensing) have ultra-high resolution compared to space images. This allows you to create digital models of terrain and relief of large scale.

However, aerial photography and UAV data processing are limited. In this paper, an analysis of vegetation indices was performed to assess the condition of crops and to predict yields from space and UAV surveys.

2.1. Vegetation Indices (VIs)

More than a hundred vegetation indices are now known, which are selected empirical based on the study of the spectral reflectance of geosystems, agrolandshafts. In most cases, two portions of the electromagnetic spectral range are used: the red and near infrared zones. Within the red zone of the spectral range, there is a maximum absorption of solar radiation by chlorophyll. The near infrared zone is associated with maximum energy reflection of the cell structure of the leaf surface of plants. Photosynthetic activity determines lower value of reflection coefficients in red zone of electromagnetic spectrum and increase of values in near infrared. This characteristic property allows the recognition of vegetation from other topographic objects. The Normalized Difference Vegetation Index (NDVI) is the most widely used. The normalized index value ranges from 0 to 1, and it is a normalized ratio of the NIR (near infrared) and red bands. It was proposed by [16-17], which can be expressed as:

$$NDVI = \frac{\rho_{NIR} - \rho_{Red}}{\rho_{NIR} + \rho_{Red}}, \qquad (1)$$

where $\rho_{NIR,}\rho_{Red}$ are the surface bidirectional reflectance for near infrared and red bends.

A distinctive feature of the index is the good sensitivity for green vegetation, even when the projective coating is small. Therefore, this index is often used for land cover mapping, global and regional crop monitoring. The empirical relationship between remote sensing spectral vegetation indices to predict crop yields before harvest has been tested in many researches. In order to establish dependence, values of vegetation indices calculated from space images on a specific date or period of time between two dates from the beginning of cultivation are used. Among the vegetation indices, the NDVI has been widely employed to close relationship to several vegetation parameters like Leaf Area Index (LAI), the fraction of Absorbed Photosynthetically Active Radiation (fAPAR) [18]. One of the main conditions for obtaining high productivity of crops is the absorption of more solar radiation energy by plants and its conversion to organic matter. The process of plant photosynthesis depends on the total area of leaves and intensity of photosynthetic processes. The growth rate of plant biomass is determined by genetic factors, among agricultural techniques in formation management the level of nitrogen nutrition of plants plays a decisive role. Crop yield prediction is based on the detection of the dependence of vegetation biomass growth and the change of vegetation indices into certain phenological phases of plants. E. N. Sutyrina [19] notes that NDVI as a dimensionless value is useful for measuring ecological-climatic characteristics of vegetation, but has a close connection with such parameters as moisture and organic saturation of soil, euphotranslation, volume of precipitation, etc. In addition, the relationship between these parameters and NDVI is not direct and is related to the features of the studied territory, its climatic and ecological characteristics, besides, it is often necessary to take into account the temporal dimension of the studied characteristic and response of NDVI. The abnormal vegetative indices perpetual gain index (PVI) and the green gain index (GVI) are characterized by a more linear relationship with spectral reflectivity. However, their use is related to elimination of interference of external influence and sensors from reflecting surface [1]. Therefore, improved vegetation indices are used for operational monitoring. The Enhanced Vegetation Index (EVI), which is sensitive to the determination of the state of vegetation with regard to the reduction of the influence of the atmosphere (atmospherically corrected or partially corrected):

$$EVI = G\frac{\rho_{NIR}-\rho_{Red}}{\rho_{NIR}+C_1\cdot\rho_{Red}-C_2\cdot\rho_{Blue}+L}, \quad (2)$$

where L is the canopy background adjustment that addresses nonlinear, differential NIR and red radiant transfer through a canopy, and C1, C2 are the coefficients of the aerosol resistance term, which uses the blue band to correct for aerosol influences in the red band. The coefficients adopted in the EVI algorithm are, L = 1, C1 = 6, C2 = 7.5, and G (gain factor) = 2. The range of values for the EVI is -1 to 1, where healthy vegetation generally falls between values of 0.20 to 0.80 [1, 20]. The authors of [21-22], using MODIS Vis snapshots, created global vegetation raster maps with NDVI and EVI vegetation indices of resolution 1-km, 500-m (16-day compositing periods). Studies have shown [22] that the normalized difference vegetation index is chlorophyll sensitive, the EVI is more responsive to canopy structural variations, including LAI, canopy type, plant physiognomy, and canopy architecture. The EVI growing index acts as the main one for establishing the dependence of projective coverage of different plant communities with the LAI index. The two индекса вегетации complement each other in global vegetation studies and improve upon the detection of vegetation changes and extraction of canopy biophysical parameters. However, the NDVI index turns out to be sensitive to the influence of atmosphere, clouds, cloud shadow, of soil brightness, soil color. The blue band also requires more difficult and varying atmospheric correction schemes that might cause problematic consistency of EVI values [21]. The vegetation index EVI2 was developed by Jiang et al. [22]. EVI2 is calculated with only red and NIR bands without the implementation of a blue band. The general idea behind the research activities done by Jiang et al. [22] was to keep the best similarity with the 3-band (original) EVI:

$$EVI2 = \frac{2.5(\rho_{NIR}-\rho_{Red})}{\rho_{NIR}+2.4\rho_{Red}+1}. \quad (3)$$

NDWI Normalized Difference Water Index can be expressed as:

$$NDWI = \frac{\rho_{Green}-\rho_{NIR}}{\rho_{Green}+\rho_{NIR}}. \quad (4)$$

Chlorophyll is the green pigment present in the leaves and plays an important role in photosynthesis. For this purpose, the chlorophyll index (CI) is widely used to calculate the total chlorophyll content of the leaves (5). To obtain a more detailed estimate, it is better to use the spectral range of the spectrum ρ_{Red_edge}(6):

$$CI_{green} = \frac{\rho_{NIR}}{\rho_{Green}} - 1 \quad (5)$$

$$CI_{gRed_edge} = \frac{\rho_{NIR}}{\rho_{Red_edge}} - 1 \quad (6)$$

The *CIgree*n and *CIred-edge* values are sensitive to small variations in the chlorophyll content and consistent across most species. The red-edge band is a narrow band in the vegetation reflectance spectrum between the transition of red to near infra-red. The total chlorophyll content is linearly correlated with the difference between the reciprocal reflectance of green/ red-edge bands and the NIR band. CIred-edge – using observations in the red-edge (730 nm) are widely used. Merris Terrestrial Chlorophyll Index (MTCI). The MTCI was designed to estimate chlorophyll content especially from Merris datasets.

This index is sensitive to a wide range of chlorophyll concentration since the reflectance from the NIR, red-edge and red bands are used in the calculation:

$$\mathrm{MTCI} = \frac{\rho_{850} - \rho_{730}}{\rho_{730} - \rho_{675}}. \quad (7)$$

The Chlorophyll Absorption Ratio Index *(CARI)* was then developed [23] and can be expressed as:

$$CARI = \frac{|a*670 + \rho_{670} + b|}{(a^2+1)^{0.5}}, \quad (8)$$

$$a = \frac{(\rho_{700} - \rho_{500})}{150}, \quad (9)$$

$$b = \rho_{550} - 550a. \quad (10)$$

Modified Chlorophyll Absorption in Reflectance Index (*MCARI*). *MCARI* gives a measure of the depth of chlorophyll absorption and is very sensitive to variations in chlorophyll concentrations as well as variations in Leaf Area Index (LAI). MCARI values are not affected by illumination conditions, the background reflectance from soil and other non-photosynthetic materials observed. Daughtry et al. improved the CARI by proposing a modified CARI (*MCARI*) [24]:

$$MCARI = \frac{1.5[2.5\rho_{800} - \rho_{670}) - 1.3(\rho_{800} - \rho_{550})]}{\sqrt{(2\rho_{800}+1)^2 - (6\rho_{800} - 5\rho_{670}) - 0.5}}. \quad (11)$$

The MCARI is more sensitive to leaf chlorophyll concentrations. Daughtry et al. [24] found that LAI, chlorophyll, and the chlorophyll-LAI interaction accounted for 60, 27, and 13% of the MCARI variation. Even though the MCARI formula is not related to the NIR bands, good predictions were still found. Normalized Difference Red-Edge Index (NDRE). The Normalized Difference Red-Edge Index can be calculated only if the red-edge band is available. The red-edge band is very sensitive to medium to high levels of chlorophyll content. Hence, red-edge is a good indicator of crop health in the mid to late stage crops where the chlorophyll concentration is relatively higher. Also, the NDRE could be used to map the within-field variability of foliar nitrogen to understand the fertilizer requirements of the crops. This index can be expressed as:

$$NDRE = \frac{\rho_{NIR} - \rho_{Red_edge}}{\rho_{NIR} + \rho_{Red_edge}}. \quad (12)$$

The red-edge band is capable of penetrating the leaf better than the red band that is absorbed by the chlorophyll in the first few layers.

2.2. Unmanned survey

In 2019 year on the territory of the experimental site of the farm "Peaceful" of the Kochenevsky district of the Novosibirsk region and the field hospital of the Siberian Federal Scientific Center of Agrobiotechnologies a set of works was carried out on aerial photography using two cameras Sony alpha 6000 and Sequoia. The multispectration survey was carried out before sowing and during the main periods of wheat vegetation (coking, colouring, milk ripeness) between May and the end of August. This allowed the construction of raster data models using the Pix4D software package software (Pix4D SA, Lausanne, Switzerland), AcrGIS 10 detailed

orthophotoplane terrain with a resolution of 0.10 cm (per pixel). In addition, soil surveys were carried out on the territory of the research to determine the reserves of productive moisture, the state of agrochemical elements, the measurement of chlorophyll with territorial reference to elements of microrelief using high-precision satellite receivers Triump-2, Triump-LS. As a result, using ENVI 5.5 software, different vegetation indices were calculated from space images from 2000-2019 years and raster maps of 4 sensor channels of Sequoia multispectration camera.

3. CONCLUSION

Vegetation indices are an effective tool for automated recognition of crops, as well as for assessing their condition in narrow spectral zones of the red and infrared ranges of the spectrum. However, each index has its own characteristics of changing spectral brightness depending on many factors. Therefore, assessment of vegetation condition can be made on the basis of comparative analysis of results of in-kind (field) measurements. Greater potential for crop yield prediction is associated with unmanned technologies that provide more detailed estimates of vegetation indices linked to microrelief elements on ultra-high spatial resolution orthophotoplanes.

ACKNOWLEDGEMENT: *Further studies are aimed at identifying the relationship between vegetation indices and soil conditions, terrain conditions and Earth remote sensing results.*

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INTERNATIONAL BANKING BUSINESS' EXPANSION IN DEVELOPING MARKETS: PRE AND POST-CRISIS FRAMEWORKS

Fahri Murshudli
Azerbaijan State University of Economics (UNEC)
Baku, Istiqlaliyyat str., 6, AZ1001, Azerbaijan
fahri_murshudli@yahoo.com

Sergii Sheludko
Odessa National Economic University
Odessa, Preobrazhenskaya str., 8, 65082, Ukraine
s.szeludko@gmail.com

ABSTRACT

The paper is devoted to the substantiation of foreign banks' role in the financial systems' development of emerging markets. It is proved that an expansion of the international banking business can bring negative consequences, but in general it provides the decisive influence on credit systems' strengthening. Banking services markets of developing countries usually are small. This is due to the low level of growth, high inflation, financial restrictions, and administrative or corruption interference in banks' credit policies. As a result, in mentioned countries occurs the vicious circle of financial insolvency: undeveloped financial systems generate high margins, which slows down economic growth – and thus prevents financial systems' development. The possible way out of this disaster is in financial globalization and integration processes. Forenamed manifested in banking through the foreign credit institutions' diffusion into local markets. It is shown that the detrimental effect of aggressive credit policies of foreign banks caused the dramatic implementation of the crisis in Ukraine. The consequences could be lesser if the central bank pursued a more prudent policy for currency restrictions and risks supervision. Withal, the influence of foreign banks in Azerbaijani financial system was more restrained because of the export-oriented economics, which ensures stable currency inflow.

Keywords: *International banking, Banking convergence, Credit expansion, Foreign bank, Foreign exchange regulation*

1. INTRODUCTION

Modern international economic relations' researchers designate the global economy a young category of economic science, origins of which barely reach the end of the 19th century, and its flourishing falls at the beginning of the 21st century. Such interpretations are often transferred to international finance, including international banking. Nevertheless, the desire to achieve an international, cross-border, widespread range of activities was already inherent in ancient banking institutions – the genesis of the banking business is indisputable evidence of its international nature primacy over mono-national banking. One of the most important changes in international financial relations in the current decade has been the growing importance of developing countries as sources and directions for private capital flows. The processes of deregulation and liberalization of domestic financial markets in these countries and the reduction of barriers for foreign capitals have led to deeper financial integration between them and developed countries. In the structure of foreign capitals flowing into developing countries over the past few years, loans given to enterprises and banks from these countries by international banks are playing an increasingly important role. At the same time, cash flow directions are gradually reorienting, turning unilateral donor relations between developing and leading economies into more balanced partnerships based on equality and mutual benefit.

The role of foreign banks' capital in the development of financial markets in developing countries has repeatedly been the subject of research. Among the international publications of greatest interest in the context of this paper, it should be mentioned (Naaborg, Scholtens, de Haan, Bol, de Haas, 2004; Cull, Peria, 2010, 2013; Hassan, Sanchez, Ngene, Ashraf, 2012; Lee, Hsieh, Dai, 2012; Claessens, van Horen, 2014; Delis, Kokas, Ongena, 2016; Cull, Peria, Verrier, 2017). This is mainly research with a wide geographical coverage, which does not allow paying enough attention to regional characteristics of individual countries – namely, developing countries of the post-communist region. A more special approach is noted in the monograph (Iwanicz-Drozdowska, Bongini, Smaga, Witkowski, 2018), as well as in the publiccations of scientists from Ukraine and Azerbaijan, in particular (Vladichin, 2011; Kornyliuk, Ivasiv, Dyba, 2012; Dzyublyuk, Vladymyr, 2014; Kovalenko, 2016; Mamedov, 2007, 2008; Nabiyev, Musayev, Yusifzada, 2016; Murshudli, Kornyliuk, Dilbazi, 2019a, 2019b). Nevertheless, the problem of transformation in form and scale of international banking business (hereinafter – IBB) expansion in developing countries under the influence of the global financial crisis of 2008 (hereinafter – GFC) has still not received appropriate reflection in the specialized literature. This determines the purpose and relevance of present paper. To achieve this goal, both scientific-theoretical and econometric analysis of the international banks' activities in the financial markets of developing countries was realized.

2. INTERNATIONAL BANKING BEFORE GLOBAL CRISIS OF 2008

The decisive factor in expanding IBB's expansion in emerging markets is the removal of legislative restrictions on the admission of foreign capital to national banking systems. Along with this, there is a cardinal change in international economic relations, and above all, the key structure that ensures the growth of globalization itself – the global banking system. A qualitative transformation of the development's nature and structure of international banks, the formation of their new strategic paradigm in the context of financial globalization and the convergence of national economies is accompanied by an increase in international capital's inflow into potentially large-scale developing economies, primarily in the countries of the post-communist region. At the dawn of our century, financial systems of countries, which had been undergoing a political and economic transformation, were relatively small, while their domestic capital markets were underdeveloped. In most of these states, banks with foreign capital dominated a banking system, which was the result of large-scale privatization processes in the early 1990s with the participation of foreign investors. Studies confirm that the financial system in this configuration weakly contributes to economic growth (Petkovski, Kjosevski, 2014; Iwanicz-Drozdowska et al., 2018). In our opinion, this was due more to the general weakness of state regulation and supervision, as well as to a certain degree of corruption in the monetary authorities at that time, than due to the unsatisfactory level of development of post-communist economies. Alternative views on this problem indicate that countries with poorly developed financial systems generally suffered much less as a result of GFC. As a rule, in developing economies, it is banks that occupy a dominant position in the financial system; therefore, their stability largely determine the situation in money and capital markets.

2.1. Institutional Features of International Banking in Developing Countries

Studies show the isolation of the institutional model of international banks in developing economies (Naaborg et al., 2004; Hassan et al., 2012; Cull, Peria, 2013). To ensure its presence in such countries, IBB forms and contains various types of divisions that make up its general and local structure. Local regulators for legislative and supervisory purposes consider such units in two legal forms – a foreign bank and a bank with foreign capital. According to the definition of the International Working Group on External Debt Statistics of, a foreign bank is a credit institution whose strategic decision-making center is located outside the country in which it

operates. Thus, the geographical remoteness of supreme management is a key feature of such a unit, but not the only one: its owners are foreign citizens, such a bank operates under the special permission (license) of the local central bank for this kind of institutions and is in a double legal field as a non-resident legal entity (in the form of a foreign branch or overseas office). Closely related to the previous one is the concept of a bank with foreign capital, the main feature of which is the presence of a share of at least one foreign investor in the authorized capital. The minimum size of such a share is set normatively – as a rule, it is about 10% or more. Unlike the first, this type of bank is a resident legal entity, the sum of the rights and obligations of which correspond to those of local-own banks. These institutions are commonly referred to as subsidiary banks. In our opinion, the main differences between a foreign bank and a bank with foreign capital are in their operating activities. Since first ones are more closely bound by legislative restrictions, the list of their possible services is much smaller. In turn, subsidiary banks have to comply with local general standards, which make it difficult to place large volumes of foreign resources. In modern practice, the choice of a model for the presence of IBB in a particular country depends on the expected type of activity: if it is necessary to accompany investments or work in the securities market, the establishment of a foreign bank is rational. The implementation of retail services or provision of a universal activity requires functioning in the form of a bank with foreign capital. Considered the features of the legal form of IBB's presence, it is possible to determine the organizational characteristics that distinguish it from classical domestic banks (table 1). It is worth to note, that foreign banks are constantly evolving, so the list of characteristics presented below is not exhaustive. In addition, due to subjective differences in the philosophy of carrying out activities by various banks, driven by historical or cultural reasons, there are grounds for a remark: in order to be considered as an international one, it is enough for the banking business to own most of the listed features.

Features		International Banks	Domestic Banks
1. Strategic goal		Dominance in the global / macro-regional market	Dominance in the domestic market
2. Nature of equity		Multinational, often "patchwork"	Mono-national, resident
3. Regulatory jurisdiction		Parent bank's regulator + countries of presence regulators	Local regulator
4. Legal personality	general	Parent bank's local law + International private law	Local national law
	special	Countries of presence law	
5. Outlet network architecture		Complex, branch-type	Simple, branchless, may be regionally limited
6. Correspondent network		Wide (by country)	Narrow (by currency)
7. Corporate culture		Globalized, national characteristics assimilated	Based on the principles of national culture

Table 1: Main features of international banks in comparison with the domestic banks of developing countries
(Source: Developed by authors)

The strategic goal of an international bank is to dominate, if not on the global market, then at least on a continental or macro-regional scale. This feature is generic for IBB: precisely at the moment when a domestic bank (even if it already contains foreign branches or representative offices) aims to occupy a certain share of the banking services market in an adjacent country or group of countries, and takes steps to achieve this goal, he gets an international character. The equity of such a bank has a multinational nature, the geography of its shareholders can be so complicated that it is almost impossible to determine the dominant country of origin (at the same time, the capital of the parent bank can be homogeneous). The cross-border nature of its activity creates regulatory complications for IBB's functioning.

While an institution operating in one banking services market falls under the jurisdiction of only the local regulator, multinational banks must take into account the restrictions of both the supervisor at the location of the parent office and the local central banks in the countries of presence of such business. This double jurisdiction also takes place in the legal regime of their activities, which is determined separately: the general legal personality – by the national legislation of the parent bank taking into account international law, and the special legal personality – by local regulations of the countries where the subsidiaries are operating. The difference between national and international banking business lies in the way the outlet network is organized – the second type is characterized by certain autonomy, since the territorial divisions in the countries of presence are grouped around regional branches or subsidiary banks. This method of operating requires the use of complex accounting and analytical procedures as well as the consolidation of the balance sheets of regional units. The architecture features of IBB are also determined by fairly clear differences in the construction of the correspondent network. Due to the regional coverage, such structures have subsidiary banks in each country that is important to them, and it makes relatively cheap to maintain a large number of regular correspondents. This advantage forms competitiveness in the market of international transfers and settlements. A sufficiently indicative feature of international banks (especially in post-communist countries) is their corporate culture and the philosophy of such a business in general. While national credit institutions are trying to distinguish themselves on the domestic market by their traditional nature and local cultural identity, the global banking business is inherently forced to go through the unification and assimilation of national characteristics.

2.2. Foreign Banks' Rise in Post-Communist Countries

The first cautious steps of international banks in the financial systems of post-communist countries quickly grew into the active conquering of new markets, which coincided in time with the dynamic political and economic transformations of the late 1990s and early 2000s. According to some studies (Claessens, van Horen, 2014), this atypical trend for the world as a whole was the result of a wave of reforms – primarily related to the rapid and spontaneous deregulation and globalization of banking systems, which continued until GFC (Figure 1).

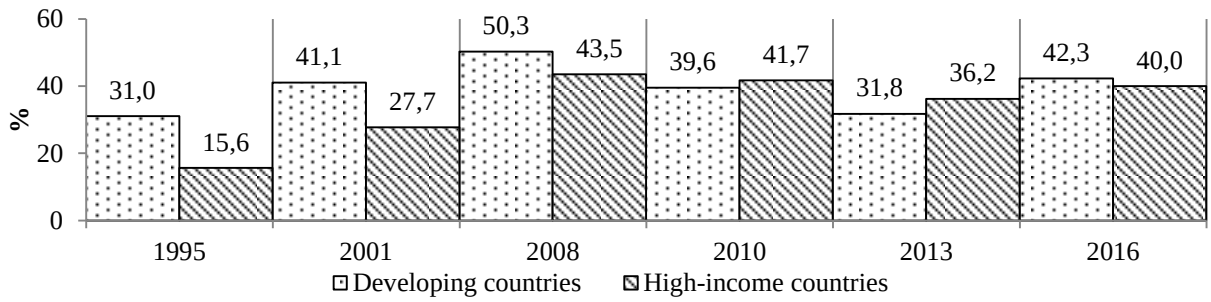

Figure 1: Share of foreign-owned banks, 1995-2016
(Source: Calculated based on Cull, Peria, Verrier, 2017)

Fig. 1 demonstrates the fundamental expansion of IBB in emerging economies, right up to the onset of GFC. However, even more rapidly foreign banks increased their presence in developed countries, although they still did not reach 50% of the market share. Before the crisis, a high proportion of banks with foreign capital was usually considered as a stabilizing factor that contributes to the solidity of banking systems in developing countries. However, as a result of an unbiased analysis of the influence of parent banks on the credit policy of subsidiaries in the process of crisis unfolding, unambiguously positive views on the role of IBB has been replaced by a more skeptical approach. The ambiguity of the consequences of foreign expansion is also underlined by conflicting global trends (Figure 2).

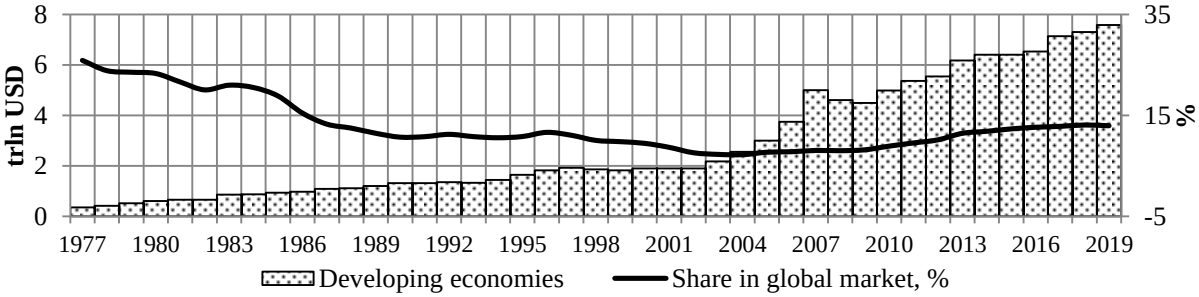

Figure 2: Global dynamics of IBB in developing countries, 1977-2019
(Source: Calculated based on Bank for International Settlements data)

According to Fig. 2, during the entire observed period, the absolute size of international banks' operations with residents of developing countries grew continuously, with the exception of brief drops in 1993, 1998-2000, 2008-2010 (which corresponds, in particular, to Asian, Russian and Argentine defaults). At the same time, the share of this business on a global scale was rapidly declining, reaching 7.2% in 2004. In our opinion, this trend can be attributed to the consequences of financial globalization, when import payments were redirected to the benefit of local subsidiary banks, in fact, find themself closed inside the country in the conditions of a lack of resources against the backdrop of aggressive lending. Under such conditions, the main threat was the pronounced pro-cyclical reaction of subsidiary banks to local conditions, since the expected diversification of the domestic banking markets of developing countries could not ensure the proper independence of branches from capital and liquidity of parent banks. The foregoing is also true for banking systems of post-communist countries. In the early 1990s, banks in these countries were state-owned and actually operated under autarky conditions. Nevertheless, universal liberalization and the removal of legislative restrictions on the internationalization of financial markets in a short time led to the formation of significant competition from the newly created subsidiaries of international banking groups (Figure 3).

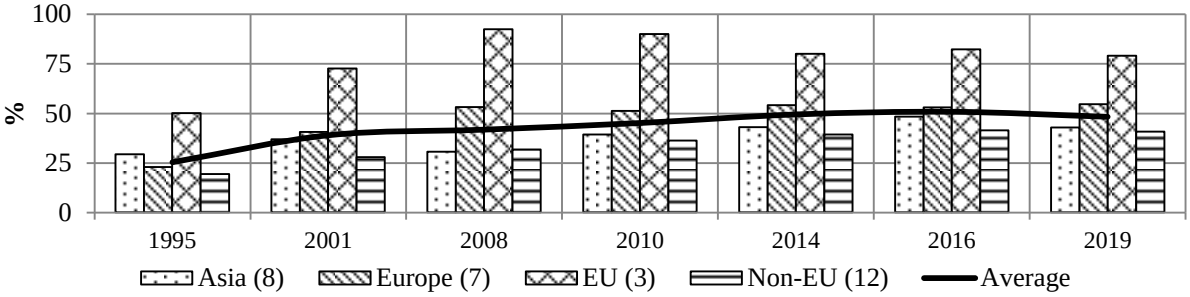

Figure 3: Share of foreign-owned banks in post-communist countries, 1995-2019
(Source: Calculated based on national central banks' data)

Scientists (Iwanicz-Drozdowska et al., 2018) connect the peculiarity of the countries under consideration at that time with the extremely low quality of potential borrowers, especially among firms, caused by shock reforms, which led to numerous bankruptcies of state enterprises. Since such a debt burden fell on local banks, depriving them of growth opportunities, the expansion of foreign banking capital remained the only measure for developing post-communist financial systems. As Fig. 3 describes, the largest share of IBB falls on the three Baltic countries, which joined the EU in 1995 – on the eve of GFC it amounted to more than 90%, while in other countries such banks occupied on average no more than a third of the market. At that time, the banking systems of Asian countries were characterized by relatively high foreign participation, initially even exceeding the average European indicator. Despite the dire consequences of GFC, it is worth to note, that a permanent increase in the average value

of the share of international banks in all considerate countries – it is suggested that in 2019 every second bank in post-communist countries was characterized by foreign participation. The diffusion processes of IBB into the markets in transition originate in the mid-1990s, and the results of empirical studies (Naaborg et al., 2004) suggest a positive impact on the institutional development of local financial systems.

3. INTERNATIONAL BANKS' ACTIVITIES IN TERMS OF GLOBAL INSTABILITY

GFC has caused structural changes in the banking systems of almost all countries, defining for decades ahead the development of both banking business strategies and instrumental support for regulation and supervision, in particular the macroprudential policy. After 2008, the banking services markets of developing countries became to be characterized by much lower profitability and lending rates, but the shock experience ensured an unprecedented development of risk management systems, both at the macro and micro levels, which can compete with similar instruments of developed countries.

3.1. Evidence from Foreign Currency Loans Market

The rapid and dramatic development of GFC caused a widespread decline in the real and, as a consequence, in the financial sectors of developing economies. This served as the basis for rethinking the strategy and tactics of international banking in terms of the expansion of foreign banks into post-communist markets. Regulatory restrictions initiated by the crisis in early 2009 put an end to the galloping financial globalization. At the same time, majority of developing countries remained under the significant influence of import cash flows, since over the previous decade foreign currency savings and lending had firmly taken leading positions in underdeveloped domestic markets amid high exchange rate volatility (Figure 4).

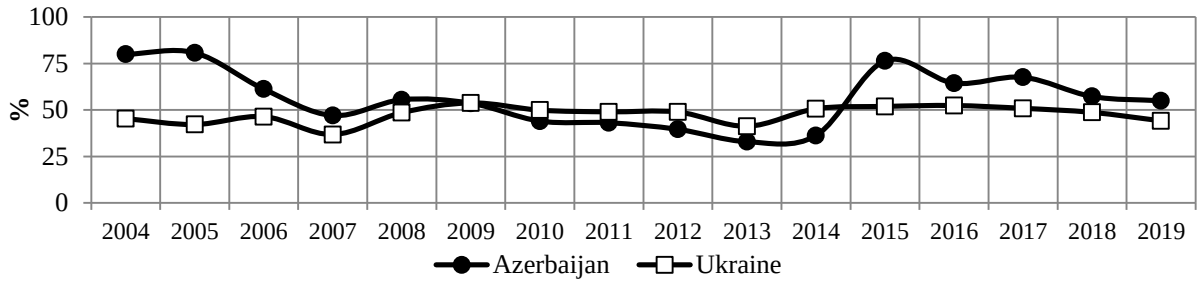

Figure 4: Share of currency deposits in Azerbaijan and Ukraine, 2004-2019
(Source: Calculated based on national central banks' data)

Fig. 4 convincingly testifies a difference of speculative motives of economics' subjects in the countries with antagonistic models of foreign trade. While export-oriented Azerbaijan experienced a sharp decrease in the share of foreign currency savings in favor of a stronger manat during the crisis period of 2008–2013, residents of Ukraine gave stable preference to foreign currency as a deposit instrument (with the exception of 2013, when political upheavals caused devastating damage to economic development). The scenarios of foreign currency lending also differ in the countries (Figure 5). The calculation of Loans-to-Deposits Ratio presented in Fig. 5 (which is also an indicator of foreign currency liquidity of banks) shows that in both countries currency credit expansion was boosted up to 2008. However, while in Azerbaijan, as a result of a more cautious approach to Eurodollar-loans during the crisis years, the indicator did not exceed 2.0, in Ukraine in 2008-2009 there was a strongly marked credit boom, where at the peak the volume of loans in foreign currency was almost four times exceeded the volume of similar deposits. It is worth to note that the credit boom, as the process of expanding lending (in this case, in foreign currency), in its essence and consequences differs

significantly from credit expansion, which has strategic competitive goals, while the purpose of the credit boom is to maximize the possible profit using the existing short run situation (Sheludko, 2017).

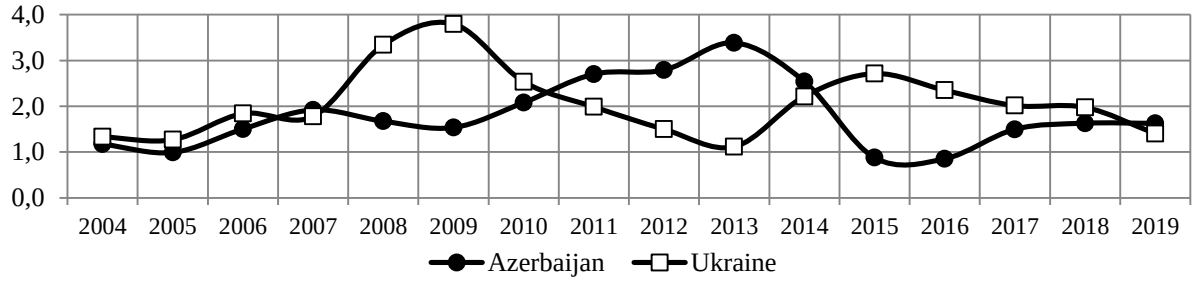

Figure 5: Currency loans-to-deposits ratio in Azerbaijan and Ukraine, 2001-2019
(Source: Calculated based on national central banks' data)

It is deserves of particular note that Ukrainian banks – primarily subsidiaries of international ones – in addition to providing them currency loans within the borrowed funds, also create credits from imported resources, which negatively affected liquidity. As the study convincingly proves (Anginer et al., 2017), subsidiary banks in developing countries are strongly exposed to the transfer of default risk from parent banks – however, this dependence is significantly weakened if mostly (or only) local deposit resources are used as a basis for lending. The revealed trends are also observed in the dynamics of the actual banking multiplier (Figure 6).

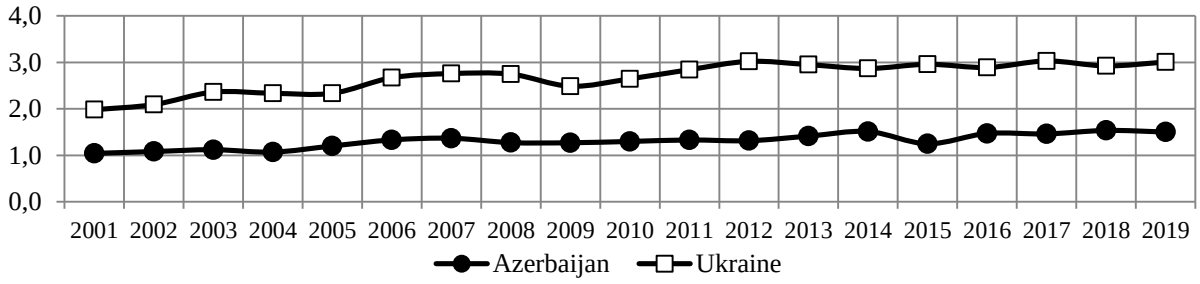

Figure 6: Banking multiplier in Azerbaijan and Ukraine, 2001-2019
(Source: Calculated based on national central banks' data)

As shown in Fig. 6, while Azerbaijani banks adhered to a very conservative credit policy, which is indicated by multiplier values not exceeding 1.5, in Ukraine during the analyzed period there is a large-scale lending (except for the crisis year of 2008). So, if in 2001–2005 there was a little more than 2UAH of loans per 1UAH cash, then on the eve of the crisis and after overcoming its first wave it was about 3UAH, which indicates that banks actively use their credit potential.

3.2. Estimation of the Impact of International Banking on Developing Banking Systems

In order to justify the range of expansion of IBB's impact on the banking services markets of developing countries, the relationship between the relevant indicators was analyzed. To illustrate the degree of diffusion of foreign banks in the economies of Azerbaijan and Ukraine, it is advisable to use the indicator of the cross-border net position of international banks for residents of these countries according to the Bank for International Settlements (X1). The main indicators of the state of banking systems were following: capitalization (the share of banks' equity in the system assets) for X2, Loans-to-Deposits Ratio for X3, the share of deposits in bank passives for X4, and the actual multiplier for X5.

Since the observed trends are very different before and after GFC, the econometric analysis was carried out in two stages – for the period 2001–2008 and 2009–2019. Variables are presented quarterly in the form of coefficients.

	2001Q1-2008Q4					**2009Q1-2019Q4**				
	X_1	X_2	X_3	X_4	X_5	X_1	X_2	X_3	X_4	X_5
X_1 (-1)	0.77	0.02	-0.84	0.21	-0.01	0.39	0.01	-0.13	0.03	0.12
	(0.28)	(0.02)	(0.30)	(0.29)	(0.09)	(0.17)	(0.02)	(0.16)	(0.05)	(0.08)
	[2.74]	[1.30]	[-2.76]	[0.72]	[-0.09]	[2.25]	[0.17]	[-0.86]	[0.59]	[1.46]
X_2 (-1)	2.99	0.36	5.15	-0.23	-1.07	-1.35	0.88	0.40	0.46	-0.31
	(2.80)	(0.19)	(3.00)	(2.88)	(0.89)	(0.91)	(0.11)	(0.83)	(0.26)	(0.44)
	[1.07]	[1.91]	[1.72]	[-0.08]	[-1.21]	[-1.49]	[8.28]	[0.49]	[1.75]	[-0.70]
X_3 (-1)	-0.12	0.02	0.42	0.03	0.01	-0.13	0.01	0.98	-0.10	0.08
	(0.15)	(0.01)	(0.16)	(0.16)	(0.05)	(0.14)	(0.02)	(0.13)	(0.04)	(0.07)
	[-0.76]	[2.33]	[2.57]	[0.21]	[0.23]	[-0.96]	[0.66]	[7.66]	[-2.54]	[1.20]
X_4 (-1)	0.03	0.01	-0.35	0.68	-0.03	0.46	0.08	0.53	0.24	0.80
	(0.17)	(0.01)	(0.19)	(0.18)	(0.06)	(0.71)	(0.08)	(0.64)	(0.21)	(0.34)
	[0.16]	[0.53]	[-1.91]	[3.82]	[-0.47]	[0.65]	[0.99]	[0.83]	[1.15]	[2.32]
X_5 (-1)	-0.18	-0.05	0.45	0.27	0.82	0.30	-0.01	0.01	0.06	0.39
	(0.37)	(0.032)	(0.40)	(0.38)	(0.12)	(0.28)	(0.03)	(0.26)	(0.08)	(0.14)
	[-0.50]	[-2.04]	[1.13]	[0.71]	[7.02]	[1.07]	[-0.18]	[0.03]	[0.78]	[2.85]
C	-0.13	0.13	-0.26	-0.26	0.41	-0.30	-0.03	-0.31	0.34	0.44
	(0.62)	(0.04)	(0.66)	(0.64)	(0.20)	(0.47)	(0.05)	(0.42)	(0.14)	(0.23)
	[-0.21]	[3.11]	[-0.39]	[-0.40]	[2.07]	[-0.65]	[-0.51]	[-0.74]	[2.53]	[1.93]
R-squared	0.81	0.80	0.83	0.44	0.91	0.81	0.87	0.95	0.80	0.72
F-statistic	21.456	20.29	23.96	3.96	50.42	33.01	50.20	145.88	30.29	19.80
AkaikeAIC	-1.16	-6.55	-1.02	-1.10	-3.45	-1.35	-5.63	-1.53	-3.81	-2.79
SchwarzSC	-0.88	-6.27	-0.74	-0.82	-3.17	-1.10	-5.38	-1.29	-3.57	-2.54
Observ.adj.	31	31	31	31	31	44	44	44	44	44

Table 2: VAR modeling results for Azerbaijan, 2001Q1-2019Q4
(Source: Calculated based on Bank for International Settlements and Central Bank of the Republic of Azerbaijan data)

The results of a fairly high-quality econometric assessment (Table 2) indicate that in the pre-crisis period, the influence of IBB on the domestic market of Azerbaijan was significant for the level of banking system capitalization and for further growth of foreign presence (with a lag of 1, determined by both Akaike and Schwarz criteria). After GFC, the trend changed, and import banking operations began to significantly affect the multiplier. All this points to the transformation of IBB's role in Azerbaijan: if until 2008 they acted as an important factor in maintaining financial stability, nowadays their role is reduced to ensuring credit activity, thereby positively influencing development without being a lever of an external impact. The similar analysis of IBB's impact on the Ukrainian banking system (Table 3) demonstrates less optimistic prospects. Until 2008, subsidiaries of foreign banking groups played a systemically important role as accumulators of savings for the population and enterprises (as indicated by t-statistics with the coefficient of the equation X3 with a reliability of 94%). In the post-crisis period, IBB in Ukraine not only retained this influence, but expanded it to crediting, providing a significant expansion of lending (as shown in Fig. 5). This contradictory position is also confirmed by other studies (Petkovski, Kjosevski, 2014), (Iwanicz-Drozdowska et al., 2018).

	2001Q1-2008Q4					2009Q1-2019Q4				
	X_1	X_2	X_3	X_4	X_5	X_1	X_2	X_3	X_4	X_5
X_1(-1)	0.93	-0.01	-0.67	0.16	-0.40	0.66	-0.01	-0.23	0.032	0.31
	(0.14)	(0.01)	(0.22)	(0.05)	(0.15)	(0.13)	(0.02)	(0.10)	(0.02)	(0.13)
	[6.81]	[-0.34]	[-3.09]	[3.04]	[-2.66]	[4.93]	[-0.19]	[-2.42]	[1.71]	[2.33]
X_2(-1)	1.60	0.48	2.50	-1.23	1.39	-0.30	0.89	-0.25	0.15	1.05
	(3.09)	(0.19)	(4.91)	(1.22)	(3.42)	(0.61)	(0.08)	(0.43)	(0.09)	(0.61)
	[0.52]	[2.49]	[0.51]	[-1.01]	[0.41]	[-0.50]	[11.00]	[-0.57]	[1.79]	[1.72]
X_3(-1)	0.23	-0.03	-0.01	0.15	0.47	-0.15	0.01	1.11	-0.07	-0.30
	(0.23)	(0.01)	(0.37)	(0.09)	(0.26)	(0.19)	(0.03)	(0.14)	(0.03)	(0.19)
	[1.01]	[-1.77]	[-0.01]	[1.70]	[1.83]	[-0.76]	[0.15]	[8.09]	[-2.60]	[-1.57]
X_4(-1)	0.72	-0.12	-2.25	1.17	2.44	-0.69	-0.01	1.17	0.55	-0.21
	(1.06)	(0.07)	(1.69)	(0.42)	(1.18)	(1.18)	(0.16)	(0.84)	(0.17)	(1.19)
	[0.68]	[-1.78]	[-1.33]	[2.80]	[2.07]	[-0.58]	[-0.03]	[1.39]	[3.31]	[-0.18]
X_5(-1)	-0.10	-0.01	-0.13	0.01	0.56	-0.06	-0.01	0.01	0.01	0.47
	(0.12)	(0.01)	(0.20)	(0.05)	(0.14)	(0.13)	(0.02)	(0.09	(0.02)	(0.13)
	[-0.84]	[-0.51]	[-0.66]	[0.30]	[4.09]	[-0.51]	[-0.16]	[0.04]	[0.03]	[3.64]
C	-0.67	0.18	2.69	-0.20	-1.00	0.76	0.02	-0.70	0.30	1.92
	(1.22)	(0.08)	(1.93)	(0.48)	(1.35)	(0.78)	(0.10)	(0.56)	(0.11)	(0.79)
	[-0.55]	[2.34]	[1.39]	[-0.41]	[-0.74]	[0.97]	[0.17]	[-1.26]	[2.69]	[2.43]
R-squared	0.93	0.90	0.91	0.94	0.94	0.60	0.87	0.96	0.94	0.82
F-statistic	66.37	44.14	49.72	73.87	76.17	11.37	50.80	195.90	113.21	34.21
AkaikeAIC	-2.18	-7.72	-1.25	-4.04	-1.97	-2.10	-6.11	-2.77	-6.02	-2.08
SchwarzSC	-1.90	-7.44	-0.98	-3.77	-1.70	-1.86	-5.87	-2.53	-5.78	-1.84
Observ.adj.	31	31	31	31	31	44	44	44	44	44

Table 3: VAR modeling results for Ukraine, 2001Q1–2019Q4
(Source: Calculated based on Bank for International Settlements and National Bank of Ukraine data)

4. CONCLUSION

The results of the study indicate a causal relationship between the transformation of the international banking role in the development of banking systems in emerging markets and the characteristics of these countries' economies, in particular, the type of international trade. The growing importance of developing countries as sources and directions for private capital flows is accompanied by deeper financial integration. As a result, the role of cross-border flows of bank capital in the development of financial markets is increasing, making them integral elements of the banking systems' vitality. The degree of importance of such resources directly depends not only on the solidity of the local financial infrastructure, but also on the insightful and balanced central banks' policy. The distinctive position of IBB in post-communist countries is determined by both institutional differences and the specifics of GFC layering on their economies' transition. The results of the econometric analysis demonstrate the difference between the supporting role of international banks in export-oriented Azerbaijan and the core influence in import-dependent Ukraine. Thus, the pre- and post-crisis frameworks of the foreign banks' expansion in developing countries are of a dual nature, and can serve both as a booster and as a brake of the domestic financial market's development.

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IMPACT OF INNOVATIONS ON THE STANDARD OF LIVING IN THE CONTEXT OF THE CRISIS AND FALLING EXPORT PRICES FOR ENERGY RESOURCES

Farhad Rahmanov
Azerbaijan State University of Economics (UNEC)
Baku, Istiqlaliyyat str., 6, AZ1001, Azerbaijan
farhad52@live.ru

Inna Bagautdinova
Ufa State Aviation Technical University
Ufa, Karl Marx St., 12, 450008, Russia
Inna.bagautdinova@yandex.ru

Irina Degtyareva
Ufa State Aviation Technical University
Ufa, Karl Marx St., 12, 450008, Russia
idegtyareva57@mail.ru

ABSTRACT

The article analyzes the impact of innovative technologies on the living standard of the population, which contribute to the best satisfaction of people's desires and needs. This connection can also be explained by the choices that innovations provide to people when increasing the product range. In addition, innovation involves improving processes and technologies that lead to easier movement, better health care, better communication, and so on. The standard of living, in turn, serves as an important indicator in the socio-economic life of society. In the context of a coronavirus pandemic and falling prices for main exported goods, it is necessary to increase production volumes or reduce fixed costs in order to maintain the previous economic situation. This situation leads to a significant deterioration in the quality of life of people, as the labor load increases significantly, and companies reducing the number of employees and reviewing social policies reduce production costs. Thus, innovative solutions could be an excellent way out not only at the micro, but also at the macro level, and increase the country's competitiveness. New technologies would allow for an increase in production volumes at the same cost, which could compensate for the global drop in energy prices. The research conducted in the article shows that for the majority of States today, the most preferable way of development is the "innovative economy". A regression model is constructed, which confirms the existence of an innovative impact with its high quality, and the significance of the positive impact of each of the created indices is revealed.

Keywords: *Competitiveness, Innovative economy, Innovative impact, New technologies, Socio-economic life, Standard of living*

1. INTRODUCTION

New technologies have a great impact on the living standard, as they contribute to the best satisfaction of people's desires and needs. This connection can also be explained by the choices that innovations provide to people when increasing the product range. In addition, innovation involves improving processes and technologies that lead to better health care, communication, and so on. Innovation is the result of the development of fundamental and applied science, and science is the key engine of progress that uniquely improves the quality of life. The standard of living is an important indicator in the socio-economic life of society. In developed countries, the main task of the state is to ensure a decent level and quality of life for the population.

Finding a relative measure of the level and quality of life is extremely difficult, due to the complexity of the measurement object itself: people's needs for material and spiritual goods are in constant dynamics, depend on a system of external (economic and geographical location, natural and climatic conditions, financial security, etc.) and internal (income, consumption and expenditure, the ratio of income and cost of living, etc.) factors. The purpose of this paper is to investigate the impact of innovation on the standard of living in Russia, namely:

- Analyze statistically significant indicators of innovative development of the country that affect the standard of living of the population;
- Conduct a regression analysis of the impact of innovation activity on the human development index (HDI);
- Create a model for further forecasting the impact of innovation activity on living standard.

2. RESEARCH OF THE POPULATION'S STANDARD OF LIVING AND INNOVATIVE DEVELOPMENT IN RUSSIA

Today, innovative activities have brought the world community to a new, higher stage of development. Innovation has a huge impact on the economy. It is not even possible to cover the full breadth of their application. But we can identify the most significant effects. First, innovation affects the quality of products, i.e. there are completely new or improved products that can best meet human needs. Secondly, they contribute to economic growth, i.e. new branches of the economy are created. Third, the share of competent specialists who work with advanced technologies and create high-quality new products is increasing. The analysis of the population's income level is essential for assessing the living standards of the population and developing socio-economic policies. The standard of living of the population largely depends on the amount of monetary income, the uniformity of their distribution and purchasing power.

2.1. Analysis of the dynamics of the main indicators of the level and quality of life in Russia

Innovations affect the standard of living of the population not only directly (by increasing the range of products and meeting human needs), but also indirectly. New technologies increase competitiveness, which leads to economic growth, which in turn improves well-being. In the context of falling prices for Russia's main exported goods, it is necessary to increase production volumes and reduce costs in order to maintain a stable economic situation. This situation leads to a significant deterioration in the quality of life: the labor load increases significantly, and production costs are reduced by companies reducing the number of employees and reviewing social policies. Thus, innovative solutions could be an excellent way out not only at the micro, but also at the macro level, and increase the country's competitiveness. New technologies would allow for an increase in production volumes at the same cost, which could compensate for the global drop in energy prices. Most of the developing countries today choose this path of development, so the term "innovative economy"is increasingly used.

2.1.1. Analysis of the main socio-economic indicators

Let's look at the dynamics of the main financial indicators of the population's well-being in the country and characterize the living standard of the population in Russia by conducting a statistical analysis of the main socio-economic indicators for 2014-2018. Household consumption is a key indicator of the state's well-being. The actual final consumption of households increases. Growth rate in 2017 compared to 2013, is 122.4%. As the data shows, the living wage in Russia is growing every year. Its average growth rate for 2018 is approximately 27% from 2014. Growth rate in 2018 compared to 2017 is only 1.97%. The monthly average per capita income is also steadily increasing in 2018. It reached 33 thousand rubles a month ($425), and its growth rate (from the previous one) was approximately 4%. The Gini index is approximately the same over the entire time period and is equal to 0.41.

According to the classification of the Organization for Economic cooperation and Development (OECD), Russia is classified as a country with a "very high" level of income inequality (Wildnerova, 2019). When studying the standard of living, the parallel dynamics of inflation, unemployment, and consumer expectations indices should be taken into account against the background of indicators of per capita income and the subsistence minimum.The consistent fight against inflation has brought positive results. Over the past 5 years, the rate of inflation has fluctuated between 2.5 and 5 % . The unemployment rate in recent years has also been declining in 2018, the figure was 4.9%. The peak of the fight against unemployment in Russia is in 2009. During this period, the government organized public works for unemployed citizens, and employment services began to issue loans for starting a business. Also in 2009, the organization of retraining courses for employees was introduced (Federal State Statistic Service, 2019). The living standard is characterized not only by financial indicators, but also health indicators, for example, are very important. Life expectancy is one of the main indicators of the health system and in the evaluation criteria of the World health organization (World health statistics report, 2020). An important feature of the Russian population: women live on average 10 years longer than men – this is the largest gap among the indicators of developing countries. In developed countries, gender differences in life expectancy are minimal. It is obvious that the indicator of both sexes increased during the period under review: in women, the growth was 5.5 years, in men 8.7 years, in total 7.5 years. The growth rate in Russia is significantly higher than in many other developing countries. However, Russia lags far behind the world leaders, for example, in some countries the total life expectancy reaches 82 years. (Guzairov, Degtyareva, 2015). Data on Russia's position in the global ranking on the Human development Index (HDI) shows that Russia belongs to countries with a high level of human development. The HDI in Russia in 2018 was equal to 0.816. However, the country lags far behind many other countries in the world and ranks 49th in the global ranking. Nowdays the leading countries in terms of HDI are Norway (0.952), Switzerland (0.94), and Australia (0.93) (UNDP report, 2019). Summing up the analysis of the living standard of the population in Russia, we can say that in general, the living standard is growing. However, taking into account global trends and the unstable economic situation caused by the coronavirus pandemic, it is unlikely that the quality of life will significantly improve in the coming years. In order to overcome negative trends, it is particularly important to review measures for economic support in favor of the introduction of innovative technologies.

2.1.2 Analysis of innovative development in Russia

By choosing areas for innovation development, Russia is primarily building up its competencies in industries that already have competitive advantages. Efforts are being made to develop selected promising areas where there is a strong human resource potential and significant demand for innovations from the state. These industries include, for example, petrochemicals and medicine. Domestic spending on research and development (R&D) in the country as a whole is growing steadily at an annual rate of approximately 13%. So, by 2017, they amounted to more than 800 billion rubles, of which 500 billion went to the category of "development", and the remaining costs were almost equally distributed between the categories of "basic research" and “applied research” (Degtyareva, Sultanov, 2018). Achievements in each of the above areas are innovative products. The dynamics of costs in each of the categories are also continuously increasing, which means increased investment in innovative development. If we consider investments in R & d by the purpose of costs, we can note that, regardless of the year, most of the costs always fall on the payment of employees and the purchase of high-tech equipment, which, in turn, affects the number of people employed in the innovation sector. But if we use data on the wages of people employed by R & d in the world, Russia will again lag far behind the leading countries (the US – $ 50,000, Switzerland – $ 46,000 and the UK – $

40,000 per year (Vasiltsov, Bagautdinova, 2018). According to the Federal state statistics service for 2018, the share of organizations engaged in innovation activities in the total number (innovation activity) was about 9.9%. The volume of advanced manufacturing technologies developed in Russia has been increasing in comparison with previous years, with an average growth rate of approximately 14% per year (Federal State Statistic Service, 2019). When analyzing the main indicators of innovation activity in Russia, it is necessary to pay attention to the world assessment of the "resulting" indicators and compare the values of the global innovation index (GII). In the global innovation development rating, Russia is ranked 46th in 2019 (Global Innovation Index (GII) score 39.32) out of 129 countries. The countries closest to the Russian Federation in terms of GII are Montenegro (GII-37.7),Ukraine (GII-37.4); Poland (GII-41.3) and Lithuania (GII-41.5) are slightly ahead. The lag behind Switzerland (GII-67.2), Sweden (GII-63.7) and the United States (GII-61.7) is still critical and the economic crisis only worsens the situation (Cornell University, INSEAD, and WIPO, 2019). So, we can note that the level of innovative development in Russia is quite low, it is significantly lower than the leading developed countries, and it does not even occupy the highest positions among developing countries. Analyzing the dynamics of the main indicators of innovation activity in the country, it is clear that in recent years there has been a decline, which allows us to make only a pessimistic forecast of further development of the innovation sphere in Russia. In addition, given the " raw " path of development, the economic crisis only worsens the situation, forming a vicious circle: falling oil prices leads to a decrease in the state's disposable budget, which, in turn, makes the cost of innovation far from paramount, and the lack of innovative solutions encourages extensive growth in energy production, which further reduces their prices (Degtyareva, Shalina, 2016). In addition, given the crisis caused by the pandemic, it only complicates the economic situation: the fall in oil prices leads to a decrease in the state's disposable budget. Together, the result of such a chain may be a decrease in the living standard of the population in the country and a slowdown in the further development of the innovation sphere in Russia.

3. THE IMPACT OF INNOVATIONS ON THE LIVING STANDARD OF THE RUSSIAN POPULATION. REGRESSION MODEL

To identify the relationship between the human development Index and indicators that characterize innovation activity in the country, a regression analysis was conducted.

1) Found paired correlation coefficients for all factors using the formula:

$$r_{xixj} = \frac{\sum x_i x_j - \sum x_i \sum x_j}{\sqrt{(\sum x_i^2 - \frac{(\sum x_i)^2}{n}) \cdot (\sum x_j^2 - \frac{(\sum x_j)^2}{n})}}$$

Table following on the next page

Year	HDI (y)	Internal research and development costs, in constant prices (billion rubles), X1	Number of employees engaged in research and development, thousand people.,X2	Number of advanced manufacturing technologies developed, X3	Researchers with academic degrees, people, X4
2008	0,825	126,80	1061,00	650	116465
2009	0,84	140,10	887,70	688	105911
2010	0,843	132,20	813,20	637	99428
2011	0,853	133,00	736,50	864	105114
2012	0,865	139,80	726,30	1323	109330
2013	0,871	142,10	727,00	1429	108248
2014	0,874	149,40	732,30	1409	109598
2015	0,875	149,30	738,90	1398	111533
2016	0.881	148,80	722,30	1534	108388
2017	0,881	152,70	707,90	1402	103327

Table 1: Source data
(Source: The Federal state statistics service)

	HDI (y)	Internal research and development costs, in constant prices (billion rubles), X1	Number of employees engaged in research and development, thousand people, X2	Number of advanced manufacturing technologies developed, X3	Researchers with academic degrees, people, X4
HDI (y)	1				
Internal research and development costs, in constant prices (billion rubles), X1	0,902212315	1			
Number of employees engaged in research and development, thousand people.,X2	-0,880415554	-0,697713092	1		
Number of advanced manufacturing technologies developed, X3	0,952676572	0,843780946	-0,751713768	1	
Researchers with academic degrees, people, X4	-0,112224925	-0,079077004	0,431629606	0,157757544	1

Table 2: Matrix of paired correlation coefficients
(Source: Compiled by the authors)

The coefficients of paired and partial correlations indicate a strong influence of x1 and x2 and X3 on y. The relationship between X4 and Y is weak in reverse.

2) Built a linear multiple regression equation:

	Coefficients	Standard error	t-statistics	- Value	Lower 95%	upper 95%
Y-intersection	0,826363	0,040721	20,2935	5,37E-06	0,721687	0,931038
Internal research and development costs, in constant prices (billion rubles), X1	0,000501	0,000201	2,49446	0,054861	-1,5E-05	0,001018
Number of employees engaged in research and development, thousand people, X2	-0,880415554	2,19E-05	-1,84438	0,124445	-9,7E-05	1,59E-05
Number of advanced manufacturing technologies developed, X3	0,952676572	8,17E-06	3,854364	0,011948	1,05E-05	5,25E-05
Researchers with academic degrees, people, X4	-0,112224925	3,75E-07	-1,00062	0,362946	-1,3E-06	5,88E-07

Table 3: Multiple regression Results
(Source: Compiled by the authors)

The regression equation has the form: Y = 0,8263 + 0,000501X1 – 0,00004X2+ 0,000031X3-0,000004X4.

It shows that with an increase x_1 (with constant x_2, x_3, x_4) of 1 unit, the HDI Y will increase by an average of 0.000501 units.

3) Evaluated the statistical significance of regression coefficients using the t-test:
   - The regression coefficient a is significant, with a probability of 95%, because the;
   - Trc < tcalc, the table values 2.28 <20.2935;
   - The regression coefficient b1 is significant, Trc < tcalc, 2,28<2,49;
   - The regression coefficient b2 is not significant, Trc > tcalc, 2,28>-1,84;
   - The regression coefficient b3 is significant, Trc < tcalc, 2,28<3,85;
   - The regression coefficient b4 is not significant, Trc > tcalc, 2,28>-1,00.

The multiple correlation coefficient is 0.9956. The coefficient of determination is equal to 0.99, which indicates that the change in the effective attribute Y by 99% is due to a change in factor characteristics.

Table following on the next page

Regression statistics	
Multiple R	0,9956155
R-square	0,9912503
Normalized R-square	0,9842505
Standard error	0,0024412
Observations	10

Table 4: Regression statistics
(Source: Compiled by the authors)

4) The connection between the studied indicators is significant, which can be stated on the basis of the F-criterion: since Ffact > Ftable, 141,61 > 4,53, hen the hypothesis about the random nature of the detected dependence is rejected and the regression equation is significant at the level of α=0,05, i.e. with a probability of 95%:

Analysis of variance					
	df	*SS*	*MS*	*F*	*Significance F*
Regression	4	0,003376	0,000844	141,6121	2,49E-0,5
Remains	5	2,98E-0,5	5,96E-0,6		
Subtotal	9	0,003406			

Table 5: Analysis of Variance
(Source: Compiled by the authors)

5) Made a model prediction:

Observation	The predicted HDI (y)	Remains
1	0,823839	0,001161
2	0,8426634	-0,002663
3	0,8425395	0,000461
4	0,851054	0,001946
5	0,8677428	-0,002743
6	0,8726098	-0,00161
7	0,8749193	-0,000919
8	0,8735306	0,001469
9	0,8794111	0,001589
10	0,8796905	0,001309

Table 6: Predicting the equation model
(Source: Compiled by the authors)

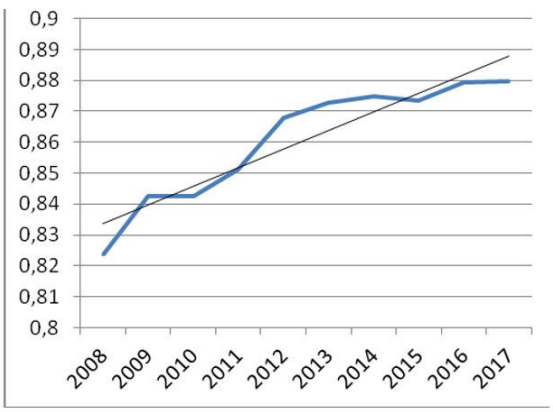

Figure 1: Forecasting the HDI
(Source: Compiled by the authors)

To analyze the connection between innovation activity of countries and the standard of living of the population, it was decided to study the correlation fields of the main indices for 144 countries in 2019. A scattering diagram was constructed for the Global Innovation Index, which characterizes the level of innovation, and the Human Development Index (HDI), which characterizes the level or quality of life of the population in the country. Both indices are taken from the reports of international organizations for 2019 , and the results are shown in figure 2.

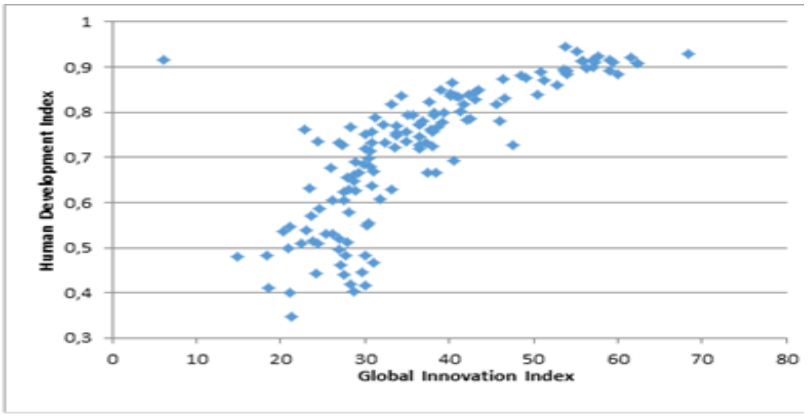

Figure 2: Connection between the Human Development Index and the Global Innovation Index 2019.
(Source: Compiled by the authors)

Figure 1 shows a strong non-linear positive relationship between the indicators. The analysis shows that the link between innovation development and living standards weakens as both indices grow, meaning that the link is less obvious for the most developed countries due to exogenous influences. The Global Competitiveness Index (GCI), widely used in calculations, reflects the global competitiveness of each country. This index is formed from more than 60 indicators divided into 12 groups, one of which is innovation. If you create a similar correlation field for GCI and the Human Development Index, you will see a similar close relationship between the two indexes. The introduction of innovations has a direct impact on the standard of living due to the high correlation of various innovation indices with the main global indicator of living standards. Thus, we can conclude that the resulting model, which establishes the relationship between innovative development and the standard of living, adequately reflects the reality and can be used for further forecasting the welfare of the population. Its fairly high quality makes it possible to reasonably assert that innovations really affect the standard of living of the population. Thus, we can conclude that the resulting model adequately reflects the reality and can be used for further forecasting of the population's well-being. Its fairly high quality makes it possible to reasonably assert that innovations really affect the living standard of the population in Russia. At the same time, it was found that the greatest impact on the level of human development has internal research and development costs and the number of advanced manufacturing technologies developed. In addition, the number of employees engaged in research and development has a strong feedback, which can be explained by the automation of innovation processes.

4. CONCLUSION

Summing up the research, it is worth combining all the results obtained to create a full-fledged image of the relation between innovation and the living standard of the population in Russia. In the course of the work, all the tasks were solved, which contributed to the successful achievement of the main goal.

Thus, the impact of innovation on well-being in Russia has been proven and the impact structure has been considered. The study of the living standards of the population in Russia on the background of growth of per capita income of the population, social support, pension payments, benefits payments and the minimum wage has seen a strong growth in expectations negative change in wellbeing, as well as the decline in the purchasing power of citizens. In addition, the Gini index revealed a very high differentiation of income of the population. Analysis of the health sector in the country showed that life expectancy is growing and approaching the indicators of developed countries, but the lag behind world leaders is still significant. A global comparison revealed a fairly low level of the main mass of indicators of well-being in Russia. Nevertheless, according to the HDI, which is an objective global indicator of living standards, Russia has significantly improved its position compared to 2014 and in 2019 found itself on the border with the category of countries with a "very high" level of human development, taking 46th place in the rating. Analysis of the level of innovation development in the Russian Federation revealed that, before the economic crisis, the main indicators of innovation activity were increasing. But innovative growth is possible with a high degree of development of other indicators, and in the context of Russia's large economic dependence on energy prices, this is becoming increasingly difficult. Nevertheless, a comparative analysis with some developed countries showed that the Russian Federation lagged behind even before the crisis began in terms of innovation. The assessment of Russia's position on the objective Global Innovation Index revealed an increase from 56 to 41 places out of 141 possible by 2019 compared to 2014, but a large difference with the leaders of the rating remains. The analysis of the impact of innovation activity absolute indicators on the living standard was quite successful. while it was found that the greatest impact on the level of human development is exerted by internal research and development costs and the number of developed advanced production technologies, the number of personnel engaged in research and development has a strong feedback, which can be explained by the automation of innovation processes. A regression model was constructed, which confirmed the existence of this impact by its high quality, as a result of which the significance of the positive impact of each of the created indices was revealed. This made it possible to answer the main question of the work, the purpose of the study was achieved. In the context of falling prices for the main exported goods, Russia needs to increase production or reduce fixed costs in order to maintain the same economic situation. This situation leads to a significant deterioration in the quality of life of people, as the labor load increases significantly, and production costs are reduced by companies reducing the number of employees and reviewing social policies. Thus, innovative solutions could be an excellent way out not only at the micro, but also at the macro level, and increase the country's competitiveness.

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APPLICATION OF SQDCME OPERATIONAL MANAGEMENT SYSTEM IN EDUCATIONAL ORGANIZATIONS

Irina Chistnikova
Belgorod national research university, Russia
chistnikova@bsu.edu.ru

Yana Mochalova
Belgorod national research university, Russia
leschinskaya@bsu.edu.ru

Svetlana Ivashchenko
Belgorod national research university, Russia
ivashchenko@bsu.edu.ru

Kerimova Tahira
Azerbaijan State University of Economics, Azerbaijan
tago61@mail.ru

Dilavarov Farid
Azerbaijan State University of Economics, Azerbaijan
farid 90.08@mail.ru

ABSTRACT

The article is devoted to the improvement of educational system management processes and design of the educational process through the use of Lean technologies. Lean technologies as a phenomenon in management are effective in different areas, while their application in educational institutions has features. The SQDCME operational management system is considered as a standard Lean technologies method that allows managers of different levels to show the relationship of their operational activities with production indicators. It is determined that the purpose of the SQDCME operational management system is to constantly ensure the effectiveness of the main processes, reduce losses in processes by improving operations, achieve high quality products and services, and visualize success. The criteria for the effectiveness of different departments of an educational organization with regard to ensuring competitiveness are identified. The system of strategic, tactical and operational indicators of educational organizations is generalized. monitoring of these indicators allows evaluating the degree of achievement of goals. The process of coordinating goals within the organization between management and employees has been studied. We propose a management scheme based on a balanced system of strategic, tactical and operational indicators based on several key areas of activity of an educational organization. The content of the SQDCME operational management system, which includes basic parameters that determine the types of responsibility of organizations, is studied. Responsibility to owners for product quality (Q), order execution (D), costs (C). The company is responsible to the public for safety (S) and ecology (E). To exercise responsibility, the company forms a target corporate culture (M). The article offers the author's set of indicators for the SQDCME operational management system, which allows improving the efficiency of management of an educational organization and achieving its development goals.

Keywords: *SQDCME, educational organization, goal management, lean management, lean technologies*

1. INTRODUCTION

The scientific and practical significance of improving management processes and improving the efficiency of educational organizations does not lose its relevance. Improving the processes of managing the educational system and designing the educational process in educational institutions can be achieved through the use of Lean technologies. Using the SQDCME operational management system opens up new growth opportunities for educational organizations. At the same time, an important element of such a management process should be the visualization of targets and key indicators. Despite the widespread use of lean production concepts in many organizations, the methods of using lean tools are not sufficiently developed, and there is a need for their development. The practical application of the SQDCME management approach in educational organizations can significantly increase the effectiveness of organizations without significant costs. At the same time, an important element of SQDCME's operational management system should be the visualization of targets and key indicators. Despite the widespread use of lean manufacturing concepts in many organizations, the methods of using lean tools are not sufficiently developed, and there is a need for their development. It will be appropriate to consider in detail the set of indicators for the SQDCME operational management system, which allows you to improve the effectiveness of management of an educational organization, as well as achieve its development goals.

2. SQDCME OPERATIONAL MANAGEMENT SYSTEM IN EDUCATIONAL ORGANIZATIONS AS A GOAL BASED MANAGEMENT APPROACH

Goal-based management is a popular comprehensive system management tool. The peculiarity of this method is that the Manager creates a set of goals for all employees and divisions of the educational organization. (Chernyakov, 2015, p. 21) the Goals of an educational organization in the management process are areas of performance control (Belov, 2012, p. 2; Kuzmin et al., 2012, p. 12; Semenyuk, 2017, p. 27). The strategic goal of the educational organization is its formation as an international scientific and educational center that provides training of highly professional specialists, promotes the implementation of the intellectual capital of students and teachers; integrating education, basic and applied research. Therefore, according to the goals, a set of indicators (indicators) is defined to measure the achievability of the target. The most successful way to define the goals of a lean organization is to use the SQDCME operational management system (Thakur, 2016, p. 64; Womack et al., 2003):

- S-security (the educational institution is responsible to the society for security),
- Q-quality (responsibility for the quality of services),
- D-order execution (responsibility for order execution),
- C-costs (rational expenses),
- M-corporate culture (formation of a target corporate culture by an educational institution),
- E-ecology (responsibility to society for the environment).

The SQDCME model allows you to show managers at different levels the relationship between their operational activities and the strategic performance indicators of the organization (Melton, 2005. p. 665). For each of these goals, it is advisable to build a system of indicators that can be recorded in development programs, lean projects, and individual employee plans (Mostafa et al., 2013, p. 53). The effectiveness of the program is evaluated by indicators covering scientific, educational, international and social activities, distributed by SQDCME goals, synchronized with indicators of Federal and national projects, and indicators of the effectiveness of evaluating the activities of the rector. Those responsible for tactical indicators monitor the performance of each indicator (Chase et al., 2004). At the same time, these indicators are monitored at various intervals, from monthly to quarterly, depending on the target indicator. The purpose of an operational management system in SQDCME format is to constantly ensure the effectiveness

of the main processes, reduce losses in processes by improving operations, achieve high quality products and services, and visualize success. (Lapaev, 2015, p. 318; Shah et al., 2003, p. 134). Thus, it should be noted that when managing goals in the SQDCME format, organizations do not define individual target areas for themselves, but adapt a single set of goals to their activities as a lean-balanced system that contributes to the maximum rationalization of management. Management by goals in the SQDCME model format allows you to summarize the strategic, tactical and operational indicators of organizations, monitoring which allows you to assess the degree of achievement of goals (Lander et al. 2007, p. 3688.). The advantage of using a single model of SQDCME targets in the company can be called the solution of the issue of inconsistency in goals within the organization between management and employees (Petersen, 2003, p. 32.). To plan, organize, motivate, and control SQDCME goals, you need a set of indicators that will allow you to draw conclusions about the level of achievement of goals.

3. SET OF INDICATORS FOR THE SQDCME OPERATIONAL MANAGEMENT MODEL

Let's consider an approximate set of indicators of an educational organization for operational management in the SQDCME management model. Since the goals of an educational organization in the framework of the s (Safety) direction are to ensure the safety of students and employees, preserve health and avoid accidents in the process of providing educational services, it is proposed to consider the following indicators to measure the achievement of these goals:

1) The Total number of accidents with classification by type that occurred during the provision of educational services, during the organization of cultural and sports events, while living in University dormitories.
2) Accessible environment – the percentage of students with disabilities and people with disabilities who positively assess the level of accessibility of priority facilities and services in an educational institution.
3) Providing students in need with places in University dormitories.
4) Percentage of students, teachers and staff who have been trained in the field of civil defense and protection from emergencies.
5) The Proportion of students who have passed the introductory instruction on civil defense.
6) Percentage of students, faculty, and staff who have studied the program to gain experience in the use of personal protection against hazards arising in emergency situations.
7) Percentage of students, faculty, and staff who have passed the annual medical examination.

The direction indicators Q (Quality) should allow to assess the quality of services and products, educational organization level of satisfaction of students with quality educational services, the level of employee satisfaction with processes of the organization the educational, scientific, and managerial activities. It is therefore proposed to use the following indicators:

1) The proportion of graduates employed within one calendar year following the year of issue, the total number of graduates of educational institutions, enrolled in basic educational programs of higher education.
2) The Number of scientific publications of teachers and scientists of the educational organization in publications with a high rating for the year.
3) The total number of all scientific, methodological and educational publications of teachers in educational institutions year.
4) Indicators of students ' publication activity per year.
5) The Total amount of research and development work performed by employees of the educational organization.

6) The Number of identified nonconformities based on the results of internal and external audits of the quality management system.
7) The Number of identified nonconformities based on the results of internal and external audits of the quality management system.

Within the framework of direction D (Delivery), the goal of the educational organization is the timely and complete execution of customer orders, the development of educational programs and modern training technologies, and the expansion of the material and technical base. To monitor the achievement of these goals, you can use the following indicators:
1) Number of educational programs.
2) The Share of the number of students on the basis of agreements on targeted training in the total number of students.
3) The Total number of foreign students at the University.
4) The Share of the number of students from third-party organizations in the total number of students who have been trained in an educational organization for advanced training and retraining programs.

According to the target direction C (Cost), which is focused on optimizing the expenses of an educational organization and eliminating all types of losses, the following indicators should be analyzed:
1) Material expenses for educational activities.
2) The Share of the University's income from income-generating activities in the income from all sources of financial support for the University's activities.
3) The Ratio of the average salary of employees of an educational organization to the average salary for the economy of the region.
4) The Share of financial resources allocated for the implementation of social programs in an educational organization in the total amount of funds from income-generating activities.
5) The Number of reports generated for internal exchange of information on the educational organization that resources are spent on.
6) The number of working days required to prepare documents in your organization.

To ensure the competitiveness of the educational organization, the indicators of the M direction (Morale) set a goal to form a target corporate culture. Therefore it is suggested to use the following indicators:
1) Percentage of employees involved in continuous improvement of operations.
2) The number of corporate events.
3) Proportion of the number of students involved in student self-government.
4) Number of subscribers in official groups in social networks.
5) Percentage of students involved in extracurricular activities of educational orientation.
6) The Share of lean technologies used in the work processes of employees of an educational organization.

Within the e (Ecology) direction, an educational institution is responsible to society for the quality of its environment, so the following indicators should be considered:
1) The state of the environment in an educational organization (maximum permissible concentrations of pollutants in air, water, food, maximum permissible levels of fields).
2) The proportion of students, staff and faculty involved in environmental actions.
3) The Number of cases of violations of the order recorded in the premises of the educational organization (sanitary condition, Smoking, etc.).

4) The Percentage of volunteers of an educational organization engaged in garbage collection and landscaping.
5) The Percentage of volunteers of an educational organization engaged in garbage collection and landscaping.

In the process of managing in the format of the SQDCME target areas model, you should first set the normative or planned values of key indicators, as well as the frequency of monitoring the actual results achieved. An important step in applying the SQDCME operational management system in educational organizations is to determine the reasons for deviations of actual values of indicators from the planned level. In our opinion, the best way to monitor performance in key areas is to monitor indicators for each SQDCME goal. In this context, monitoring means periodic (for example, daily) monitoring, constant assessment of the parameters of the target direction for the purpose of operational management of its state. Since visual management is considered one of the fundamental principles of lean production, this tool should undoubtedly be applied to management in terms of goals and key areas of ensuring efficiency. Visual control is "a system of visual elements (tableau, diagrams, signs, markings, information on displays) that control people's actions" (Denisova, 2019, p. 73). Visualization in the management process involves a systematic representation of the values of key indicators on the stand in the meeting room, mainly in graphical or tabular form. At the same time, monitoring visualization is of particular importance in management as a means of visual representation of the relationship between the process of activity and the results of work. Visual management in monitoring mode helps the Manager understand the success and problem areas of the organization, provides employees with information for self-assessment of their actions. Visual management of goals within the lean concept involves the following stages of implementation:

- adaptation of SQDCME goals to the types and areas of activity of the organization;
- selecting at least two key indicators for each goal;
- approval of frequency of monitoring of key performance indicators for each goal;
- pinning is responsible for the achievement of key performance indicators for each goal;
- the establishment of regulatory or target values for key indicators.

Managers who use visual operational management in SQDCM format in practice in all divisions of an educational organization, formulate the following positive effects of this tool (Zhemchugov et al., 2014, p. 8; Setina, 2018, p. 150; Kucheryavenko at al., 2019; Lukashevich, 2018, p. 7, Wilson, 2010, p. 153):

- timely informing all participants of the educational process about the results and goals of activities, transparency and efficiency of data;
- monitoring of all stages and parameters of the educational cycle;
- save time on meetings and planning;
- not only tracking results during the work process, but also quality control, compliance with labor protection requirements, service and corporate culture on a daily basis;
- more correct and correct prioritization in the process of activity;
- solving problems of interaction between the services of an educational organization.

Exploring existing approaches to implementing lean technologies through the SQDCME goals management system, it should be noted that the authors ' proposed comprehensive system of indicators provides for its definition, evaluation, visualization, analysis and correction of key indicators. Monitoring the effectiveness of these target values will improve the effectiveness of management of an educational organization, as well as achieve its development goals.

4. CONCLUSION

In modern conditions of increasing competition and scientific and technical development, educational organizations are looking for ways to modernize the management system. In the practice of many educational organizations, the approach based on operational management, which is based on fixing targets in different areas of activity, has become widespread. The effectiveness of the educational organization in managing goals is ensured and controlled by key indicators. Since the tools of lean production are now widely used in the business environment of many countries of the world, the approach to managing goals is also being modified according to the lean ideology. As part of the application of lean production concepts, management is carried out in the following target areas: ensuring the safety of all consumers and employees of the organization (S), achieving high quality products and social and labor relations with the organization's staff (Q), fulfilling customer orders (D), cost control (C), developing corporate culture (M), and compliance with environmental standards (E). The greatest efficiency in managing an educational organization is achieved through a visualization tool that can be used everywhere, including when managing goals in the SQDCME model. As part of the application of lean manufacturing, the goal-based approach to managing an educational organization should be implemented in the SQDCME format. The SQDCME model is considered a standard method of lean technologies that allows managers of different levels to show the relationship between their operating activities and performance indicators.
The author's set of indicators proposed in the article for the SQDCME operational management system will improve the efficiency of educational organization management.

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LABOR MARKET MANAGEMENT MECHANISMS IN GEORGIA ACCORDING TO CURRENT TRENDS

Nino Paresashvili
Ivane Javakhishvili Tbilisi State University,
1, Chavchavadze Ave., 0179, Tbilisi, Georgia
nino.paresashvili@tsu.ge

Rusudan Kinkladze
Georgian Technical University,
77, kostava st. 0175, Tbilisi, Georgia
rusudan1103@yahoo.com

Ketevan Chitaladze
Ivane Javakhishvili Tbilisi State University,
1, Chavchavadze Ave., 0179, Tbilisi, Georgia
ketevan.chitaladze@tsu.ge

Zumrud Nadjafova
Azerbaijan State Economic University (UNEC),
6,Istiglaliyyat str, 1001 Baku, Azerbaijan
zumrud_n@mail.ru

Teona Edzgveradze
Ivane Javakhishvili Tbilisi State University,
1, Chavchavadze Ave., 0179 Tbilisi, Georgia
teoedzgveradze85@gmail.com

ABSTRACT

The paper studies the current situation in terms of unemployment problems in Georgia, its impact on the country's economy and possibilities of management and regulation. The unemployment rate represents one of the indicators used for assessing the economic situation of the country and the standard of living of the population, in particular. Despite urbanization processes in recent years, about half of Georgian population still lives in rural areas and most of them are employed or self-employed in this sector. In the article the above-mentioned issues are discussed based on the statistical analysis which describes the problem in almost every direction. There are revealed the difference between rural and urban unemployment situation, also, you can find the comparison of activeness and passiveness rates among the population in Georgia. It is very interesting the picture of the structure of employed population and the aggregated indicators. What is more, the problem is discussed in gender and age context too which is very tough for such country as Georgia is (Abesadze, N; Paresashvili, N;, 2018). In the end of the article conclusions are made and the recommendations are developed to deliver the effective policies to boost the effectiveness of labor market regulations mechanisms.

Keywords: *unemployment rate, employment rate, self-employed, economic growth rate, state policy*

1. INTRODUCTION

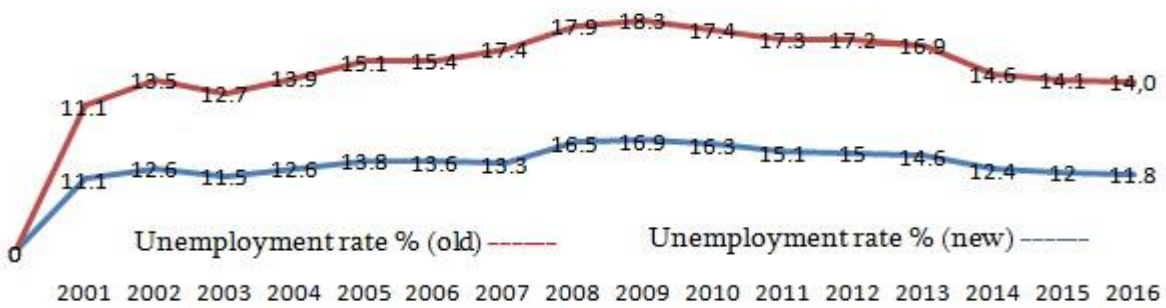
Detailed analysis of unemployment is a prerequisite for continuous monitoring of the unemployment process and allows the implementation of effective measures in the current situation (Paresashvili, Major Mechanisms to Develop the Strategies of the labour Market in

Georgia, 2015). In statistical and social studies unemployment is presented as Georgia's socio-economic problem and represents one of the most pressing and important political issues for the country. Systemic reforms in Georgia began in terms of complete economic collapse. After the collapse of the Soviet Union, in fact, the economy of the newly formed country was paralyzed as it was left without partners and key markets. In addition, financial, resource and social crises deepened and ethnic conflicts escalated one after another. Under such conditions, the country's labor remained idle and they had no perspective. Instead of active involvement of working-age population in the reproduction process and the restoration of the country, they turned out to belong to the category of socially vulnerable groups (Kistauri & Damenia, 2018). The efficiency of the labor market management also depends on the degree of outflow of the potential qualified labor from the country. The only way to maintain human capital is increasing the access to education and providing high-quality service meeting the international standards. (Mikiashvili, Some issues of efficient management of the higher education system in small economies, 2017)

2. THEORETICAL BASES

The study in the article is conducted based on the appropriate bibliographic research. The scientific papers by Georgian and foreign scientists, analytical reports, publications and ILO research materials on similar issues are studied. Also, there are used the official documents and reports regarding the topic of the article. The main aim of the article is to investigate the most acute problems in the labor market of the country and outline the most effective management mechanisms in order to solve them. Unemployment reporting methodology has been improving in Georgia over the years. Currently, the situation in the country is studied by the National Statistics Office of Georgia (Geostat) through an integrated survey of households and the workforce, who implies studying the households selected on a quarterly basis and generalization of the obtained results to the whole population. Production of statistics by Geostat is based on the methodology of International Labor Organization (ILO). A number of important changes have been implemented by the Geostat since 2017. In particular, the number of the total population has been specified, which implies re-calculation of data based on the results of the 2014 Census; the sampling size increased, which implies studying 6 thousand households on a quarterly basis instead of 3400 households; workforce was surveyed, which implies improvement of data on workforce and adding a new questionnaire; and, finally, the sampling design was improved, which implies surveying the same household in the same quarter of the following year. Due to the above-mentioned changes implemented by Geostat, statistical data on employment and unemployment is relatively accurate. Re-calculation of the data based on the results of the Census in 2017 showed that the unemployment rate is higher than reflected in the statistical data provided until 2017 (see Figure 1).

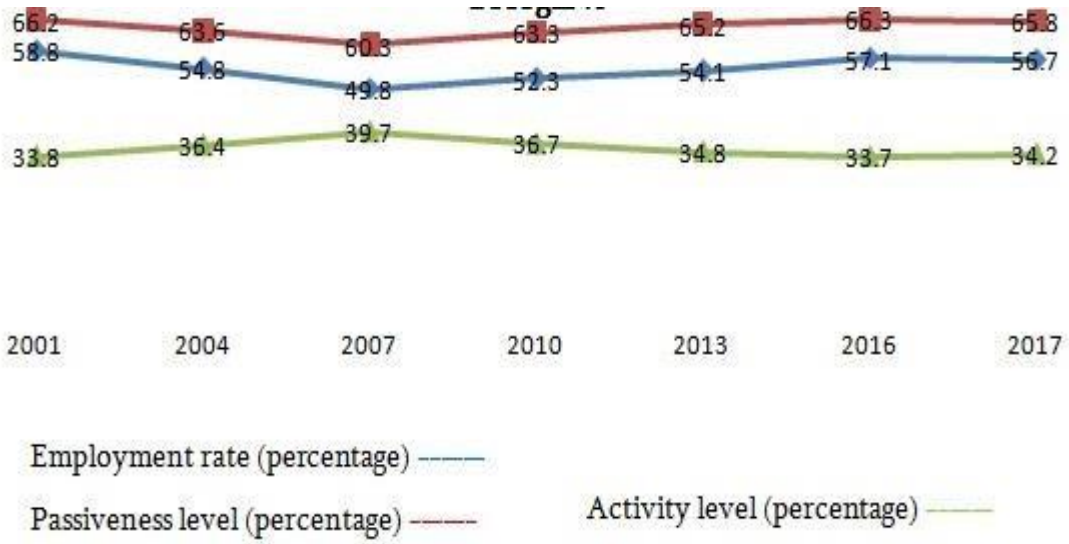
Figure 1: Unemployment rate in Georgia in 2001-2016



Source: The National Statistics Office of Georgia, Employment and Unemployment in Georgia, 2017

As the figure shows, unemployment rate is relatively high in 2007-2012 and on average amounts to 17.6%. Unemployment increased until 2009 and in this year it reached the highest level at 18.3%, while in 2010 it dropped by 0.9% to 17.4%. Since that year, unemployment has been falling by 0.2% per year on average; however, in 2014 it suddenly declined by 2.3%. According to the integrated household survey, unemployment rate amounted to 13.9% in 2017, which, obviously indicates a negative trend. In addition, in our calculation, the difference between the unemployment rates calculated based on the old and new methodologies amounted to 1.97% on average. Although a number of changes have been implemented by Geostat, the statistics provided do not reflect the real situation of unemployment and employment in the country. In particular, the decline in the total population resulted in the reduction of able-bodied and economically active population (workforce). Georgia's population has declined in recent years. The number of the country's population amounted to 4037.5 thousand in 2001 compared to 3729.6 thousand in 2017 (reduced by 178.9 thousand). In the same period, both the able-bodied population and the workforce reduced. However, the tendency of reduction of the workforce is greater than that of the working population - with an average of 1.09% and 0.95%, respectively. In 2017, the economically active population made up 65.8% of the working age population. Both the activity level of the population and the employment rate decreased by 0.5 and 0.4 percentage points respectively compared to 2016. In 2001-2017, employment rate decreased by 0.46 percentage points on average, while the activity level declined by 0.07 percentage points. The level of passiveness is quite high, amounting to 35.6% over this period. By 2017 it increased by 0.5 percentage points compared to 2001 (see Figure 2). It should be also noted that despite the decrease in the number of population aged 15 and over in Georgia, the number of out-of-work population is still very high, indicating that the economy and social sector of the country is underdeveloped and there is quite much unused labor resource.

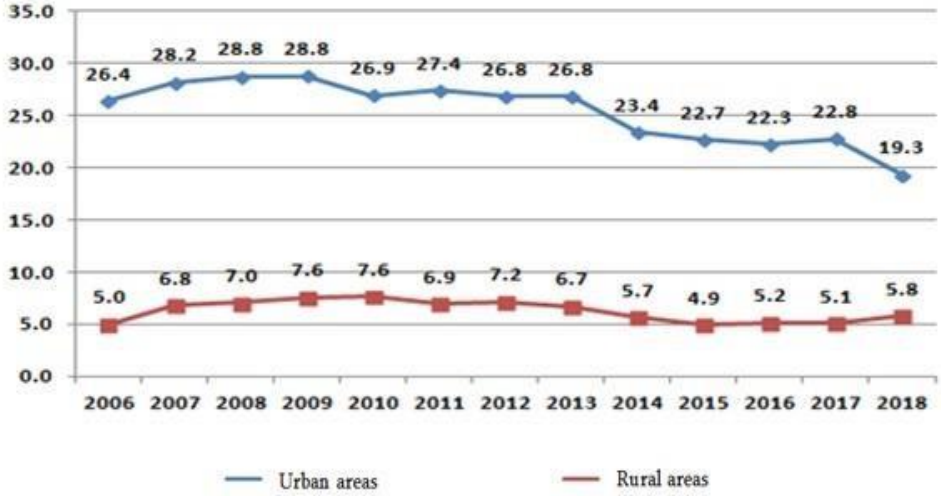
Figure 2: Employment rate, activity and passiveness level of the population in Georgia in 2001-2017



Source: The National Statistics Office of Georgia

Unemployment rates in urban and rural areas significantly differ. The employment rate in urban settlements decreased by 1.5 percentage points compared to the previous year, while in rural places this indicator increased by 0.8 percentage points. Similarly, the level of activity in urban settlements decreased by 1.6 percentage points compared to the previous year, while in rural areas it increased by 0.8 percentage points (see Figure 3).

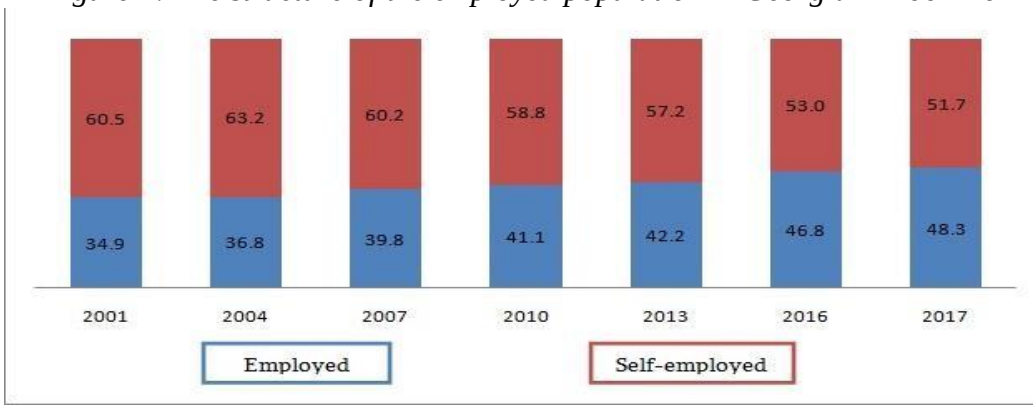
Figure 3: Unemployment rate by urban and rural areas 2006-2018 (according to ILO criteria)



Source: The National Statistics Office of Georgia

The causes of population decline may be connected with migration and the reduction of the share of workforce in able-bodied population may be connected with the existence of so called "hopeless workforce" (able-bodied population dropped out of the workforce due to searching for a job unsuccessfully for a long period of time). The latter is potential workforce and the fact that during the survey conducted by Geostat they had not been searching for a job for the past four weeks does not mean that they do not wish to have a job. This means that the people who are ready to work are not considered as job seekers (labor force) because of the existing methodology for producing statistics. The second reason for the discrepancy between the results of public opinion polls and the data provided Geostat may be incomplete employment. Incomplete employment involves a case where during the survey conducted, a person might had worked for at least one hour in the past week and received some income for that; however, this is not permanent and sufficient. According to the methodology of production of labor statistics, such a person is considered as employed. Generally, they are seasonally employed. In addition, traditionally, the majority of employees are self-employed, although in the last four years a weak, but still declining trend has been observed. Over half of the total employed population is self-employed, whose job is related to agriculture (family farming), amounting to 51.7% in 2017 (see Figure 4), which is 1.3 percentage points lower compared to the previous year.

Figure 4: The structure of the employed population in Georgia in 2001-2017



Source: The National Statistics Office of Georgia

The statistics of incomplete employment and hidden unemployment are not produced, which does not allow providing a comprehensive description of the situation in this regard. Today's official statistics show an incomplete picture of unemployment and employment on the one hand, and, on the other hand, due to the lack of relevant information, it is a hindering factor for the implementation of an effective state policy. For obtaining a real picture of unemployment and employment in the country, it is important to introduce the standards used for studying the workforce in the European Union, as these standards include studying incomplete employment and hidden unemployment, as well as the causes of able-bodied population dropping out of workforce.

3. RESULTS

According to the data provided by the International Labor Organization (ILO), in low- to middle-income countries of Europe and Asia, the number of self-employed people accounted for 27.1% of the total employment and for 18.8% in high-income countries of the same region. As for the EU countries, the self-employment rate here is 15.9%. (Kistauri & Damenia, 2018) In the developed countries, self-employment is not considered as a low-paid and non-prestigious job. Self-employed people may represent sole proprietors, consultants, programmers, architects and others. Even though considered as self-employed, representatives of these professions may receive substantially higher salaries. (Tsiklashvili, 2017) However, the deregulation of the labor market and the structural change of labor organizations have caused some transformation even in developed countries. In particular, currently, not only highly paid financial consultants and programmers are considered as self-employed, but cleaners, taxi drivers, car washers and others can be included in self-employed category. These jobs are mainly occupied by migrants in developed countries because they are low paid and not very prestigious as well. The situation is much worse in Georgia. In the data provided by Geostat, people who own at least 1 hectare of agricultural land are considered self-employed, regardless whether this "property" is sufficient for living or not. For the Geostat, the amount of income (whether it is 50 or 100 GEL) does not matter, a person is still considered to be employed or, more specifically, to be self-employed. In addition, other approaches to the registration methods for self-employed also arise some questions. In this regard, first of all, it should be determined whether the income from such self-employment is sufficient for a decent living. The number of self-employed (employed in agriculture, retail, etc.) prevails in Georgia. About 1.7 million people are employed in total in Georgia. About a million (60%) of them are self-employed. The majority of such population does not consider themselves to be employed and in sociological surveys they respond that they are unemployed. 692 thousand people are hired to work and therefore, they have no perception that they are unemployed. About 150 thousand of them are employed in the public sector. One thing is that according to the official methodology 1.7 million people are considered to be employed and 246 thousand to be unemployed, but if we look at the number of job seekers in the domestic labor market, not only 246 thousand people are looking for a job, but most of the self-employed are also trying to earn a living in different ways before they find a job. The vast majority of the people employed in agriculture are not quite well-off. This is evidenced by the fact that according to Geostat, income of the people employed in agriculture is the lowest. In addition, it is the least productive sector and accounts for only 8-9% of the country's total economy. Here, it should be taken into consideration as well that about 50% of the employed are those self-employed in agriculture. To sum up, it turns out that official statistics on employment are far from the reality as the state might consider a person to be employed because of having just one cow. And such cases are no exception; about a third of the population is nominally employed. This is evidenced by a study conducted by GFSIS, the figure from that study is presented below (see Figure 5).

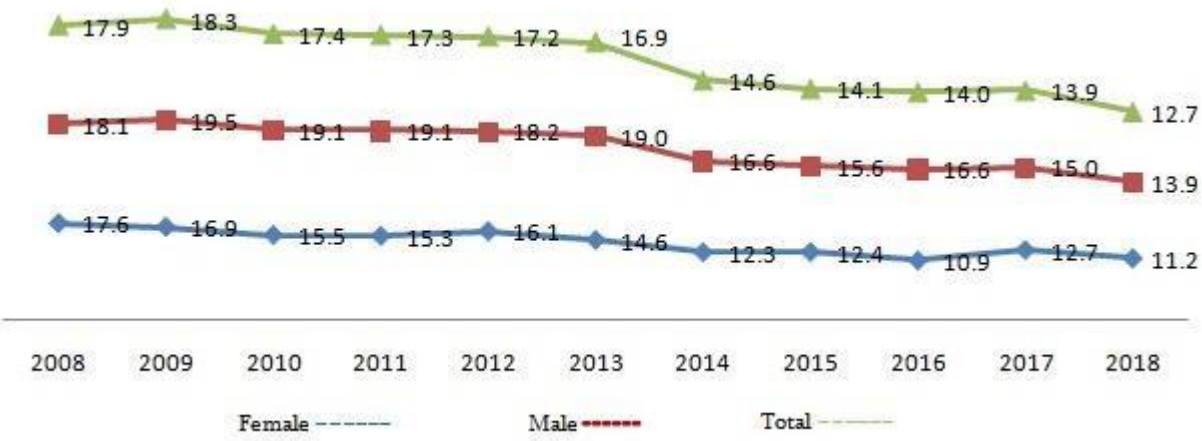
It shows aggregated unemployment data, which includes the data on incomplete employment and hidden unemployment.

Figure 5: Unemployment rate (%) by urban and rural areas

Source: The study on "Structure of Unemployment and Structural Unemployment" https://www.gfsis.org/files/library/pdf/Georgian-2456.pdf

As the graph shows, aggregate unemployment rates calculated by urban and rural areas do not differ so substantially from each other, as in case of the unemployment rates calculated by the ILO criteria (see Figure. 3). This is mainly due to the fact that a large part of the people self-employed in agriculture belongs to the category of incomplete employment or hidden unemployment. These indicators (aggregated and by ILO criteria) show a decreasing trend, but in the case of aggregates, the trend of decline is more linear than in case of ILO criteria. It is very important to discuss unemployment in terms of sex and age. In 2017, the respective figure for men was 2.3 percentage points higher than for women. In addition, in 2017 for women this figure increased by 1.8 percentage points compared to 2016, while it decreased by 1.6 percentage points for men (see figure 6). However, compared with the overall unemployment rate, it is 1.1% higher for women and 1.2% lower for men.

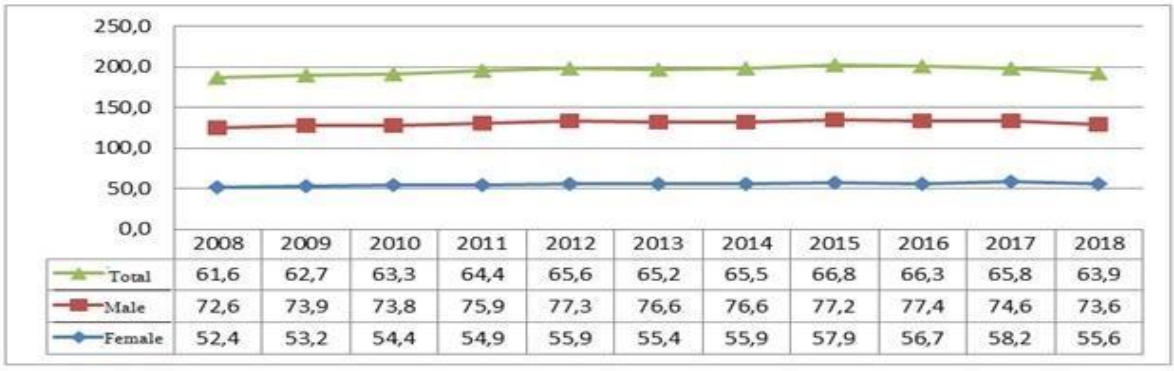
Figure 6: Unemployment rate by gender compared to general unemployment in 2008-2018



Source: The National Statistics Office of Georgia

An interesting picture is provided when discussing activity levels by gender. Activity levels are relatively high in men. In 2017, the activity level was 58.2 percent for women and 74.6 percent for men. In 2017, the level of activity in women increased by 1.5 percentage points compared to 2016, and it decreased by 2.8 percentage points among men, while total level of activity reaches 65.8% and it is decreased by 0.5 percentage points. In 2018 these indicators decreased by 1.6 points for women, 0.6 points for men and by 1.9 points in general (see Figure 7).

Figure 7: Activity level by gender in 2008-2017

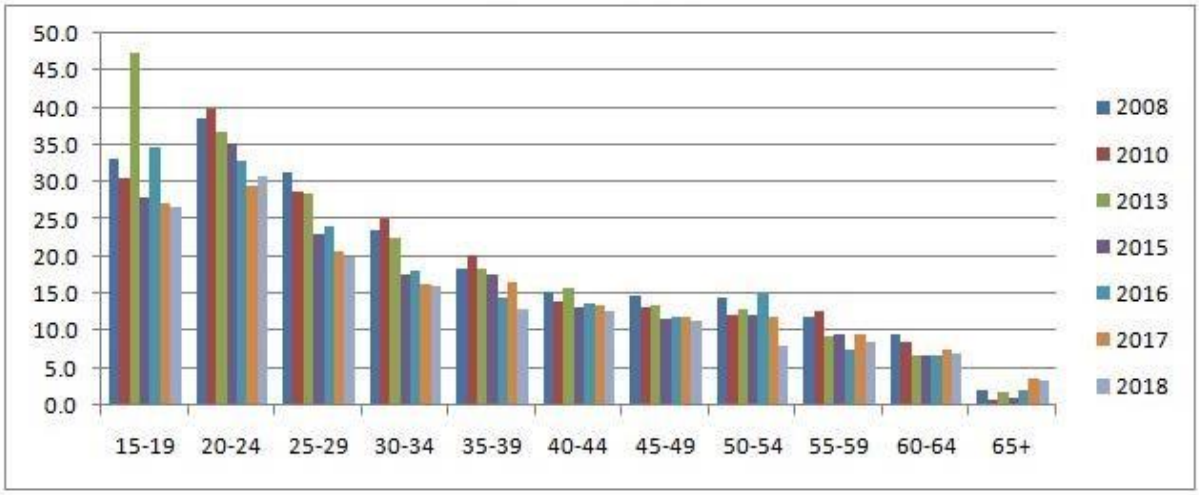


	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Total	61,6	62,7	63,3	64,4	65,6	65,2	65,5	66,8	66,3	65,8	63,9
Male	72,6	73,9	73,8	75,9	77,3	76,6	76,6	77,2	77,4	74,6	73,6
Female	52,4	53,2	54,4	54,9	55,9	55,4	55,9	57,9	56,7	58,2	55,6

Source: The National Statistics Office of Georgia

A very interesting picture of the structure of unemployment is seen when looking at unemployment in terms of age. The most important problem in this regard is the high level of youth unemployment, especially in the age groups between 15-19 and 20-24 (see Figure 8).

Figure 8: Unemployment by age (%) in 2008-2017



Source: The National Statistics Office of Georgia

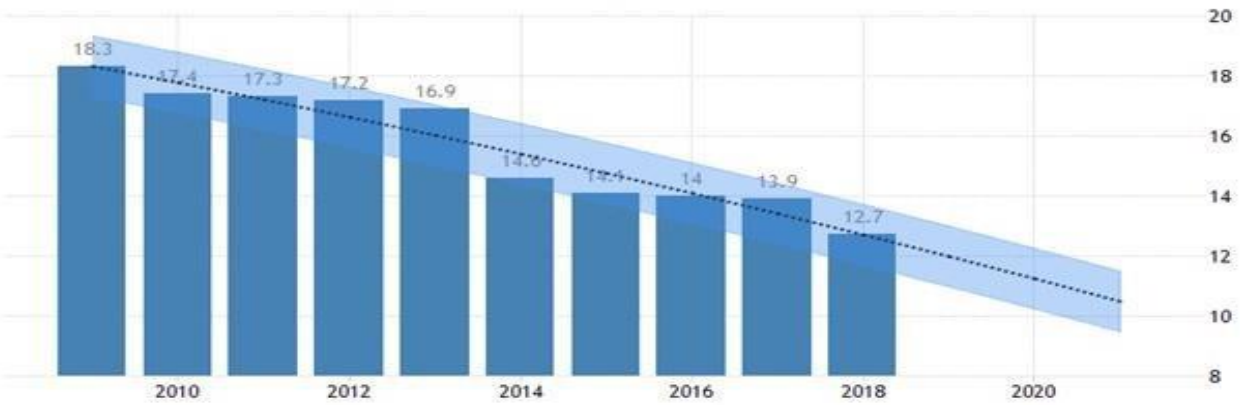
The analysis of the findings of the study in terms of age groups shows that the highest unemployment rate in 2017 is still observed in the age group of 20-24 (29.6%), which decreased by 3.2 percentage points compared to the respective figure of 2016. Unemployment is traditionally the lowest among the age group 65+, which is mainly caused by a relatively high rate of inactivity in this age group. In terms of age, unemployment is the highest in the age group of 20-24. In 2008-2017, the average unemployment rate amounted to 35.4% in this category. Despite the decreasing trend observed since 2012, it is still the high and made up 29.6% in 2017. In addition, high unemployment rate is observed in the age group of 25-29, with the unemployment rate averaging 27.2%, the rate has been declining since 2010. It is also worth noting that in the EU member states, as of 2017 the average unemployment rate was 16.8% for the age group of 15-25 and 6.7% for the people aged 25 years old and over. In Georgia as of 2017 the average unemployment rate was about 28.4% for the age group of 15-24 and 12.4% for those aged 25 years old and over, including the lowest unemployment rate (3.6%) in the age group 65 years old and over. In addition, the unemployment rate in the age group of 40-44 is totally lower compared to average unemployment rate and amounts to 13.5%. As the age increases, the unemployment rate generally declines.

This indicates that the young people belonging to the age group of 15-29 are relatively active in looking for a job (according to the calculation method used); however, a significant part of them is still unemployed. It would be fair to say that as they get older most of them eventually give up looking for a job due to a number of failures and disappointments and drop out of workforce.

4. DISCUSSION

The development of organizational and economic activities (with the joint efforts by the relevant agencies) is particularly important for solving the unemployment problem of young specialists. Such activities are guaranteed by professional adaptation and employment of youth in every type of entrepreneurship. (Kinkladze, 2011) Higher education institutions in our country should ensure preparation of future specialists according to the requirements of the labor market. This involves selection using strict criteria, as well as the development, preparation and employment of students in a single cycle. In addition, monitoring the employment rate of the graduates is essential. (Tugushi & Paresashvili, 2007) The operation of the educational system must rely on the state view and strategic goals what will promote the further development of the country. The human capital suitable for the modern global market can be formed and maintained only by using a systematic approach. In terms of basic conditions, a developing economy must reform the educational sector and develop the infrastructure relevant to modern requirements. The need for perfecting the field of education in Georgia is clear today. The planned short-term changes must make the education a dominating sector of the economy of Georgia in a mid-term period . (Mikiashvili, Education, human capital and competitiveness of small open economy (case of Georgia), 2020). It is also worth noting that small business represents a good source for reducing unemployment. State support for small business development in Georgia is essential. In almost all foreign countries, there is some infrastructure of state support for small business, while in Georgia there is almost no state regulation for small business and no appropriate infrastructure (Abesadze & Kakulia, 2008). However, the quality of vocational education should be taken into account as well. For overcoming the problem of unemployment and promoting effective employment, it is advisable to address the following key issues within the active employment policy: fundamental transformation of the Georgian education system and the vocational education system, in particular, to meet modern, knowledge-based principles that ensure training of the labor market demand-oriented workforce and therefore, elimination of the imbalance in this regard (Tsartsidze & Latsabidze, 2017).

Figure 9: Aggregate unemployment rate in Georgia (the trend is shown by dashed line) in 2009-2018



Source: https://tradingeconomics.com

The trend of aggregate unemployment rate in Georgia (Figure 10) and the forecasted figure were determined and calculated by using the extrapolation method. As the analysis showed, unemployment was on a downward trend in 2009-2018 and it is expected to decline in the future as Well.

5. CONCLUSIONS

To sum up the information from the text, it is visible that unemployment is still quite a big challenge for Georgia. There is a big disbalance between demand and supply on the labour market. The legislation and migration policy need improvement. The unqualified workforce is the problem to be solved. (Paresashvili & Maisuradze, Unemployment as the Main Challenge in Georgia., 2018) According to the results of the recent public opinion poll conducted in Georgia, unemployment is the most acute problem among common national issues. Lack of jobs is a more important issue for the population than territorial integrity, protection of human rights, accessibility to medical care, education, etc. On this background, it turns out that a great part of the population considers themselves to be unemployed, while official statistics provide different figures. As there are no unemployment benefits in Georgia, unemployment statistics are only meant to analyze the economic situation. In our opinion, in order to increase the competitiveness of young specialists in the labor market, it is important to organize professional training, retraining and professional development courses for young people. Moreover, in order to increase the productivity of human resaurces, certain processes are needed. One of the first steps is to create an effective team within the company, all of which members feel that they are an essential part of the company's core mission or strategy and that it is given a significant place and responsibility for the successful implementation of the team process. (Paresashvili & Edzgveradze, Job Satisfaction In The Context Of Organizational Behavior, 2019). It is also important to make some investments in rural areas. Preferential agro-credits also influence the introduction of innovations in Georgia (Kharaishvili, 2018). Investments and cheap agro-credits will help increase employment. Also, the establishment of such a system of employment for the graduates of educational institutions, within the framework of which, in order to better meet the demands of the market, free internships for students will be held at the last stage of education, in different companies and organizations (Paresashvili, N.; Okruashvili, N.;, 2019). Therefore, when developing a labor market strategy, the system of prioritization should be precisely defined, taking into account the vital interests of all members of society. (Paresashvili, Major Mechanisms to Develop the Strategies of the labour Market in Georgia, 2015) It is noteworthy that Georgia has great potential for development in several sectors. Here we consider agriculture, tourism, and think that the development of these sectors in combination with other important areas will significantly overcome the problem of unemployment. (Paresashvili & Chitaladze, Main challenges of tourism development management in Georgia, 2019). The following factors of economic instability are revealed in terms of unemployment: decrease in aggregate demand, savings and investment efficiency, reduction in aggregate supply, decline in production, etc. Unemployment is a heavy burden for the population and leads to economic, psychological and social losses. In addition, from economic perspective, unemployment causes the cost of so called not-used production opportunities. Solving this very pressing problem, which is presented on the agenda of each country, is impossible without statistical registration. To some it is very essential to implement such regulations which will make the management of labor market more effective and at the same time measure the results in order to always have the real picture of current situation and plan the next steps of regulations in an appropriate way.

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NETWORK HUMAN CAPITAL AS A FACTOR OF INTER-REGIONAL INTERACTION IN THE CONTEXT OF DIGITAL TRANSFORMATION: RUSSIAN AND FOREIGN EXPERIENCE

Elena Stryabkova
Belgorod National Research University, Russia
stryabkova@bsu.edu.ru

Leyla Hajiyeva
Azerbaijan State University of Economics (UNEC)
Istiglaliyyet str. 6, Baku, Azerbaijan
Leyla_Hajiyeva@unec.edu.az; hajiyeval@mail.ru

Elnur Aliyev
Azerbaijan State University of Economics (UNEC)
Istiglaliyyet str. 6, Baku, Azerbaijan
Elnur_aliyev855@inbox.ru

Anna Kulik
Belgorod National Research University, Russia
Kulik@bsu.edu.ru

Mikhail Kochergin
Belgorod National Research University, Russia
kochergin1994@yandex.ru

ABSTRACT

Today, the process of digitalization is trying to affect all areas of human activity: people's consciousness is being transformed, as well as the ways of consuming information. In accordance with this, there is a need to transform the system of establishment and development of network human capital in the aspect of "smart" specialization, particularly for the needs of the digital economy. Activation of network human capital can be one of the factors of effective digital transformation of interregional cooperation. The main purpose of this study is to provide theoretical and methodological justification of approaches to the category "network human capital in the digital economy" as a factor of interregional cooperation. The first part describes approaches to the study of network human capital in Russian and foreign literature; the second part describes the main directions and methods of regulating investment in network human capital in Russia and other developed countries. In the final part, new scientific approaches to the study of network human capital as a factor of inter-regional interaction in the conditions of digital transformation and the mechanism of formation of network human capital taking into account the requirements of "smart" specialization are proposed. As the results of the study, we justify the theoretical and methodological approaches to the study of network human capital as an element of regional spatial development and as a "driver" of interregional cooperation considering the requirements of "smart" specialization. We also propose the project for the regional "smart" training center for the digital economy with the aim of improving the region's competitiveness on national and global labor market and of human capital transformation.

Keywords: *investment, network human capital, human resources, personnel development, digital transformation, digital skills, digital technologies, "smart" center, digital economy, interregional cooperation*

1. INTRODUCTION

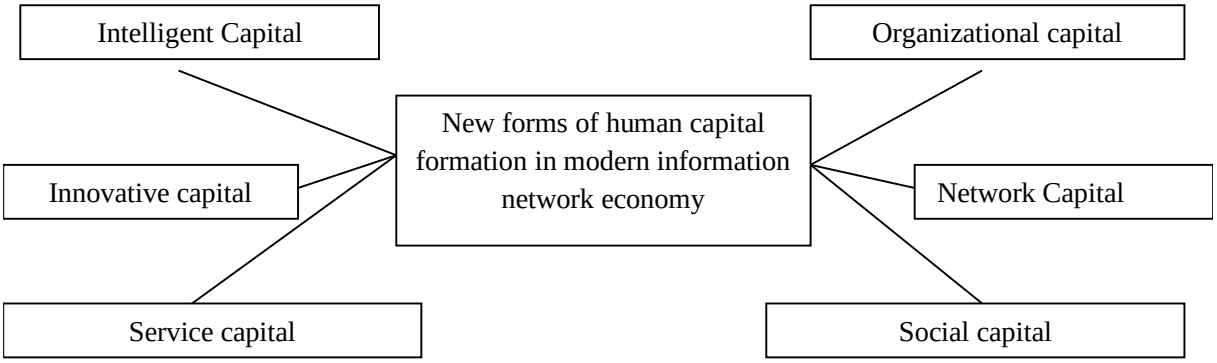
In modern market conditions the main direction of development of world economy is creation of new segments of information-network economy which are connected with digitalization and introduction of artificial intelligence systems on the basis of global neural networks. Based on this, the human capital of highly qualified workers becomes the most important network resource and a factor of high dynamism of the global digital economy and success in conditions of strengthening global innovation hypercompetitiveness. One of the first English-language works on the digital economy was D. Tapscott's 1996 (and reissued in 2015) book The Digital Economy: Promise and Peril in the Age of Networked Intelligence. The author focused on the new opportunities for society to unite knowledge and creativity. He identified the main features of the new economy emerging from the active use of digital technology. Tapscott revealed the process of gradual transition to a new type of organization, and also noted the shortcomings of the digital economy, among which the growing inequality due to unequal access to technology. We also note the publication of B. Van Ark (2016), which points to the fact that the new digital economy has not yet led to a noticeable increase in productivity- it is, according to the author, still in the "installation phase", while productivity effects can only occur when the technology enters the "deployment phase". Among today's English-language works is a book by T. Scholz, published in 2017, titled "Uberworked and Underpaid: How Workers Are Disrupting the Digital Economy," which focuses on the problems of the workforce hired by digital economy giants such as Uber and Amazon. Some authors prefer to focus their works on specific technological solutions that accompany the transition of the economy to a new stage. This may be, for example, the case of blockchain technology (R. K. Nurmukhametov, P. D. Stepanov, T. R. Novikova, 2017) or the construction of the conceptual architecture of the digital industry ecosystem (Yu. M. Akatkin, O. E. Karpov, V. A. Konyavsky, E. D. Yasinovskaya, 2017). Works by Shuyun G., Din V., Lanshina T. (2017) and Smorodinskaya N. V., Katukova D. D. (2017) are devoted to international experience of digital economy management, as well as globalization - a process parallel to digitalization, directly related to the latter. Many authors analyzed the impact of human capital on the economic development of countries Hajiyeva L.A., Teymurova V.S. (2019), M. G. Gulaliyev, R. S. Muradov, L. A. Hajiyeva, H. R. Muradova, K. A. Aghayeva, E. S. Aliyev (2019). Finally, a considerable amount of research papers is devoted to the problems of personnel training in the digital economy, as well as to the characteristics of the labor market in the new era (for example, I.V. Kashinskaya, N.L. Korovkina, G.A. Levochkina (2018)). The impact of digitalization on the university education system is discussed, in particular, by N. V. Shashlo, G. V. Petruk (2017), V. S. Yefimov, A. A. Lapteva. B. (2018), E. V. Bolgova, G. N. Grodskaya (2019).

2. APPROACHES TO RESEARCH ON NETWORKED HUMAN CAPITAL

In the global information economy, traditional human capital is transformed into network human capital (or digital intellectual network capital). Compared to human capital in an industrial and market economy, human capital in a modern information network economy [12] acquires new properties and takes new forms (Figure 1).

Figure following on the next page

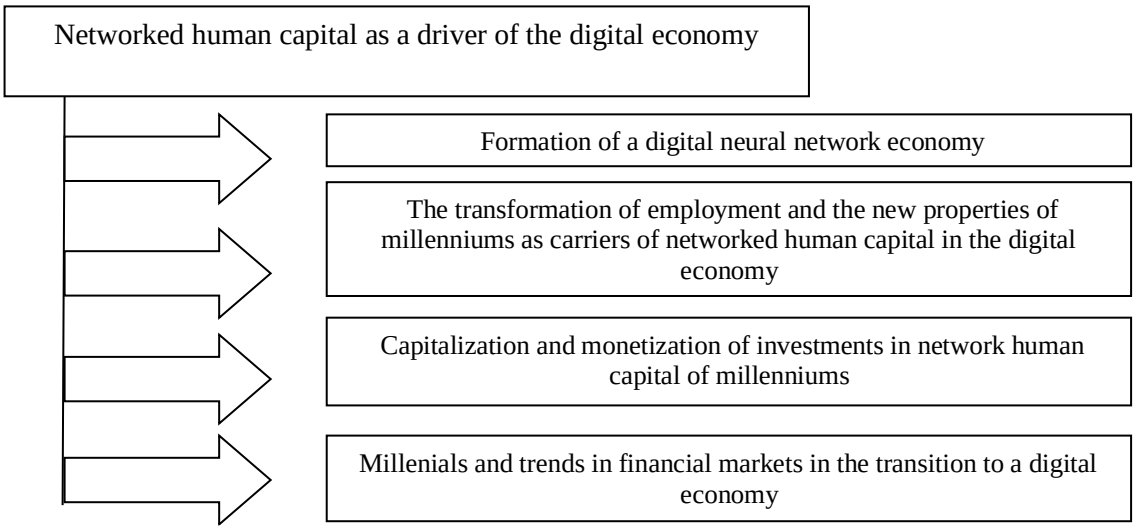
Figure 1: New forms of human capital in modern information network economy [9]



The activation of human network capital can act as one of the factors of effective digital transformation of the economy. In this regard, the issues of network human capital development and investing in it in the digital economy remain relevant. Digital transformation ensures the transition of the economy to a new stage of development. Digital technologies make fundamental changes in economic relations and in institutions of central-periphery inter-regional cooperation. Network human capital can be defined as a set of capitalized distributed network abilities, skills and competencies of managers, highly qualified workers and population. This set can be used for effective inter-regional interaction via the Internet:

- with networked government structures (e-government structures),
- with network business structures (e-business, innovative firms, offshore programming),
- networked scientific and educational communities (network research groups, digital libraries, network universities) and with social networks that are used to obtain various public goods, market benefits and network effects (Figure 2).

Figure 2: Directions for networked human capital as a driver of the digital economy



Today, in the context of the comprehensive development of the Internet and digital technologies, a variety of virtual social networks and online user communities are actively being created and functioning. Let us present these forms in more detail:

- crowdfunding - virtual associations of people to finance common projects, crowdfunding;
- crowd mapping - displaying information on the map by many users;

It should be noted that popular sites for crowdfunding in Russia are http://planeta.ru/, http://boomstarter.ru/. For example, the sites https://www.experiment.com/, www.PetriDish.org, www.iAMscientist.com raise funds for the implementation of initiative research. These resources make it possible to finance promising scientific projects, as well as to attract interest in science and promote the knowledge of advanced scientific research conducted in the world. These sites mainly finance projects related to ecology, biology, medicine and social sphere. Internet funding opportunities for social projects, including education, medicine, art, tourism, are expanding due to crowdfunding, which is an additional source of funding in human capital.

3. RUSSIAN AND FOREIGN EXPERIENCE IN RESEARCHING NETWORK HUMAN CAPITAL

Today, EU countries face a number of challenges in the area of human capital, ranging from a lack of qualified personnel for the knowledge economy to underinvestment in health care. In the 1970s, the hypothesis was advanced that the accumulation of individual benefits from education directly contributes to GDP growth; increases in per capita GDP and education levels go hand in hand. As the role of services in the economy grows (over 70% of GDP in OECD countries), so does the education level of workers. In the current version of the Europe 2020 Strategy, many points are somehow related to human capital (table 1).

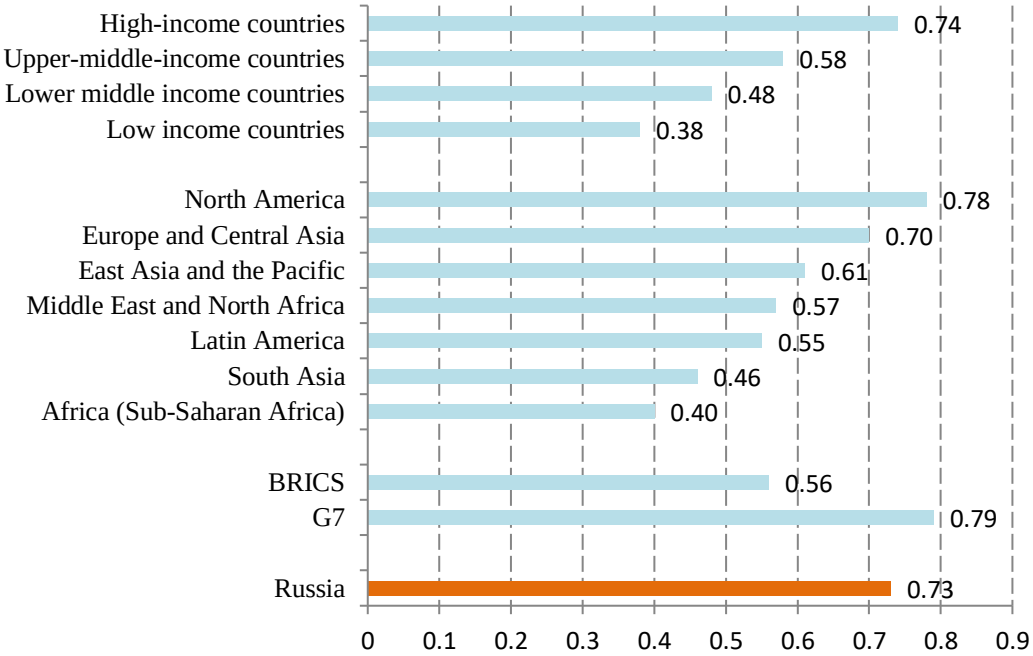
Table 1: Goals of the Europe 2020 Strategy related to the quality of human capital

Reasonable growth (based on knowledge and innovation)	Inclusive growth
Innovation: European Key Initiative an "innovation union" to improve framework conditions and access to R&D funding, innovation to strengthen innovation chains and accelerate investment in the EU	Employment and qualifications: European Key Initiative "An agenda for job and skills creation": modernizing the labour markets through greater labour mobility and skills development that contribute to successful employment
Education European Key Initiative "Youth on the move" to improve the functioning of education systems and increase the international attractiveness of European higher education	Education European Key Initiative "Youth on the move" to improve the functioning of education systems and increase the international attractiveness of European higher education

Global averages show that investing in education generates 5-15% additional income for each year of study (Hartog, 1999). For example, in Belgium, due to the availability of a diploma of tertiary education (as compared to a diploma of secondary education) the salary advantage reaches 30%, and in Hungary - even 117%. From a gender perspective, 25-64 years of age in Spain, Ireland, the Netherlands, the UK and Spain have more wage advantages for women than men (with a tertiary diploma). In other EU countries the trend is different (except Belgium, where gender opportunities are the same). Differences in income according to this principle with equal level of education remain significant and are partly explained by differences in choice of occupation, working hours, part-time employment. The cost of inaction in human capital development is increasing. Without human capital, countries will not be able to achieve sustainable economic growth, nor will they be able to create a pool of workers willing to take on future jobs that require advanced skills, nor will they be able to compete effectively on the global economic scene.

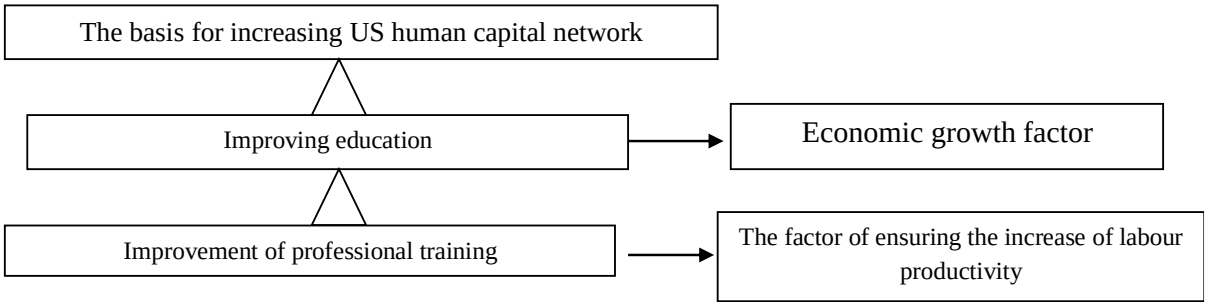
It should be noted that according to the value of the Human Capital Index calculated by the World Bank for 157 countries, Russia ranks 34th in the group of countries with high human capital. According to the World Bank estimates, the productivity of a person born in 2018 in the Russian Federation, upon reaching the age of majority, will amount to 73% of the potential level, which is possible with full education and full health. At the same time, the Russian Federation is slightly above the European and Central Asian region and is also well above the average for the upper-middle-income group (Figure 3). In addition, such institutions as the European Cluster Observatory and the European Cluster Policy Group are actively working to organize interaction between representatives of science, business and government, as well as to develop recommendations for the European Commission on issues of science, technology and industry policy, improving the legal framework, financial support for cooperation projects. In the UK, the National Training Task Force in cooperation with the British Confederation of Industrialists and the British Congress of Trade Unions has developed an international certification standard "Investors in People", which includes ten complex indicators aimed at improving the efficiency of the company through the development of network human capital of personnel [15].

Figure 3: Human Capital Index by Country Group, 2018.



Technoparks and business incubators are an important part of the infrastructural support for cluster development. They are designed to act as catalysts for the creation of innovation clusters through the competent use of human capital networks. Examples can be given of the use of human capital networks in the development of US-Mexican cluster systems in light industry, as well as US-Canadian aerospace clusters. Negotiations are currently under way to develop cross-border intercompany networks within the framework of the Transatlantic Partnership, an emerging integration alliance. At the same time, the higher level of international cooperation of the EU member states shows that the European countries, which maintain a technological gap with the United States, are directing their efforts towards the creation of joint cluster systems to enhance the global competitiveness of their producers. The issue of immigration, especially of relatively highly qualified personnel, becomes particularly relevant for the US economy in the area of human capital (Figure 4).

Figure 4: Basis for increasing network human capital in the USA



Within the framework of the Russian program "Digital Economy" it is planned to form a neural network education system, which will train personnel with network competences and rely on the neurocognitive mechanisms of acquisition of new knowledge, the use of neurocomputer interfaces, elements of virtual and augmented reality, hybrid intelligence [8]. Currently, products and services of the neural network education market are being developed in such segments as distance learning, lifelong learning, mass open online courses, blended learning, innovative models of additional education, and by 2035 - the full use of integrated systems of natural and artificial intelligence [13]. In the digital economy, various networked institutional management structures, including public authorities at the global, federal, regional and local levels, are being formed as part of inter-regional cooperation. The leading place in the structure of institutions of management and regulation of the globalizing digital economy is occupied by electronic network institutions of management, regulation and control, the most important of which is the e-government (e-government), which can be considered as an institutional and organizational form of manifestation and implementation of network management human capital. Today such new forms of education as distance and network education are actively developing. Network universities are being created, which operate on an integrated system (unified Internet platform) of providing distance education services via the Internet and whose participants are the leading universities in Russia and other countries. For example, at Lomonosov Moscow State University, member universities of the Eurasian Association of Universities have adopted and signed a memorandum of understanding on the establishment of a Eurasian Network University (ESU). The objectives of the EUU are to develop the human and intellectual capital of the Eurasian Economic Union, to promote global competitiveness and long-term prosperity of the economies of the EAEC countries. As a whole, Internet technologies, electronic network means of communication allow to pass to a new stage of formation of network human capital and network infrastructure of its effective use, and also development of the distributed cooperation and integration of universities in organizational, educational, methodical and research areas of various regions of Russia, the countries of near and far abroad.

4. MECHANISM OF NETWORK HUMAN CAPITAL CREATION

Russia's regions are diverse in the quality of human capital, quality of institutions, level of creativity, tolerance and innovation, i.e. ability to quickly master new technologies. For example, the Ural macro-region objectively has prerequisites for transition to a new industrialization path, for transformation into another economy without acute crises and shocks. The need for new industrialisation for the Ural is connected, firstly, with ensuring the restoration of traditional basic industries on a new technological basis (a policy of reindustrialisation), and secondly, with the creation of new industries of the fifth and sixth technological stages, which would make it possible to raise not only the region's economy but also the entire country to a new level of development. The creation of networks means a fundamentally new stage in the development of higher education both in regions and in macro-

regions. One of the brightest examples of successful scientific partnership is the network scientific and educational laboratory "Dynamic Modeling and Control of Responsible Structures" of Tomsk Polytechnic University and its network partners - Tomsk State University, The Technical University of Berlin, Institute of Strength Physics and Material Science of Siberian Branch of Russian Academy of Sciences and JSC "Rocket and Space Corporation "Energy" named after S.P. Korolev. The basis of this network structure is the interaction of human capital of universities, teams of scientific and research and production organizations of the Ural macro-region. It should be noted that in the corporations of the Ural macro-region the economic effect is achieved through real interaction between three institutional sectors - the state, production, and science (education). In foreign economic literature, this triad is identified as the "triple helix" model. The leading role in this triad is played by universities, not the state. The logic of this model based on universities is simple: only the efforts of young people can build a new innovative economy. This is why the Ural State University of Economics, being a university that is integrated into the regional economy and produces in-demand specialists, sees the study of new industrialisation as a priority area of its scientific work. In 2007, six state corporations were established in Russia, including Russian Technologies, Rosatom, and RUSNANO (currently RUSNANO). The Ural macro-region has managed to preserve its "genetic code" - an industrial model with a core of production facilities combined with the necessary intellectual resources and human capital. The decisive factor that initiates progressive structural shifts in the economy of the Ural macro-region is the launch of new industrialization processes based on priority support for competitive technologies in the most important strategic areas [15]. Personnel problems include, firstly, ageing of personnel in higher engineering and technical education. The capabilities and resources of specialists educated during the Soviet era are often insufficient to work with new technologies. Second, among the personnel problems in the engineering industry we can single out the "brain drain". No matter how skeptical may we be about this phenomenon in recent years, the fact remains: highly professional specialists with significant intellectual potential, if not go abroad, then move to the central regions of Russia, where a significant number of knowledge-intensive enterprises are concentrated. Financial problems include, first of all, outdated material and technical base, lack of modern equipment in higher education institutions. This is due to the low level of financing of most modern Russian universities in general and the Ural Federal District in particular. Let us consider the Far Eastern macro-region, the leader of the Russian shipbuilding industry. The Far Eastern Shipbuilding and Shiprepair Center, Amur Shipyard in Komsomolsk-on-Amur are growth points of the shipbuilding industry, activation of which is a strategically important task fixed in the state program of shipbuilding development till 2030. An important problem for the development of the regional economy in the conditions of digital transformation is weak interest of the management in the introduction of scientific and technological achievements into production and, as a result, weak inclusion of many innovative companies into the international exchange and cooperation. Significant qualitative features of the formation of network human capital associated with the formation of entrepreneurial activity, including the objective need for a close link between education and production activities, are due to the digitalization of the economy. Optimization of organizational linkages allows the effective use and growth of human capital, which is directly related to the innovation activity of enterprises in the region. The Zvezda shipyard of the shipbuilding cluster on the basis of the Far Eastern Shipbuilding and Ship Repair Center is an example of a large-scale innovation process in the industry area. In modern market economy conditions, management of innovative development of shipbuilding and ship repair is possible only within the framework of the cluster approach. The level of development of the network human capital is to a great extent at critical levels. At present, the pace of innovation development of the Far Eastern macro-region is still insufficient. An essential problem is insufficient provision of the implemented and planned projects with

qualified personnel. This is why the sphere of education, science and manufacturing in the Far East should be given priority attention. Development and implementation of new methodological approaches to solving the problem of optimization of human capital management will make it possible to form prerequisites for qualitative and stable growth of the Far East economy. Let us separately consider the South Growth Pole, the Krasnodar Region, which is a leader in human capital accumulation as a key asset and the basis for long-term competitiveness. The centre of the South Growth Pole, territory of high quality of life, possessing steady system of settling within the limits of "clever" cities and the villages created for the people keeping and developing multicultural traditions and the nature of Kuban and Black Sea coast. The main form of interaction between regions is interregional clusters, which allows for the implementation of major joint projects, while attracting the attention of world-class investors. From the point of view of using the existing potential, inter-regional clusters are relevant and expedient to form and develop in the following areas and activities: 1) production and processing of agricultural products; 2) tourist and medical services; 3) social services to meet the needs of the local population and development of human capital [15]. The main directions for improving the efficiency of the use of human capital network in the South Growth Pole are the following:

- development of a forecast of the agricultural sector's personnel competencies for the long-term period (including a prospective list of key competencies and qualifications);
- preparation of an action plan to take into account the provisions of the forecast of agro-industrial complex personnel competencies in professional and federal state educational standards and programs of additional professional education;
- development of human resources potential capable of introducing and mastering innovations based on stimulating employment at agricultural enterprises, increasing the attractiveness of labor in agricultural production, finding effective forms of agricultural education development and its integration with science;
- development of training systems for specialists in the agricultural sector at various levels of education, including primary education;
- creation of a system of training, retraining and professional development of personnel, including in the field of modern crop and livestock production technologies to ensure sustainable development of the complex;
- to meet the needs of food and processing industry enterprises for qualified personnel, including in the application of innovative technologies and technologies of deep processing of products;
- encouragement of attraction of qualified personnel;
- carrying out organizational and socio-psychological work aimed at increasing the efficiency and thrift of machinery and resources in the agro-industrial complex;
- conducting review seminars on the possibilities of introducing information technologies into the production process involving independent experts and software developers on a permanent basis [17].

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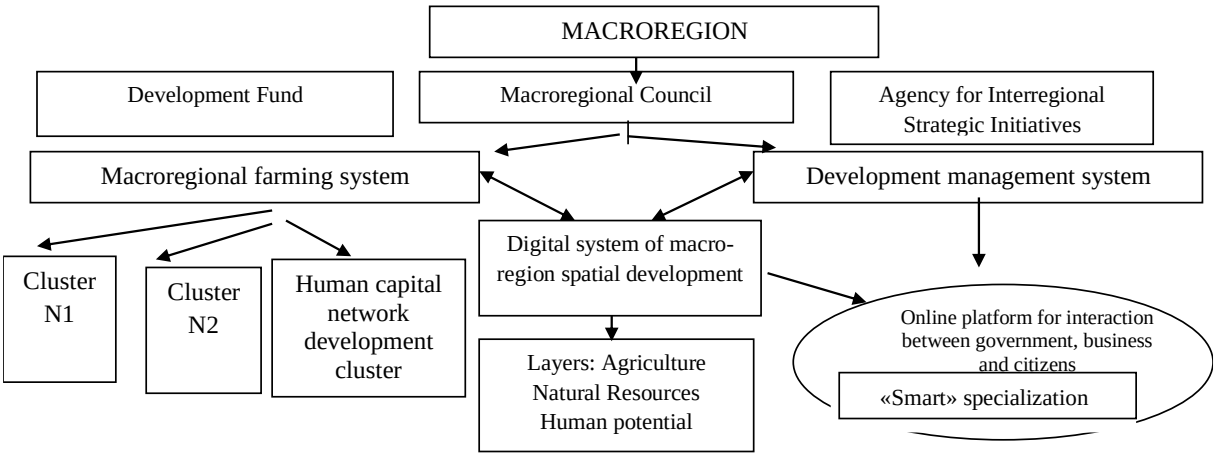
Figure 5: Model of macro-region management by formation of network human capital in conditions of digital transformation [1]



In our opinion, the modern regional economic system as a result of digital transformation should be based on "smart" specialization in the framework of interregional cooperation, as we face the problem of lack of educational platforms that would ensure the market saturation with such specialists. Within the limits of the decision of the given problem the model of management of macroregion at the expense of formation of the network human capital in the conditions of digital transformation is offered (figure 5). Based on the model presented, it should be noted that "smart specialization" is aimed at using the links that arise between the areas of economic activity and the traditional boundaries of clusters. Clusters are elements of the region's innovation ecosystem, while smart specialisation is a much broader policy aimed at transforming the system itself. Nevertheless, clusters can be brought closer to 'smart specialisation' if they stimulate new areas of knowledge diffusion with a high degree of impact on economic growth.

5. CONCLUSION

In general, the activation of human network capital can act as one of the factors of effective digital transformation of the economy. Digital transformation ensures transition of economy to a new stage of development. The effective way of activation of formation and development of macro-region are inter-regional clusters which for today from positions of world and domestic experience represent one of the most effective kinds of the spatial organization of economic activity in territory. Clusters allow to concentrate the network human capital of enterprises and organizations of various industries, taking into account the requirements of "smart specialization" in the digital transformation.

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PROSPECTS FOR THE DEVELOPMENT OF INTERNATIONAL TRANSPORT CORRIDORS IN MODERN GEO-ECONOMIC CONDITIONS

Mansur Barxudarov
Azerbaijan State University of Economics (UNEC), Azerbaijan
mansur_ib@yahoo.com

Esmira Ahmadova
Azerbaijan State University of Economics (UNEC), Azerbaijan
fbc.baku@gmail.com

Kryukova Ekaterina
Astrakhan State University,
Astrakhan, 20a Tatischev Str., 20a, Russia
krukovae@mail.ru

ABSTRACT

The article considers the prospects for the development of international transport corridors, taking into account positive and negative factors. The international transport corridor (ITC) is the backbone of the national or international transport system, which in turn provides significant international freight and passenger traffic between individual geographical areas, taking into account modern geo-economic conditions. The main goal of the international transport corridor development perspective is to ensure international transport and promote the development and strengthening of global economic relations. The shortest and most economically profitable land, water and air links between the countries of Europe, the Mediterranean, the Middle East and the regions of Russia, as well as with the States of Transcaucasia, Central Asia, and the Persian Gulf are carried out through the region of Southern Russia. Therefore, the transport complex of the South of Russia is an important component of the transport system of the Russian Federation. Analysis of the state of the transport sector of the economy of the South and North Caucasus of Russia in 2016-2017 shows that among the most difficult problems of its development are:

- *Significant lag in the material and technical base of transport infrastructure from world standards;*
- *Uneven development of individual sectors and territorial complexes of the macroregional transport system;*
- *Disproportionality of placement of infrastructure objects in the industry;*
- *Financing volumes that are not adequate for the needs of modernization and development of the industry;*
- *Imperfect mechanisms of its regulation at the Federal and regional levels as a result of the development of the industry on the "residual principle".*

Keywords: *Transport system, Transport infrastructure, Regional competitiveness, Logistics, special economic zones, Transport corridors*

1. INTRODUCTION

The formation and prospects for the development of the (ITC) are quite a long and complex process, spanning more than a dozen years. International transport corridors as an integral part of the world economy have their own characteristics and advantages and disadvantages. International, cross-border logistics is actively involved in international economic relations,

trade, and exchange of tangible and intangible values and goods.it actively uses international transport corridors and determines the directions of their development, taking into account security and environmental protection, which form modern logistics supply chains and international commodity distribution networks. Currently, international transport corridors occupy a relatively large niche in the expansion of international cooperation. (ITC) effectively provide solutions to transport issues that are related to interstate economic relations and other links that create international transport infrastructure and necessary communications. At the present time, the main trends in the functioning and future development of transport corridors in Russia are [1]:

- Formation of a single transport space based on balanced infrastructure development;
- Ensuring the availability, required volume and high level of competitiveness of transport services, improving their quality as part of the innovative way of development of the country's economy and in accordance with social standards;
- Integration into the global transport space, building and implementing transit potential;
- Improving the security of the transport system;
- Reducing the harmful impact of transport on the environment.

2. THE MAIN IMPETUS FOR THE DEVELOPMENT OF INTERNATIONAL TRANSPORT CORRIDORS

Special economic zones (SEZs), usually located at transport hubs or on the most active sections of transport routes, can give an impetus to the development of international transport corridors (ITC). Initially, they were created as centers to increase the attractiveness, efficiency and, consequently, the competitiveness of regions. One of the mechanisms for stimulating economic growth in the regions is the creation and development of special economic zones (SEZs). The beginning of the existence of the SEZ can be considered as 2005, when Federal law No. 116-FZ "on special economic zones" was adopted on 22.07.2005. The model of integrated assessment of the effectiveness of special economic zones is based on the weighted calculation values of 27 basic and 4-6 individual parameters (depending on the type of special zone), which allow to evaluate the effectiveness of functioning and conduct a comparative analysis of territories with a special economic regime, taking into account the combined activities of both enterprises with the status of a resident and management companies.

$$Э_{озэ} = \sum_{i=1}^{5} \left(k_i * \sum_{j} p_{ij} O_{ij} \right)$$

Where:

- ki - weight coefficient of the I-th group of indicators in their total volume (i=1..5),
- pij -weight coefficient of the j-th indicator of the i-th group (the number of indicators is different for each group),
- Oij-evaluation parameter corresponding to the value of the j-th indicator of the I-th group.

The impact of the functioning of special economic zones on regional socio-economic development is based on the relatively greater importance of investment as a factor of growth of the gross regional product in the regions where special economic zones are located. As a research method, it is necessary to use regression analysis with a dummy variable. The statistical significance of the dummy variable in the regression model is "the presence or absence of a special economic zone in the region".

Regression coefficients are interpreted as follows:

$$Y_i = 57335{,}7 + 2{,}69\ X_{1i} + 75600\ X_{2i}$$

Where:

- Y_i - average per capita gross regional product of the i-th region, rubles per person,
- X_{1i}, - weight coefficient of the j-th indicator of the i-th group (the number of indicators is different for each group),
- X_{2i}, - a fictitious variable that indicates the presence or absence of SEZs in the region.

If the fictitious variable has a constant value, an increase in the average per capita investment in fixed assets by 1 RUB leads to an increase in the predicted average per capita gross regional product by 2.69 RUB. If the volume of investment in fixed assets is constant, placement in the region of the special economic zone increases the average per capita gross regional product by 75,600 rubles. Further, taking into account the main indicators of regional economic development, cluster analysis methods can be used to group regions into homogeneous groups (clusters).

Cluster 1	Cluster 2	Cluster 3
Regions with a high level of development	Regions with an average level of development	Regions with a low level of development

Table 1: Cluster analysis of socio-economic development of regions and distribution of SEZ placement regions by selected groups

The output is the division of regions into groups. The first group with a high level of economic development will mainly consist of regions where special economic zones have been created and are effectively functioning. The second group of regions (with average values) that can apply for the placement of new special economic zones deserves attention: these regions have sufficient economic potential, and the establishment of special economic conditions in certain territories can become a catalyst for their socio-economic development.

2.1. Main trends in the Russian freight transport market

Growth in global trade — one of the key drivers of transport systems development-was lower than expected in 2018. At the end of the year, it was 3% (previously projected growth of 3.9%) against 4.6% in 2017 [5]. In the context of stabilization of the Russian economy, the cargo turnover of transport in Russia increased by 2.8% in 2018. The WTO highlights weaker global economic growth in comparison with expectations, instability in financial markets and tightening monetary policy in developed countries as the main factors for the decline in 2018.

2.1.1. Transport potential of the South of Russia

In 2017, the share of the transport complex of the southern Federal district and the Northern Federal district in the all-Russian volume of cargo transportation by public rail was 8% (over the past 10 years, it increased by 0.5%), and by road – 3.8% (over the decade, the decrease was 2%) [4].

Table following on the next page

Subject	Departure of goods by railway transport, mln. t.	In %	Cargo transported by road, mln. t .	In %
The Russian Federation	1384,3	100,0%	5403,9	100,0%
Southern FO	98,6	7,1%	158,4	2,9%
North Caucasus FO	12,8	0,9%	48,6	0,9%
Central FO	201,7	14,6%	456,7	8,5%
North-West FO	150,1	10,8%	194,1	3,6%
Volga FO	197,3	14,3%	329,5	6,1%
Ural FO	179,7	13,0%	350,4	6,5%
Siberian FO	475,5	34,3%	320,5	5,9%
Far Easter FO	62,3	4,5%	99,6	1,8%

Table 2: Cargo Transportation, 2017

A natural result of the accumulated problems in the industry is the modest indicators of the transport regional product (TRP) of the southern macroregion. In terms of TRP, the southern Federal district is the second-to-last , and in terms of TRP per capita - the last place among the Federal districts of Russia. A negative factor is the lack of stable positive dynamics of growth in physical volumes of TRP in all subjects of the southern Federal district.

Subject	2005	2010	2016	Growth rate
Russian Federation	1911644,8	3957215,7	6579142,8	244%
Southern FO	128239,7	294580,0	626722,4	389%
Adygeya republic	1566,7	2029,4	4110,9	162%
Republic of kalmykia	900,8	1317,8	12666,2	1306%
Krasnodar region	71975,5	159387,8	360852,3	401%
Astrakhan region	10168,5	20139,5	34884,0	243%
Volgograd region	17071,5	46381,7	58719,4	244%
Rostov region	26831,3	66626,4	105484,0	293%
North Caucasus FO	43304,6	77589,6	136645,9	216%
Republic of dagestan	12842,8	24691,9	41199,7	221%
Ingush republic	378,4	1853,4	4019,7	962%
Kabardino-Balkar Republic	3057,2	5781,5	7564,3	147%
Karachay-Cherkess Republic	1003,5	2444,5	3365,0	235%
Republic Of North Ossetia-Alania	3055,9	6553,5	11294,8	270%
Republic of chechnya	1030,5	3817,5	9002,4	774%
Stavropol territory	21838,8	32748,3	60629,0	178%

Table 3: dynamics of TRP volumes in the regions of the South of Russia

It is obvious that the share of the transport component in the industry structure of the GRP of the southern Federal district and the Northern Federal district is extremely insignificant. Given the favorable geographical location and potential of the southern macroregion, as well as the strategic importance of the development of the transport industry to ensure the economic security of the regions of the South and the country as a whole, this state of Affairs in the industry is rightfully considered paradoxical. The unsatisfactory development of transport infrastructure in the South of Russia is due to the limited resources allocated for this purpose [2].

In recent decades. there is a decrease in fixed capital investment in the transport sector of the southern Federal district and the Northern Federal district from 50% of total investment in the region in 2000 to 27% in 2017.

Subject	GRP, million rubles	GRP per capita, RUB	Share of transport in GRP, %	TRP, million rubles	TRP per capita, RUB
Russian Federation	69254134,3	472161,9	9,5	6579142,8	44855,4
Southern FO	4896268,6	298585,7	12,8	626722,4	38219,0
Adygeya republic	91352,4	201918,1	4,5	4110,9	9086,3
Kepublic of kalmykia	56045,1	201406,9	22,6	12666,2	45518,0
Republic Of Crimea	315918,5	165433,8	8,8	27800,8	14558,2
Krasnodar region	2015934,7	363731,3	17,9	360852,3	65107,9
Sevastopol	64163,2	151862,7	7,9	5068,9	11997,2
Astrakhan region	338679,5	332447,4	10,3	34884,0	34242,1
Volgograd region	743283,7	292565,7	7,9	58719,4	23112,7
Rostov region	1270891,5	300186,2	8,3	105484,0	24915,5
North Caucasus FO	1797972,3	184466,3	7,6	136645,9	14019,4
Republic of dagestan	597096,7	197141	6,9	41199,7	13602,7
Ingush republic	50882,9	106756,6	7,9	4019,7	8433,8
Kabardino-Balkar Republic	132706,9	153710,9	5,7	7564,3	8761,5
Karachay-Cherkess Republic	73151,3	156602,4	4,6	3365,0	7203,7
Republic Of North Ossetia-Alania	125498,3	178390,3	9,0	11294,8	16055,1
Republic of chechnya	166711,2	118696,4	5,4	9002,4	6409,6
Stavropol territory	651925	232582	9,3	60629,0	21630,1

Table 4: Contribution of the transport industry to the economy of Southern Russia

The international transport corridors of the Lower Volga region historically represent the intersection of the main routes from Asia to Europe and from South to North. The creation of a corridor that meets modern requirements of technical, technological and organizational support will not only optimize cargo flows within the country, but also ensure the movement of transcontinental cargo. In modern conditions, the main exchange of goods between Europe and Asia is carried out on ocean routes around the continent, and the delivery of goods takes from one and a half to two months. The creation of a modern land transport corridor will reduce the delivery time to ten days.

2.1.2. Relationship between the transport system and special economic zones

The special role of the transport system of Southern Russia and further development of the transport space of the macro-region of the southern Federal district and North Caucasus Federal district, which are (ITC) "the North-South" linking the countries of Eastern and Central Europe and Scandinavia, the European part of Russia and over the Caspian sea with Azerbaijan, Iran, India, Pakistan; "Transsiberian," connecting Central Europe through Moscow with the Urals, Siberia, the Far East and China or through the South of Russia with Kazakhstan, Mongolia and Korea [3]. The positive impact of the SEZ on the efficiency of the transport route is characterized not only by the additional volume of production. To an even greater extent, this parameter is influenced by the structure of the cargo base that the SEZ supplies. As a rule, these are finished products, often high-tech, with a high added and, consequently, realizable value. Therefore, the products are transferred by the carrier to the higher tariff class, which does not cause any fundamental objections of the cargo owner. The amount of profit received by the cargo owner is the main motive when choosing a route, and transport operators receive

additional opportunities to cover their costs when the tariff for transported products increases. On the Russian Railways, " the most important factors determining the level of freight tariffs are the so-called solvency of cargo and the cost of railway transport for their transportation. The relative importance of these factors has changed throughout the history of Railways – during periods of increasing road monopolies, the first factor has increased in importance, while the second factor has gained a predominant influence when carriers compete more." However, the positive impact of the SEZ on the efficiency of the (ITC) is not limited to high pricing of transported products: not only the cost indicators of products are important, but also natural ones – volume and mass. Products produced in the FEZ have a much lower weight and volume than the raw materials from which they are produced, and are convenient for container transportation. An assessment of the experience of creating and operating various types of SEZs in Russia in 2005-2018 allows us to conclude that this process is far from unambiguous, inconsistent, and contradictory, and there is a lot of evidence for this. For example, tourist SEZs in the Kaliningrad region and Krasnodar territory were closed due to the lack of residents, not in a physical sense, but because the regional authorities and representatives of resident companies could not agree on terms [6]. Difficulties have arisen with transport of the SEZ. So, in the airport zone "Ulyanovsk-several years of difficult negotiations. There are no residents in the port and logistics zones in the Khabarovsk territory and Murmansk. The first one was under threat of closure, but this was avoided due to the decision taken by the Russian Government to expand it by including the port of «Vanino». The decision to create a SEZ in Murmansk was initially hasty and economically poorly justified, since the BAM ending in the SEZ "Sovetskaya Gavan" could not provide the capacity laid down in the original concept.

3. THE PROBLEM OF INTERACTION OF VARIOUS TYPES OF MIXED TRANSPORT

The problem of interaction between different types of transport in multimodal (mixed) transport has been solved for a long time. Features of the device and functioning of each type of transport leave an imprint on their interaction. Domestic and foreign practice shows that it is almost impossible to organize the transfer of cargo flows from one type of transport to another without downtime of vehicles-without providing for the possibility of intermediate storage of cargo [2]. For example, today the Russian port complexes of the Tuapse and Novorossiysk hubs can hardly cope with the volume of "reoriented" cargo — there is not enough storage space and production capacity to process the annually increasing volumes. At the same time, the further development of such large terminals in the southern Region in the ports of Novorossiysk and Tuapse is hindered by the constrained conditions of their placement in megacities, which requires finding other ways to solve the problem of Russian cargo exports. The main way to transfer cargo from one type of transport to another is to work through a warehouse (warehouse option) [7]. However, the growth in the volume of export cargo transportation through ports in the South of Russia is outpacing the development of their infrastructure, as well as port stations and approaches to them. There is a shortage of storage space, so that cargo transshipment is often carried out without warehousing, according to the direct option, which requires the maintenance of an additional fleet of loaded cars at the unloading stations and on the road. The main reasons for unbalanced cargo flows and problems with transshipment to ships are the following:

- Use of warehouse areas of ports as consignment warehouses when warehouses are full in anticipation of better market conditions or ship chartering;
- Use of wagons as warehouses on wheels;
- Lack of technical capabilities for unloading wagons at ports;
- Irregular loading of cargo.

The main direction of improving the interaction of different types of transport in these processes can be the formation of a network of information and logistics centers — automated control centers for the preparation and mutual coordination of schedules for the approach of vehicles of interacting modes of transport. The problems of forming the (ITC) in the South and North Caucasus go beyond solving the actual transport problems. Their effective solution will also have a positive impact on macroeconomic indicators, which will result in additional revenue for the state and other investors from increasing international transport volumes and improving transport infrastructure in the regions of Southern Russia. This will contribute to the activation of interregional and international relations, the intensification of commodity flows, and the expansion of tourism.

4. CONCLUSION

A systematic approach to solving transit transport problems will help develop the service sector of the macroregion. In the cross-border territory of the district, roadside hotel and information services, tourism and entertainment infrastructure, health and law enforcement services, folk and environmental crafts will be in greater demand [7]. The main problems may be related to the need to improve the quality of services in these areas and to certify these services according to Russian and international standards. Consistent implementation of this direction will lead to the creation of additional jobs in the sphere where representatives of various nationalities of the South of Russia are traditionally successful. In order to take full advantage of the country's geographical location, ensure the increasing volume of foreign trade activities, and strengthen Russia's role in the global economic system, it is necessary to form and develop Russian international transport corridors as important elements of the international Euro-Asian transport infrastructure being created. Thus, the process of formation and systematic development of Russian international transport corridors is impossible without state support. State support for transport organizations operating on international transport services markets should be provided in the following areas:

1) Active support for international rules and regulations in the field of transport activities established by generally recognized multilateral agreements;
2) Preventing the introduction of unjustified regional restrictions that create discriminatory conditions for international transport activities;
3) Ensuring the necessary protection of the most poorly developed segments of the transport services market, as well as maintaining the system of bilateral international agreements in the field of passenger and cargo transportation;
4) Creating favorable economic conditions for Russian carriers to conduct business in the market segments where they operate;
5) Creating for domestic international carriers no less favorable regimes in the implementation of customs and border procedures than for carriers of other countries;
6) Creating conditions for Russian carriers to purchase modern transport equipment that meets the requirements for it when working on international markets and ensures the competitiveness of domestic companies ' services;
7) Development of mechanisms for prompt response in cases where Russian carriers are discriminated against abroad;
8) Improving the effectiveness of national regulatory mechanisms for segments of the international transport market that have a bilateral licensing system;
9) Implementation of a coordinated active policy in international organizations that provide access to international transport services markets;
10) Development and implementation of measures that encourage the transportation of export goods by domestic transport organizations.

ACKNOWLEDGEMENT: *Based on projections of possible trends and benchmarks for Russian economic recovery and transformation of the social sphere, we propose the following scenarios for the future development of the transport system: the inertial variant, energy and raw material options; innovative option [8]. The inertia option is based on the business behavior, taking into account the study of the business environment, possible options for increasing exports, and the study of factors of socio-economic development. The energy and raw material option is based on the principle and development of deposits of useful emitted, as well as the use of transit potential. The innovative option is based on projects for the construction of large transport complexes, multi-modal logistics centers and the creation of so-called "information nodes".*

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ASSESSMENT OF VALUE ADDED TAX GAPS: CROSS-COUNTRY ANALYSIS

Mirdamad Sadigov
Azerbaijan State University of Economics (UNEC)
Baku, Istiqlaliyyat str.6, AZ1001, Azerbaijan
Mirdamads@icloud.com

Inna Tiutiunyk
Sumy State University
Sumy, Rymskogo-Korsakova st. 2, 40007, Ukraine
i.karpenko@finance.sumdu.edu.ua

Svitlana Pokhylko
Sumy State University
Sumy, Rymskogo-Korsakova st. 2, 40007, Ukraine
s.pokhylko@finance.sumdu.edu.ua

ABSTRACT

Increasing globalization processes, the openness of economic and financial systems, expanding of export and import operations and other factors create prerequisites for increasing the volume of illegal operations and shadowing economy. One of the most common ways of the shadow economy is tax evasion leading to a significant economic loss and deteriorating the macroeconomic stability of the country. The research deals with the assessing the level of VAT gaps, compare the magnitudes of its impact on the level of economic development in transition and emerging countries. Based on the analysis of the literature, the main risks of the existence of the tax gaps are identified. The model is based on final consumption - for private households, intermediate consumption and investment - for state and local governments, public or non-profit institutions, financial intermediaries The research has shown that the volume of VAT gaps in Ukraine is one of the highest among the analyzed countries and ranges between 39-42%, while in most European Union countries it does not exceed 25%. The scientific contribution of the research consists in the fact that the current studies regarding the assessment of the level of VAT tax gap are fragmentary. This study allowed the authors to conclude on the need to improve the electronic administration of value-added tax, review the list of tax benefits for VAT, improve the functioning of the automated control system for business operations and risk analysis. This will make it impossible to generate excessive tax credit and improper budget reimbursement.

Keywords: *Tax gap, VAT, Cross-country analysis, Shadow economy, Risk, Economic development*

1. INTRODUCTION

Modern trends of economic development are a significant budget deficit, instability of foreign exchange market and banking system, low level of investment attractiveness of the country, high level of corruption. The world political and economic crisis deepens the imbalances in the economy and actualizes the search for a mechanism to fill the state budget and increase the level of financial stability of the country (Boiko, Samusevych, 2017; Ibragimov et al., 2019; Hrytsenko et al., 2018; Ivanová and Kordoš, 2017; Rekunenko et al, 2019; Lyulyov, Pimonenko, 2017). However, in recent years the efficiency of the tax system has been steadily declining and the number of tax evasion schemes is increasing. This situation significantly highlights the need for a study of the role of indirect taxes in the shadow economy and the

development of mechanisms to counter the tax evasion and withdrawal of funds (Bilan at al., 2019d; Brychko et al., 2019; Grencikova et al., 2019; Grytsenko et al., 2019; Vasyl'eva, 2017; Vasilyeva, Makarenko, 2017; Pomianek, 2018). Although today the understanding of the essence of direct and indirect taxes by the world community has been transformed, the mechanisms of their collection have not changed significantly. As the main budget-forming link of the economy, taxes are an effective instrument to support economic activities, assistance to vulnerable groups, increase the competitiveness of domestic enterprises, and indicators of economic development (Berzin et al., 2018; Bilan et al., 2019a; Bojarko et al., 2012; Boyarko, Samusevych, 2011; Brychko, Semenog, 2012; Dkhili, 2018; Khan, 2018; Kostel et al., 2017). However, the current tax system does not fully perform its functions. The real tax revenues do not correspond to the state tax potential (Kouassi, 2018). One of the reasons that lead to tax gaps is the high level of shadowing. According to international experts, the size of tax gaps in the European Union for all taxes is about 20% of tax revenues (825 billion euros). According to the World Bank, the average level of tax revenues in the structure of GDP in developed countries over the past decade has been about 35%. According to the results of 2016, the highest value was given to Denmark – 33.74%, Iceland – 38.52%, Seychelles – 31.67%, Sweden – 27.65%. The lowest share of tax payments was in the United Arab Emirates - 0.043%, Iraq – 2.03%, China – 9.157%, Switzerland – 9.76% (Tiutiunyk, et al., 2019). In the structure of tax revenues of most European countries for the period 2011-2016, the largest share is occupied by indirect taxes (0.62-0.57% of revenues). Of the total number of indirect taxes, taxpayers often resort to various schemes of understatement of their VAT liabilities (for economically developed countries, its share does not exceed 20% – Japan – 12%, Canada – 14%), while for countries with transition economy, this value exceeds 50% of budget revenues (Bilan et al., 2019e; Ibragimov et al., 2019). In these situations, the role of indirect taxes as a regulator of economic growth and an important instrument for generating budget revenues is growing, and the problem of efficiency of the budget process is actualized (Kamara, 2017; Kuzmenko, Roienko, 2017).

2. THEORETICAL ASPECTS OF FORMING VAT GAP

There is no common world practice of assessing the level of shadow economy based on tax gaps. The current policy of preventing the shadowing economy is based on following methods of estimating illicit financial flows: a comparison the actual electricity consumption with corresponding to the production volume, expenditures on the purchase of goods with their total sales by all economic entities in the legal economy (Kouassi, 2018; Tiutiunyk et al., 2019), deposits in the current and base periods, marginal minimum and maximum level of the shadow economy in the GDP (Pakhnenko et al, 2018). Only a few EU countries (Estonia, Germany, Italy, Latvia and the United Kingdom) estimate tax gaps for the following direct taxes: personal income tax, corporate income tax, and social security contributions. The United Kingdom regularly makes tax gap estimations for all major taxes. The lack of common practice of assessing the gap for direct taxes can be explained by more comprehensive procedures of assessments of tax evasion by them than for indirect ones. Due to majority legislative incentives (numerous benefits, deductions, tax credits, allowances), it is difficult to develop a comprehensive methodology for assessing the theoretical amount of tax revenues. The implementation of any illegal actions by VAT payers to evade the payment is a real threat to the sustainable economic development of the country and the performance of the public authorities their functions (Kyrychenko et al., 2018; Dave, 2017; Petrushenko, 2013; Kendiukhov, Tvaronavičienė, 2017; Logan, Esmanov, 2017; Marcel, 2019). One of the reasons for using illegal schemes of VAT evasion is the specifics of its calculation and payment (Bilan et al., 2019b; 2019 c). Defined in some country's tax laws the possibility of a direct refund of the budget revenues provided the exceeding tax credit over the tax liability, encourages various

schemes to manipulate their values. The most common schemes of VAT evasion in addition to the above are:

- The establishment of a fictitious company with its subsequent use as a partner. This schema is aimed at control over the company, VAT avoidance, obtaining cash, manipulation with documentation;
- Transfer of tax liabilities from real economic entities to fictitious ones;
- Import of goods into the customs territory, payment of VAT on imports, obtaining a tax credit for this sum and their further sales without registration of relevant documents. In the future, 80-90% of such money returned to the client in cash (Ch, Semenog, 2017; Rubanov et al., 2019; Zakharkina, Abramchuk, 2018; Pilia, 2017).

These features form the preconditions for strengthening control over the effectiveness of the procedures for charging and paying VAT rather than on its regulatory support (Levchenko et al., 2019). Without diminishing the importance of scientific research of VAT administration, its role in forming the state budget, there is a need to shift the emphasis from improving the legislative framework for its operation to a more systematic and thorough study of VAT gaps, analysis of the international experience of controlling the completeness of its payment. It helps to determine the most adequate and adapted to the conditions of economic, social, and political development of the country mechanisms aimed at minimizing the difference between potential and actual revenues of this tax (Tiutiunyk, 2018; Vasylieva et al., 2017, 2018, Levchenko et al., 2018).

3. METHODS OF ESTIMATING THE VAT GAP

In the paper, the VAT gap will be defined as the difference between the theoretically amount of VAT that should be paid (including benefits and reduced tax rates), and the amount of VAT collected for a certain period. Given the low level of the economic development of majority countries, the assessment of potential VAT revenues will be carried out by the following formula:

$$Tax\ Gap_{VAT} = \frac{Tax\ ^{P}_{VAT} - Tax\ ^{F}_{VAT}}{Tax\ ^{F}_{VAT}} \quad (1)$$

- Tax Gap_{VAT} – the amount of the VAT gap;
- $Tax\ ^{P}_{VAT}$ – the amount of VAT that should theoretically be paid following current tax legislation;
- $Tax\ ^{F}_{VAT}$ – the amount of actual VAT revenues to the budget.

The amount of potential tax revenues will be determined by the formula:

$$Tax\ ^{P}_{VAT} = \sum_{i=1}^{n}(t_{r_t} \times \propto_i \times C_{i,u}) + \sum_{j=1}^{m}\left(t_{r_t} \times \beta_i \times I^{p}_{k,l}\right) \qquad (2)$$

- де: t_{rt} – VAT rate r in period t;
- α_i – the share of the i-th consumer goods and services that are taxed at different rates ($\sum_{i=1}^{n} a_i = 1$);
- β_i – the share of the i-th consumer goods and services, which are taxed at different rates ($\sum_{i=1}^{n} \beta_i = 1$);
- $C^{i}_{j,u}$ – j-th type of consumption (intermediate, final) u-th consumer (state and local authorities, private institutions, other institutions);
- k – investment goods;

- I^p – the volume of investments made by the p-th subject.

This approach takes into account the tax rate differentiation for each type of company and operation. It allows us to estimate the level of the gaps caused by the shadow economy, as well as to determine the most relevant instruments of managing the VAT gap. The results of the assessment of VAT gaps for 28 European countries shown in table 1.

Country	2014	2015	2016	2017	2018	Country	2014	2015	2016	2017	2018
Bulgaria	34.22	33.04	31.86	32.51	36.83	Cyprus	40.60	38.29	37.72	43.22	44.52
Czech Republic	16.61	15.16	14.75	16.90	19.37	Malta	38.03	31.41	33.39	35.38	36.51
Slovenia	28.72	26.81	25.21	26.37	27.03	Ukraine	39.77	41.59	42.63	40.04	41.42
Belgium	21.60	20.74	20.44	22.42	21.83	Ireland	20.64	18.4	17.75	18.57	19.03
Denmark	22.62	20.98	21.83	22.01	24.66	Spain	23.36	22.81	29.19	24.90	21.45
Estonia	25.49	24.71	24.40	25.13	25.54	Italy	23.79	23.49	32.12	33.59	34.43
Romania	25.76	23.91	24.23	25.79	26.69	Poland	28.15	27.00	24.89	26.03	26.68
Germany	11.63	10.30	9.77	11.19	12.82	Croatia	21.20	20.22	22.35	22.48	23.22
Lithuania	20.79	20.01	21.19	22.16	22.71	Finland	24.24	22.47	24.65	23.25	22.36
Hungary	25.80	24.80	24.45	25.57	26.21	France	17.33	16.92	16.26	18.63	21.35
Netherlands	10.52	10.90	9.76	10.20	10.46	Austria	12.89	12.45	13.37	15.32	17.56
Great Britain	14.20	13.07	12.34	14.14	16.2	Greece	37.80	36.89	36.99	34.23	33.24
Portugal	30.41	28.77	26.59	27.81	28.50	Latvia	20.76	19.81	20.69	21.63	22.17
Luxembourg	14.48	14.13	14.12	14.77	15.14	Sweden	15.79	15.24	15.06	15.75	16.15

Table 1: Results of estimating the amount of the VAT gap in European countries in 2014-2018

According to the results, Ukraine has the highest level of VAT gaps (39-42%). At the same, time in the majority of countries, it does not exceed 25%. The Netherlands, Germany, Sweden, and Luxembourg have the lowest level of VAT gaps. Such a method helps avoid the disadvantages of traditional methods, assess the effectiveness of the administration of certain types of taxes, identify the problems of their legislation. The catalyst for achieving these goals can be the implementation of international practice in preventing money laundering. The most relevant instruments for VAT gap management are to automation the VAT administration (prevent excessive tax credit and illegal budget reimbursement), revise the list of VAT tax benefits, improve the risk management system.

4. THE IMPACT OF THE VAT GAP ON THE COUNTRIES ECONOMIC DEVELOPMENT

The significance VAT in the state budget increases the role of analyzing the stability of tax revenues. The timeliness of financing the expenditure part of the budget largely depends on this. Besides, any illegal actions to minimize the tax liability for VAT to a greater extent than for other payments negatively affect the economic development of the state. To determine the strength of the impact of VAT gaps on the economic development of European countries, we will analyze the correlation using the Multiple regressions method. As for indicators of economic development, we use GDP, the volume of the budget deficit, and production volume. Graphical interpretation of the relationship between the analyzed indicators shown in Figure 1 indicates a negative correlation between them. The growth of the gaps leads to a deterioration in the country's economic development.

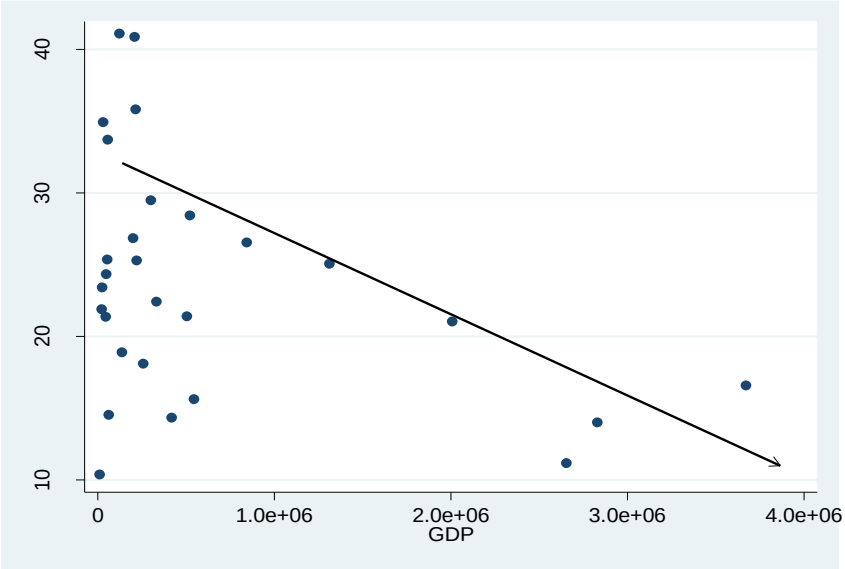

Figure 1: The level of VAT gap and GDP in European countries in the period 2014–2018

The results of Multiple regressions showed the impact of tax gaps on indicators of economic development in European countries. Most of the obtained results are statistically significant at the level of 0.1%. The results of the calculations shown in table 2.

Country	GDP	PV	BD	Country	GDP	PV	BD
Bulgaria	-3.9194 -4.1955	2.8424 -1.3024	0.8826 -0.3246	Cyprus	-1.2742 -0.1106	-4.3194 -0.2916	-3.5170 -0.2282
Czech Republic	-3.1463 -0.7948	-7.3111 -2.2661	-3.6599 -0.4764	Malta	-3.9194 -4.1955	2.8424 -1.3024	0.8826 -0.3246
Slovenia	-2.6604 -0.6097	1.1061 -0.4250	0.9350 -0.5975	Ukraine	-3.1463 -0.7948	-7.3111 -2.2661	-3.6599 -0.4764
Belgium	-2.5318 -0.1372	-3.6000 -0.6475	-3.1294 -0.7762	Ireland	-2.6604 -0.6097	1.1061 -0.4250	0.9350 -0.5975
Denmark	-2.7050 -0.6440	-0.6516 -0.1988	-0.3405 -0.5123	Spain	-2.5318 -0.1372	-3.6000 -0.6475	-3.1294 -0.7762
Estonia	-2.2101 -0.1877	-0.2642 -0.3482	-0.8808 -0.7893	Italy	-2.7050 -0.6440	-0.6516 -0.1988	-0.3405 -0.5123
Romania	-1.4286 -0.2730	1.4500 -0.1156	1.2163 -0.0972	Poland	-2.2101 -0.1877	-0.2642 -0.3482	-0.8808 -0.7893
Germany	-3.9194 -4.1955	2.8424 -1.3024	0.8826 -0.3246	Croatia	-1.4286 -0.2730	1.4500 -0.1156	1.2163 -0.0972
Lithuania	-3.1463 -0.7948	-7.3111 -2.2661	-3.6599 -0.4764	Finland	-1.1901 -0.1106	-4.0345 -0.2916	-3.2850 -0.2282
Hungary	-2.6604 -0.6097	1.1061 -0.4250	0.9350 -0.5975	France	-1.2330 -0.1439	-4.1798 -0.3794	-3.4033 -0.2970
Netherlands	-2.5318 -0.1372	-3.6000 -0.6475	-3.1294 -0.7762	Austria	-1.7488 -0.1899	-5.9286 -0.5007	-4.8272 -0.3919
Great Britain	-2.7050 -0.6440	-0.6516 -0.1988	-0.3405 -0.5123	Greece	-2.1886 -0.1438	-7.4192 -0.3792	-6.0409 -0.2968
Portugal	-2.2101 -0.1877	-0.2642 -0.3482	-0.8808 -0.7893	Latvia	-1.3021 -0.2249	-4.4142 -0.5931	-3.5942 -0.4642
Luxembourg	-1.4286 -0.2730	1.4500 -0.1156	1.2163 -0.0972	Sweden	-1.6161 -0.1517	-5.4786 -0.4001	-4.4608 -0.3132
*p<,05 ** p<,01 ***p<,001, Standard errors within parentheses							

Table 2: Multiple regressions (OLS) for VAT gap and indicators of economic development in European countries

Thus, we can conclude about the impact of tax gaps on economic development indicators. Tax evasion hurts the country's GDP, stimulates the growth of the budget deficit. The analysis showed a direct link between the VAT gap and the officially declared production volumes. The main reason for this is the deliberate understatement of production to avoid taxation.

5. CONCLUSION

To date, the development of an efficient and fair tax system is one of the most controversial and pressing issues of financial policy. On the one hand, this is due to the presence of a significant amount of budget deficit and unearned tax revenues, on the other – an effective tax system – a guarantee of equal living conditions and prevent fraud in the financial sector of the economy. Tax gaps are the result of a violation of the basic principles of the tax system, low level of tax morality in society, distrust of the government, the variability of the macroeconomic situation in the country (Lyeonov et al., 2019; Makarenko, Sirkovska, 2017; Morscher et al., 2017; Musa et al., 2017; Kozarezenko et al., 2018). Based on the analysis concluded significant differences in VAT gaps between countries. The highest VAT gaps are in Cyprus, Malta, Ukraine, and the lowest in the Netherlands, Germany, Sweden, and Luxembourg. Analysis of the impact of VAT gaps on economic development indicators of EU countries shows a statistically significant correlation between them. Considering the important role of tax revenues in the budget process, the correlation between the VAT gap and indicators of economic development, the proposed methodological approach to assessing the VAT gap can serve as an instrument indirectly assessing the level of the shadow economy. The coefficient of the correlation shows a close relationship between the volume of tax evasion and the economic development of the country.

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BLOCKCHAIN TECHNOLOGY BASED SYSTEM-DYNAMIC SIMULATION MODELING OF ENTERPRISE'S CYBER SECURITY SYSTEM

Mustafa Sadigov
Azerbaijan State University of Economics (UNEC)
Baku, Istiqlaliyyat str., 6, AZ1001, Azerbaijan
must.sadigli@gmail.com

Olha Kuzmenko
Sumy State University
Sumy, Rimsky-Korsakov str., 2, 40007, Ukraine
o.kuzmenko@uabs.sumdu.edu.ua

Hanna Yarovenko
Sumy State University
Sumy, Rimsky-Korsakov str., 2, 40007, Ukraine
a.yarovenko@uabs.sumdu.edu.ua

ABSTRACT

This research is devoted to solving the issue of increasing the level of cybersecurity in large companies through the introduction of modern blockchain technology. The urgency of this problem has been determined for enterprises that have faced with cases of cyber fraud, initiated not only by hackers but also by company employees. The authors have proposed a system-dynamic model of the company's cybersecurity system built using blockchain technology. The choice of this modeling tool gives an ability to create a computer model of a complex cybersecurity system for further effective design of the proposed modification. The authors have made the main emphasis on reducing the threat associated with the human factor since, according to statistics, 34% of cases are accounted for by the system vulnerability due to user activities. The researchers have developed a diagram of causal relationships, which imitates the process of personnel behavior in the environment of an enterprise automated information system, provided that a person intentionally or unintentionally carries out fraud. The model takes into account the primary condition when any transaction initiated by a person registered in the system has fixed in its blockchain. Thus it reflects the system reaction in case of illegal actions, which further creates the basis for the development of a set of preventive measures. The authors have proposed a system-dynamic diagram based on an analysis of the causal relationship diagram. The article describes the components of the model in the form of differential equations and conducted experimental modeling for various values of some parameters at the initial level of others to identify the sensitivity of the system. The results have made it possible to conclude about the increasing system response in cases of employee fraud in the environment of the company's automated information system if it bases on blockchain technology.

Keywords: *blockchain, cybersecurity, enterprise information system, fraud, system-dynamic simulation modeling*

1. INTRODUCTION

Most companies face such a problem as decreased reliability of the cyber security system, which leads to vulnerabilities in the corporate information system of enterprises and violation of the confidentiality, integrity and availability of data. In the modern world, such problems usually lead to the loss of information, and, as a result, companies lose their customers, money,

and reputation. This is due to the intervention of external cyber fraudsters who aim to steal information, including personal data of clients and banking information. Cybercrime cases are often committed by enterprise employees who have unlimited access rights, use remote access, mobile applications, and cloud technologies. Therefore, companies are interested in creating an effective cybersecurity system that would reduce the number of incidents and prevent cyber threats. The practice shows that despite the growing investment in the development of a cybersecurity system, current data protection solutions do not meet the needs of the business. This conclusion was reached by 81% of respondents surveyed by Dell Technologies. The main reason is the increase in the amount of information owned by companies. In 2019, its volume grew by almost 40% as compared to 2018 with a total cost of data loss of more than $1 billion per organization (DELLTechnologies, 2020). According to the IBM study, about 60% of initial cases of penetration in the company's information system was due to account data that were previously stolen (29% of cases that led to the loss of 8.5 billion records), or software vulnerabilities (more than 30% of cases) (IBM Security, 2020). On the other hand, 34% of cases are accounted for by the system vulnerability due to user activities (EY, 2018). The problem of improving the efficiency of the cybersecurity system of enterprises is global. The average amount of financial losses from information leaks in June 2019 for medium-sized businesses in the world amounted to about $3.92 million (Ponemon Institute, 2019). Therefore, companies are interested in attracting the latest technology to ensure the reliability and security of information. The following technologies were widely used in 2019: Cloud-native Applications (60%); Artificial Intelligence and Machine Learning (64%); Software-as-a-Service Applications (54%); 5G / Cloud Edge (infrastructure) – 67%; Containers – 48%. However, the problem exists and its consequences are not reduced. Thus, there is a need to involve other approaches. Although, according to the survey (DELLTechnologies, 2020), 71% of respondents believe that new technologies create a greater complexity of data protection, while 61% state that they pose a risk to data protection. In our opinion, companies should pay attention to blockchain technology, which has proven itself to be effective in the financial sphere. This confirms the growth of investment in developers of corporate blockchain solutions, which in 2019 reached almost $434 mln, which is by 62% higher than the investment in 2018 (Ledger Insights, 2020). The analytical platform CB Insights identified 58 industries where blockchain can be used, including cybersecurity (CBINSIGHTS, 2020). Goldman Sachs experts believe that due to the introduction of this technology, the probability of cyber hacking is reduced during data transfer because blockchain provides for open registries, advanced cryptography methods, and has powerful cyber protection as compared to traditional systems (TADVISER, 2020). Since the team of authors believes in the prospects of using blockchain technology to increase the reliability of the cyber security system of enterprises, this study used a system-dynamic modeling of a system that uses blockchain technology and a traditional information system to compare their effectiveness.

2. LITERATURE REVIEW

Analysis of data from the Scopus database showed that the publication activity on the topic of cybersecurity has increased by 17.67 times over the past ten years, which indicates a growing interest in it. This trend is observed in scientific papers on blockchain technologies, which have been actively studied since 2016. Over the past four years, the number of publications on this topic has grown by 30.93 times, due to the emerging prevalence of this technology in various fields, especially Computer Science and Engineering. The authors have formed a bibliometric map using the VOSviewer software product (VOSviewer, 2020), which made it possible to analyze scientific studies that reveal the possibilities of using blockchain technology to solve cybersecurity problems. The map was built based on publications from the Scopus database on cybersecurity and blockchain.

It reflects 6 clusters of publications according to keywords (Figure 1). Scientists who consider issues related to blockchain and cybersecurity study them in conjunction with financial markets, cryptocurrencies, the Internet of things, and electronic money. They solve the problems of malware, data protection, authentication, and peer to peer networks that arise in these areas since they require powerful methods of information protection. The second cluster combines blockchain, cryptography, electronic data interchange, smart contracts, smart grid, smart power grid, and commerce, i.e. scientists focus on the software and technical aspect of blockchain technology and its implementation in the field of commerce. When analyzing other clusters, they highlight a wide range of technologies that are associated with the possibility of using blockchains in cybersecurity systems: artificial intelligence, deep learning, intrusion detection systems, machine learning, 5G mobile communications, big data, cloud computing, edge computing, etc.

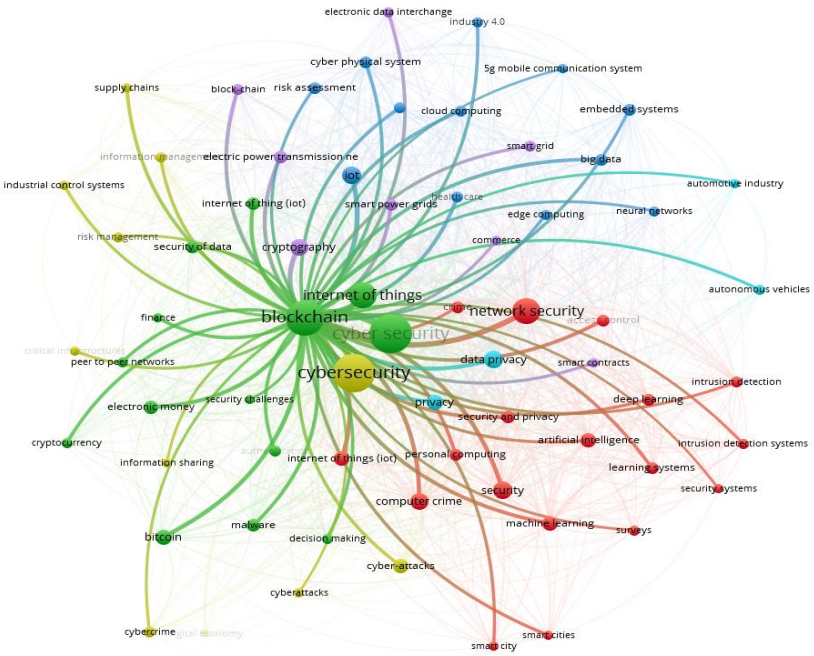

Figure 1: Bibliometric map based on keywords
(Source: original development)

Scientists study various aspects related to cybersecurity. The issue of digitalization of business processes is relevant, which contributes to increasing requirements for cybersecurity systems. This occurs under the impact of Industry 4.0 on entrepreneurship in developed and developing countries (Tapscott, Tapscott, 2016**;** Kendiukhov, Tvaronavičienė, 2017; Bilan et al., 2019b). It is also one of the main prerogatives of the state since the consequences of cybercrime affect the state's economic security system, which requires certain regulatory measures (Levchenko et al., 2019; Grenčíková et al., 2019). Some authors (Rios et al., 2018) condemn the rapid pace of digitalization and automation of companies, noting that this leads to the fact that such technologies turn into a factor that is destructive rather than integrating, and contributes to the emergence of new cyber threats for companies and states in general. Another group of authors (Bilan et al., 2019c; Grytsenko et al., 2010; Rubanov et al., 2019) highlights the relationship between the amount of funding and the level of development of information technologies. Since the need to ensure the reliability of the cybersecurity system is growing, there is a need for further improvement and development of investment mechanisms for projects such as the introduction of blockchain technology in the activities of companies (Levchenko et al., 2018; Sotnyk et al., 2020; Choo, et al., 2020).

One of the problematic aspects related to cybersecurity is the human factor, i.e. the participation of a person in the commission of a crime aimed at embezzlement, destruction or distortion of information. Researchers (Korablinova, 2017; Grytsenko, Vysochina, 2012; Berzin et al., 2018) note that today a human has become a part of a complex information system, which increases its intellectual capabilities towards unauthorized interference in the system. This idea is also supported by scientists (Bilan et al., 2019a; Pakhnenko et al., 2018). As indicated in the paper (Cosmulese et al., 2019), the digital revolution affects various aspects of life, including the level of people's awareness of cybersecurity issues. This impact, on the one side, is an incentive for the development of IT literacy, according to scientists (Vasylieva et al., 2017b), and on the other side, this will contribute to the emergence of new forms of cyber fraud, which is one of the threats. In the paper (Leonov et al., 2017), it is argued that the level of organization of information systems affects the level of development of the company. This leads to the fact that ERP-class systems in combination with artificial intelligence systems, Internet of things systems, cloud technologies, which corresponds to the level of a leading company, contribute to increasing the reliability of their cybersecurity system. This is also relevant for banking institutions that are faced with massive cyberattacks, social engineering; therefore, they are interested in developing modern anti-fraud means (Boiarko, Samusevych, 2011; Druhov et al., 2019; Vasylieva et al.). Thus , the use of modern mathematical methods (Lyeonov et al., 2019), new approaches to the development of modern engineering knowledge, creation and construction of databases and knowledge bases (Melnyk, 2017; Drescher, 2017), and methods for identifying IT risks (Semenova, Tarasova, 2017) are promising areas for solving this issue. This study, taking into account the experience of other authors, will consider the prospect of using blockchain technology to reduce the vulnerability of the company's information system and increase the reliability of the cyber security system.

3. RESEARCH METHODOLOGY

The method of system-dynamic modeling was chosen for the research. Its main advantage is the ability to model the behavior of systems at a high level, based on their information and logical structure and based on a data-flow approach. The research methodology includes the following stages:

- Stage 1 – development of a cause and effect diagram. For this purpose, the main elements of the system were identified: the intention of a person to commit cybercrime; influencing factors for increasing or decreasing cybercrime; human actions for committing cybercrime (unauthorized access, copying, destruction and modification of information, user errors, intentional non-preservation of information); recording data in the blockchain and database of a traditional information system; user features, company policies, and system vulnerabilities. Cause and effect relationships were established between the main elements, which, together with certain elements, formed the parameters of the system. A cause and effect relationship is positive if an increase (decrease) in the parameter affects the increase (decrease) of the parameter that is affected, or negative when an increase (decrease) in the parameter affects the decrease (increase) of the parameter that is affected.
- Stage 2 – development of the flow chart. At this stage, levels were identified, i.e. parameters that are influenced by a larger number of other parameters, taking into account the positive and negative effects. Special parameters were taken into account, i.e. those that cause the corresponding level to increase or decrease. Additional variables and constants were also used. For each variable was set an equation.
- Stage 3 – setting system parameters and test simulation. For this purpose, limit values are set for the initial parameters, which show the state of the system as a result of a person's intentions to commit cybercrime. The following parameters require changes: a ban on downloading information, a ban on opening and launching unknown files, a ban on the use

of external media, limited access, hardware errors, database openness, remote access. If the need arises, then the appropriate levels are debugged. Then the simulation is performed, resulting in a visualization of the system's behavior when there are potential intentions to commit cybercrime; the system's reactions are determined in the case of recording data in the blockchain and in the case of using a traditional information system. In the end, we get a result that shows the reaction of the system to its vulnerabilities in the case of using blockchain technology and a traditional information system.

4. RESULTS

System-dynamic modeling was performed in the Vensim environment, which is used for scientific purposes to implement this type of simulation (Ventana Systems, 2015). As a result, a cause and effect diagram (Figure 1) was constructed, which reflects the logic of the functioning of flows between the elements of the system.

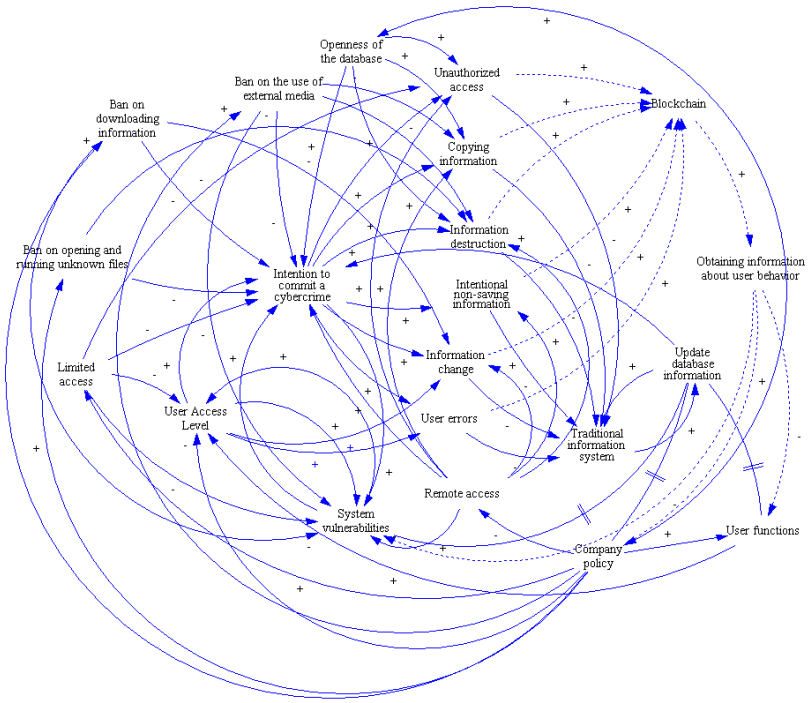

Figure 2: Cause and effect diagram
(Source: original development)

The main element is the "intention to commit cybercrime". The state of this element is affected by the following factors: a ban on downloading information, a ban on opening and running unknown files, a ban on using external media, restricted access, the level of user access, database openness, and remote access. Depending on the state of these factors, the intention may increase if the user is aware of the absence of such prohibitions, or has unlimited access rights, etc. The intention may decrease in cases where the company has a high level of protection, establishes various prohibitions, grants access rights in accordance with the functional responsibilities of the employee, etc. The model assumes that a cybercriminal intends to steal information by copying it, or destroy data or change information, or perform intentional non-saving, unauthorized access, or distort information by making errors. These activities are selected as the most popular illegal actions that contribute to the emergence of vulnerabilities of a system and reduce the level of its cybersecurity. If the blockchain technology is implemented in the company, it provides that all actions are recorded in the blockchain and are not subject to any changes.

Accordingly, using an artificial intelligence system, blockchain data can quickly provide information about user behavior and, as a result, detect violations. The model assumes that the recording occurs in a traditional information system, but if the information is updated, the recording in the system may not be saved. The cybersecurity system will need quite a long time to check activity logs to detect violations. Depending on the results, the company's policy, user functions, and the state of system vulnerabilities are changed, which affects the intention to commit cybercrime. At the second stage, a flow diagram was obtained (Figure 3), which was constructed using the mathematical apparatus represented by a system of equations (formula 1). The notation for the variables from the system of equations is signed for each element in the figure 3.

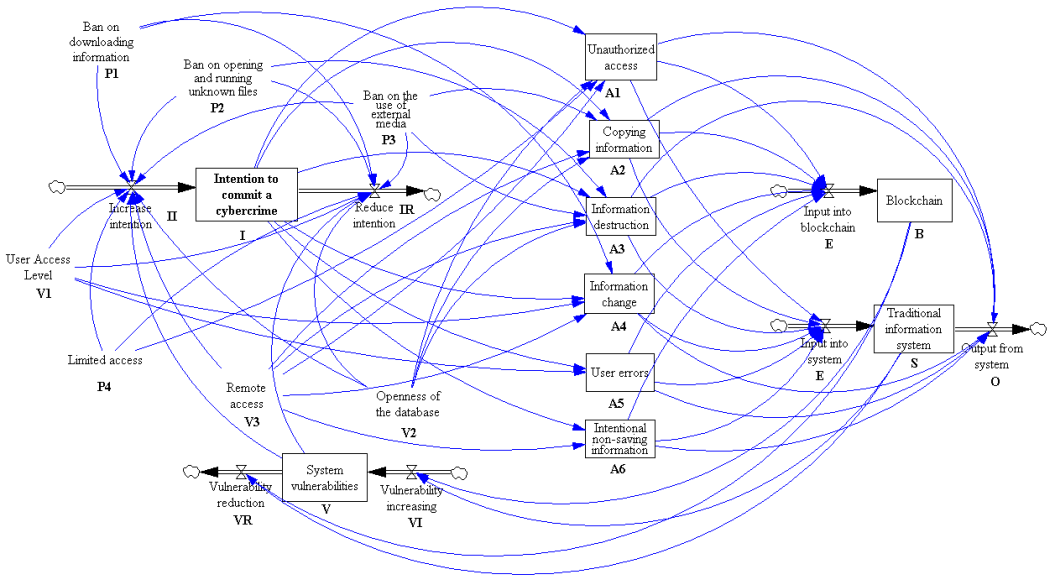

Figure 3. Flow chart
(Source: original development)

$$
\begin{cases}
\frac{dI}{dt} = \left(II(t) - IR(t)\right)|_{II(t)>IR(t)} \vee \frac{dI}{dt} = \left(IR(t) - II(t)\right)|_{IR(t)>II(t)} \\
II(t) = \dfrac{1}{1 + EXP\left(-\left(0.50288 - 2.75474 * (P_1 + P_2 + P_3 + P_4) + 4.8164 * (V(t) + V_1 + V_2 + V_3)\right)\right)} \\
IR(t) = 1 - II(t) \\
A_1(t) = 1 \,|_{V_2 \geq 0.5 \,\vee\, V_3 \geq 0.5 \,\vee\, P_4 < 0.5 \,\vee\, I(t) \geq 0.5} \vee A_1(t) = 0 \,|_{V_2 < 0.5 \,\vee\, V_3 < 0.5 \,\vee\, P_4 \geq 0.5 \,\vee\, I(t) < 0.5} \\
A_2(t) = 1 \,|_{P_3 < 0.5 \,\vee\, V_2 \geq 0.5 \,\vee\, V_3 \geq 0.5 \,\vee\, I(t) \geq 0.5} \vee A_2(t) = 0 \,|_{P_3 \geq 0.5 \,\vee\, V_2 < 0.5 \,\vee\, V_3 < 0.5 \,\vee\, I(t) < 0.5} \\
A_3(t) = 1 \,|_{P_2 < 0.5 \,\vee\, P_3 < 0.5 \,\vee\, V_2 \geq 0.5 \,\vee\, V_3 \geq 0.5 \,\vee\, I(t) \geq 0.5} \vee A_3(t) = 0 \,|_{P_2 \geq 0.5 \,\vee\, P_3 \geq 0.5 \,\vee\, V_2 < 0.5 \,\vee\, V_3 < 0.5 \,\vee\, I(t) < 0.5} \\
A_4(t) = 1 \,|_{P_1 < 0.5 \,\vee\, V_1 \geq 0.5 \,\vee\, V_3 \geq 0.5 \,\vee\, I(t) \geq 0.5} \vee A_4(t) = 0 \,|_{P_1 \geq 0.5 \,\vee\, V_1 < 0.5 \,\vee\, V_3 < 0.5 \,\vee\, I(t) < 0.5} \\
A_5(t) = 1 \,|_{I(t) \geq 0.5 \,\vee\, V_1 \geq 0.5} \vee A_5(t) = 0 \,|_{I(t) < 0.5 \,\vee\, V_1 < 0.5} \\
A_6(t) = 1 \,|_{I(t) \geq 0.5 \,\vee\, V_3 \geq 0.5} \vee A_6(t) = 0 \,|_{I(t) < 0.5 \,\vee\, V_3 < 0.5} \\
E(t) = A_1(t) + A_2(t) + A_3(t) + A_4(t) + A_5(t) + A_6(t) \\
\frac{dB}{dt} = \left(\frac{1}{2} + \frac{1}{2} * \left[\frac{1}{6} * E(t)\right]|_{E(t) \geq 2}\right)|_{E(t) \geq 1} \vee \frac{dB}{dt} = 0 \,|_{E(t) < 1} \\
O(t) = A_1(t) + 4 * A_2(t) + 2 * A_3(t) + 3 * A_4(t) + 5 * A_5(t) + 6 * A_6(t) \\
\frac{dS}{dt} = \left(\frac{1}{4} + \frac{1}{4} * \left[\frac{1}{6} * O(t)\right]|_{E(t) \geq 2}\right)|_{E(t) \geq 1} \vee \frac{dS}{dt} = 0 \,|_{E(t) < 1} \\
\frac{dV}{dt} = \left(VI(t) - VR(t)\right)|_{VI(t)>VR(t)} \vee \frac{dV}{dt} = \left(VR(t) - VI(t)\right)|_{VR(t)>VI(t)} \\
VI(t) = 1 \,|_{B(t)>0.5 \,\vee\, S(t)>0.5} \vee VI(t) = 0 \,|_{B(t) \leq 0.5 \,\vee\, S(t) \leq 0.5} \\
VR(t) = 1 \,|_{B(t) \leq 0.5 \,\vee\, S(t) \leq 0.5} \vee VR(t) = 0 \,|_{B(t)>0.5 \,\vee\, S(t)>0.5} \\
P_1, P_2, P_3, P_4, V_1, V_2, V_3 \in [0,1]
\end{cases}
\tag{1}
$$

The flow diagram allowed the simulation to be performed. For this purpose, the values of the initial parameters were changed and their 128 combinations of limit values were taken. The values for the parameters (a ban on downloading information, a ban on opening and running unknown files, a ban on the use of external media, restricted access) were equal to 1 if there are bans and restrictions in the company, or 0 if there are none. The value for user access level, database openness, and remote access was 1 if these parameters are typical for the system, and 0 if these parameters are missing. The simulation occurred at the same time interval. As a result, 128 cases of system behavior were collected for using blockchain technologies and a traditional information system. The result of the simulation is shown in Figure 4.

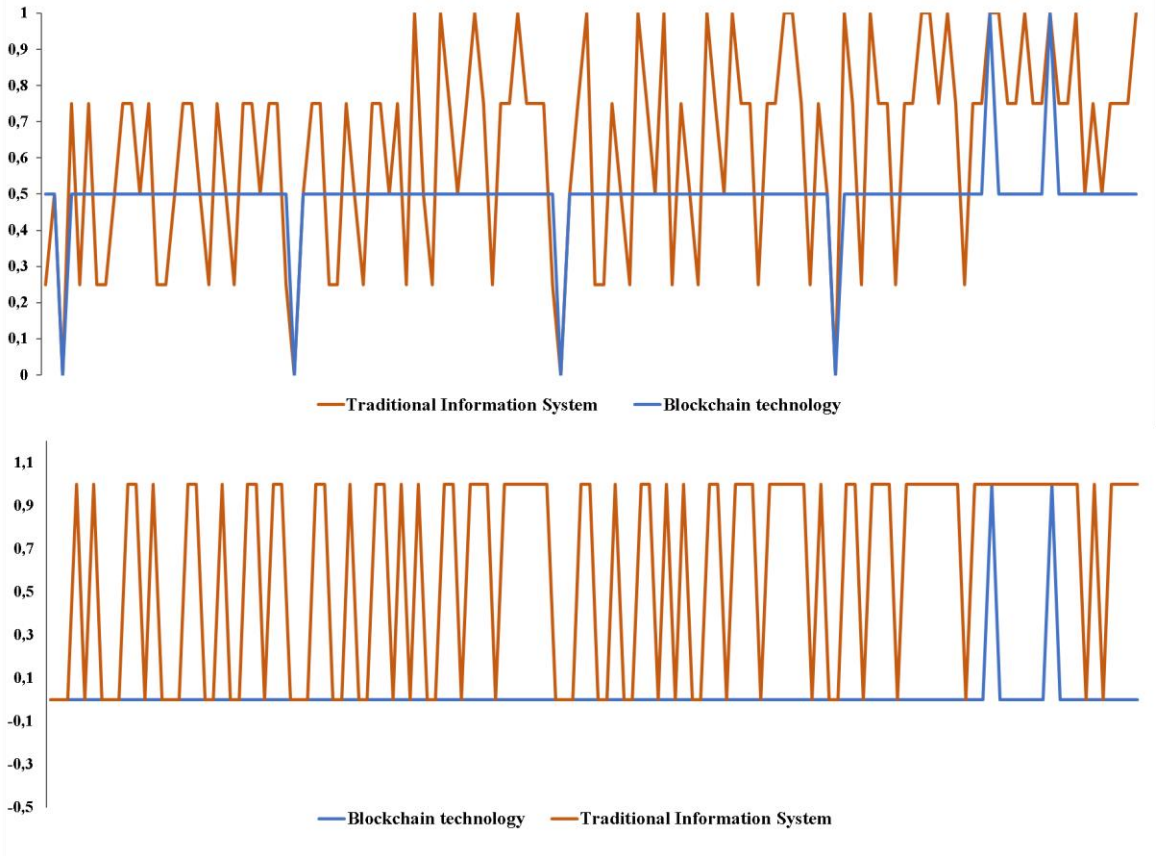

Figure 4: Results of simulation
(Source: original development)

The upper graph of Figure 4 shows the level of risk that is determined by a system that uses blockchain technology and a traditional information system. According to the implemented method, if the value approaches 0, the risk of not detecting cybercrime activity is lower; if the value approaches 1, the risk is higher. Thus, in almost all cases, a system using blockchain technology has a lower risk level than a traditional information system. The cases where both systems have a risk level equal to 1 are cases where the company does not establish a ban, provides unlimited access to users, i.e. this is an option when all security measures are missing. Accordingly, in this case, no technology can positively affect the cyber security system. The lower graph in Figure 4 shows the impact of the identified data on system vulnerabilities. A value of 0 indicates a decrease in vulnerabilities, and 1 indicates an increase in vulnerabilities. In other words, the use of blockchain technology will reduce the vulnerability of the system in almost most cases, and the use of a traditional information system only in some cases. As a conclusion, the use of blockchain technology is more effective than traditional databases, which will positively affect the reliability of the company's cyber security system.

5. CONCLUSION

Thus, the problems associated with the violation of the reliability of cybersecurity systems are relevant. The consequences may be the loss of financial resources, customer trust, and reduced reputation and competitiveness. Therefore, cyber security experts must respond in a timely manner in the event of new types of cyber threats or an increase in the likelihood of vulnerabilities in the system. There are no unique tools that can fully solve cyber security problems. Thus, it should be a set of measures that will contribute to the effectiveness and reliability of the defense system. Most companies increase their investment in the use of modern technologies, which is condemned by some experts. In our opinion, this is the right approach, because the increase in the volume of information, the level of human awareness in the use of modern technologies and devices require new and non-standard approaches. The blockchain technology is being increasingly used and its scope of application is expanding. Therefore, there is a fairly good prospect of using it to increase the level of reliability of the cyber security system in enterprises. The system-dynamic modeling allows making assumptions about the advantages of this technology over traditional information systems. First, this technology will not replace the existing one but will complement it, since its main prerogative is to store information in its original form without changes, which will allow detecting deviations when trying to implement changes. In the future, it is planned to expand the proposed model by taking into account other parameters: to increase the number of activities, especially by external users; to take into account the impact factors at the level of recording data in the blockchain and in the traditional database.

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SUSTAINABILITY ACCOUNTING & REPORTING ASSESSMENT SYSTEM: ROLE IN INDEPENDENT VERIFICATION FOR STAKEHOLDERS INTERESTS

Niyazi Ismayilov
Azerbaijan State University of Economics (UNEC)
Baku, Istiqlaliyyat str., 6, 1001, Azerbaijan
niyazi_ismayilov63@mail.ru

Inna Makarenko
Sumy State University
Sumy, Rymskogo-Korsakova str., 2, 40000, Ukraine
i.makarenko@uabs.sumdu.edu.ua

Serhiy Makarenko
Sumy State University
Sumy, Rymskogo-Korsakova str., 2, 40000, Ukraine
s.makarenko@i.ua

ABSTRACT

Sustainability accounting and reporting assessment system of companies, banks, and other reporting organizations plays a crucial role in verifying such systems by auditors to provide stakeholders with transparent information to make not only economic but also social and environmental decisions. In connection with this, research into the current practice of compiling, presentation, assessment, and verification of management reports as a form of social and environmental reporting in Ukraine has been conducted. The basis for the evaluation of these reports is a set of substantive, formal, and verification criteria. The peculiarity of the assessment is to establish the compliance of conceptual bases for the preparation of the management report in Ukraine (Law of Ukraine "On securities and stock market", Law of Ukraine "On accounting and financial reporting", Methodological recommendations for preparing management report by the Ministry of Finance of Ukraine, Instructions on preparation of the financial statements by banks of Ukraine of the National Bank of Ukraine) with European and world practice. The EU benchmarks have selected from the substantive criteria for the management report set out in Directive 2013/34 / EU of the European Parliament and of the Council of 26 June 2013 on the annual financial statements, consolidated financial statements and related reports of certain types of undertakings, Directive 2014/95 / EU of the European Parliament and of the Council of 22 October 2014 amending Directive 2013/34 / EU as regards the disclosure of non-financial and diversity information by certain large undertakings and groups and EU Guidelines 2017 / C215 / 01. Practice Statement Management Commentary: A framework for presentation and methodology of the International Council for Integrated Reporting has been selected as internationally recognized sources for assessment of the management report.

Keywords: *Assessment, Stakeholders, Sustainability reporting, Verification*

1. INTRODUCTION

Sustainability reporting assessment is an important step for auditors in its verifying for stakeholders. Providing auditors with confidence in this reporting reliability, quality and compliance with the regulatory requirements is the basis for making sound economic decisions by different groups of stakeholders. One of the forms of sustainability reporting in Ukraine is the management report.

Management report appeared in Ukraine in 2018 in view of the European integration vector of the national accounting and auditing system. As a form of sustainability reporting, this report contains not only a reliable overview of the development, activities and condition of the reporting entity, the main risks and uncertainties it faces, but also non-financial indicators, including environmental and social information. Including interests of stakeholders and the dimensions of sustainable development into the companies' communication with stakeholders in the light of corporate social responsibility are covered in detail in the works of Bilan, Yu. et al. (2019), Kasych, A ., Vochozka, M. (2017), Kendiukhov, I., Tvaronaviciene, M. (2017), Leonov, S.V. et al. (2017), Myroshnychenko, Iu. et al. (2019), Strojny, J., Jedrusik A. (2018), Petrushenko, Y. (2013), Bhandari, M.P., Bhattarai, K. (2017), Bonamigo, A., Mendes, D. (2019), Grencikova, A., Bilan, Y., Samusevych, Y., Vysochyna, A. (2019), Hrytsenko, L.L., Vysochyna, A.V. (2012), Bhandari, M.P. (2019), Pakhnenko, O., Liuta, O., Pihul, N. (2011), Vargas-Hernández, J.G., Orozco-Quijano, E.P., Virchez, J. (2018), Wang, F., Lo, J., Lam, M. (2020), Tommaso, F.D., Gulinelli, A. (2019). Caputo, F., Leopizzi, R., Pizzi, S., Milone, V. (2019), Krivačić, D. (2017), Manes-Rossi, F., Tiron-Tudor, A., Nicolò, G., Zanellato, G. (2018), Truant, E., Corazza, L., Scagnelli, S.D.(2017), Dlaskova, G., Cipovova, E. (2018), Grigoroi, L., Muntean, N. (2019) demonstrate the focus on the European context of research and translation of EU practice in compiling, presenting and sustainability reporting assesment. Accounting and reporting issues in sustainability context reviled in studies by Al-Khonain, S., Al-Adeem, K. (2020), Boyarko, I.M., Samusevych, Y. V. (2011), Kasztelnik, K., Gaines, V.W. (2019), Vegera, S., Malei, A, Romanova, O., Sushko, V (2018), Zadorozhnyi, Z.M., Yasyshena, V. (2019a), Zadorozhnyi, Z.M., Yasyshena, V. (2019b), Zimon, G., Chlodnicka, H. (2019). The issue of sustainability reoprting submission and assesment in the context of the Ukrainian experience is revealed in the works of Makarenko, I., Sirkovska, N. (2017), Vasilieva, T. et al. (2017), Vasilieva, T., Makarenko, I. (2017), Vasyl'eva, T. A., Leonov, S., Makarenko, I. (2017). The current study is a continuation of this paper series devoted sustainability reporting in Ukraine, taking into account the emergence of its new form. At the same time, in the given works the detailed attention is not paid to the substantial requirements which put forward to the sustainability reporting and the management report as its form in Ukraine. These requirements are derived from numerous normative documents of the European and international origin. In connection with this, research into the current practice of compiling, presentation, assessment, and verification of management reports as a form of social and environmental reporting in Ukraine has been conducted. The basis for the evaluation of these reports is a set of substantive, formal, and verification criteria. The very definition of a single list of such criteria is a priority for the verification of the management report as a form of sustainable development reporting by auditors. This is especially true of the content criteria that form the structural and logical basis for compiling the report and disclosing social and environmental issues in it..

2. UKRAINIAN EVIDENCE OF SUSTAINABILITY REPORTING ASSESMENT

Despite the short history of compiling and submitting (published by reporting entities for the 2018 and 2019 financial years), a significant number of regulations regulates the management report. Among them are: Law of Ukraine "On accounting and financial reporting", Law of Ukraine "On securities and stock market", Methodological recommendations for preparing management report by the Ministry of Finance of Ukraine, Instructions on preparation of the financial statements by banks of Ukraine by National Bank of Ukraine. The first document introduces the concept of management report into the accounting terminology, gives its definition and provides a range of reporting entities, the other three - form a list of substantive and formal criteria for its preparation and submission (see table 1).

Methodological recommendations for preparing management report by the Ministry of Finance of Ukraine (07.12.2018 № 982)	Instructions on preparation of the financial statements by banks of Ukraine by National Bank of Ukraine (24.10.2011 № 373)	Law of Ukraine "On securities and stock market" (23.02.2006 № 3480-IV)
Organizational structure and description of the enterprise activity	The nature of the business Management goals and strategies to achieve these goals	Information on the issuer's development
Performance results Development prospects	Results of activity and prospects of further development	Probable prospects for further development of the issuer
Financial investments	-	Information on the derivatives
Liquidity and liabilities Risks	Resources, risks and relationships	Issues and policy of the issuer on financial risk management, information on the issuer's exposure to price risks, credit risk, liquidity risk and / or cash flow risk
Corporate governance (for issuers)	Relations with shareholders and related parties	Corporate governance report
Environmental aspects Social aspects and human resources policy Respect for human rights Measures to prevent corruption and bribery	Non-financial indicators (Banks with an average number of employees exceeding 500 as of the reporting date, in addition to economic, environmental and social aspects, are required to disclose employment, respect for human rights, and the preventing corruption)	-
Research and innovation	Activities in the field of research and development	-
-	Key performance indicators	-

Table 1: Substantive criteria of management report presentation in Ukraine (Source: developed by authors)

As already mentioned, the formation of substantive criteria single list is extremely important for auditors when they verifying sustainability reporting in the interests of stakeholders. However, in Ukraine, the development of such common criteria is complicated by duplication of requirements of different Ukrainian regulators: the Ministry of Finance, the National Bank (NBU) and the National Commission on Securities and Stock Market (NCSSM). Reporting entities that are issuers of securities, in fact, must prepare a management commentary (under Article 40 of the Law "On Securities and Stock Market") and a management report (under the Law "On Accounting and Financial Reporting in Ukraine"). In general, Ukrainian reporting entities must compile this report on three different sets of requirements - according to the requirements of the NBU as entities controlled by this regulator, according to the requirements of the NSSMC as issuers of securities, according to the requirements of the Ministry of Finance for reporting to statistics.

A comparative analysis of the requirements for the preparation of the management report, containing Methodological recommendations for preparing management report by the Ministry of Finance of Ukraine, Instructions on preparation of the financial statements by banks of Ukraine, Law of Ukraine "On securities and stock market" allowed to draw the following conclusions:

- first, the most comparable requirements concern the objectives, description of activities, information on the development and prospects of the reporting entity, as well as coverage of information about its risks (price, credit, liquidity, cash flow, etc.), exposure to these risks, hedging policy and their management) and elements of corporate governance;
- secondly, the structured presentation of information about the reporting entity on key performance indicators is contained only in the requirements of the Instruction on the preparation of financial statements by banks of Ukraine;
- third, information on financial investments (derivative financial instruments) in the context of their impact on the activities of the reporting entity combines approaches to the disclosure of information in the management report of the Ministry of Finance of Ukraine and the NSSMC;
- fourth, information on research and innovation and a number of non-financial indicators are required for disclosure by both the Methodological recommendations for preparing management report and the Instruction on the preparation of financial statements by banks of Ukraine. However, neither social nor environmental and other aspects are required in the preparation of the management commentary in accordance with the Law "On Securities and Stock Market".

Thus, auditors should be guided by a mixed set of substantive criteria when evaluating and verifying a management report in Ukraine, which complicates their work.

3. EUROREAN VS UKRAINIAN EVIDENCE OF SUSTAINABILITY REPORTING ASSESMENT

Analysis of the reasons for such a mixture of substantive criteria allows us to conclude that the rules for compiling a management report were implemented by different regulators at different times. The first requirements for the management reporting preparation were developed for issuers in the context of corporate governance reform in Ukraine and appeared in the Law "On Securities and Stock Market" after the adoption of Directive 2013/34 / EU. Model documents for the implementation of the management report in the general practice of other reporting entities and its assessment were Directive 2013/34 / EU of the European Parliament and of the Council of 26 June 2013 on the annual financial statements, consolidated financial statements and related reports of certain types of undertakings and Directive 2014/95 / EU of the European Parliament and of the Council of 22 October 2014 amending Directive 2013/34 / EU as regards the disclosure of non-financial and diversity information by certain large undertakings and groups after the signing of the Ukraine-EU Association Agreement in 2014. Further step was harmonization of national and European reporting practices with amendments to the Law "On Accounting and Financial Reporting in Ukraine", Instructions on the preparation of financial statements of banks of Ukraine and the development of Guidelines for the preparation of the management report in 2018. The requirements contained in these Directives provide a conceptual framework for the assessment and verification of sustainability reporting for stakeholders of Ukrainian companies and their auditors. The structure of these reporting in accordance with Directive 2013/34 / EU and Directive 2014/95 / EU may include:

1) management report (in accordance with the requirements of Directive 2013/34 / EU, medium and small companies may be exempted from social and environmental disclosures):

- probable prospects for further development;
- activities in the field of research and development;
- information on the acquisition of own shares; presence of branches;
- the use of financial instruments and, if material for the measurement of its assets, liabilities, financial position and profit or loss:
- the entity's objective and policy for managing its financial risks, including its hedging policy for each major type of forecast transaction, including risk risks such as price risk, credit risk, liquidity risk and cash flow risk to which the entity is exposed;

2) non-financial report (according to Directive 2014/95 / EU large undertakings which are public-interest entities exceeding on their balance sheet dates the criterion of the average number of 500 employees during the financial year shall include in the management report a non-financial statement containing information to the extent necessary for an understanding of the undertaking's development, performance, position and impact of its activity, relating to, as a minimum, environmental, social and employee matters, respect for human rights, anti-corruption and bribery matters, including)
   - description of the business model;
   - description of the policy, incl. implementation of the due diligence process on these aspects: environmental, social, employment, respect for human rights, the fight against corruption and bribery;
   - key non-financial indicators.
3) corporate governance report (according to the requirements of Directive 2013/34 / EU is included in the management report of listed companies)
   Details of non-financial disclosure requirements are contained in the Guidelines on non-financial reporting (methodology for reporting non-financial information) C / 2017/4234. Key performance indicators are the basis for the disclosure of non-financial information both on the above thematic aspects (material narratives and indicator-based disclosures of environmental, social, employment, respect for human rights, anti-corruption and bribery) and other aspects (supply chains, mineral resources from conflict zones). The guide emphasizes that key performance indicators are considered to be effective tools that link quantitative and qualitative information about a reporting entity. In our opinion, they are able to provide a balanced and comprehensive overview of its activities in the most effective way for its assessment by auditors. A comparative analysis of these European requirements with the requirements of national regulations on the substantive criteria for management report should be presented as follow:

- Ukrainian normative documents primarily transpose the norms of these European documents in a fragmentary and distorted way, duplicating the numerous requirements of different regulators and combining three separate reports: management report, non-financial report and corporate governance report;
- at the same time, none of the Ukrainian normative documents provides such a detailed presentation of possible key performance indicators as Guidelines on non-financial reporting (methodology for reporting non-financial information). We believe that the existing Ukrainian requirements for assessment sustainability reporting should be specified and systems of such indicators should be described and applied by reporting entity.

4. INTERNATIONAL VS UKRAINIAN EVIDENCE OF MANAGEMENT REPORTING ASSESMENT

4.1. Practice Statement Management Commentary: A framework for presentation

In addition to the model standards for Ukrainian regulators (Directive 2013/34 / EU and Directive 2014/95 / EU), the International Accounting Standards has developed a Practice

Statement Management Commentary: A framework for presentation, which in view of Ukraine's adoption of IFRS can also be used in preparing the management report. The structure of the management report in accordance with the Practice Statement Management Commentary: A framework for presentation provides information on such aspects of the company as:

- nature of business;
- management goals and ways to achieve them;
- results of activity and prospects of the company;
- the most important risks, resources and relationships of the enterprise;
- the main indicators and ratios that management uses to assess performance in relation to the stated goals.

The comparison of the structure of management commentary with the requirements for the management report of Ukrainian regulators (Table 1) shows their significant similarity, except for the emphasis on non-financial aspects and detail on performance indicators. Such indicators are provided only in the Instruction on preparation of financial statements of banks of Ukraine.

4.2. The <IR> Framework

The management report is quite similar in content and formal criteria to the integrated report prepared by global companies since 2011 according to the approaches of the International Integrated Reporting Council.

Key elements of such an integrated report include the following:

- review of the organization and the external environment;
- management;
- business model;
- risks and management;
- strategy and allocation of resources;
- results of activities;
- prospects for the future;
- basic principles of preparation and presentation.

A comparison of the integrated report structure with the requirements for disclosure of substantive aspects in the report on the management of Ukrainian regulators (Table 1) shows their significant similarity with the exception of the element "Basic principles of preparation and presentation". However, integrated report is characterized by mutually agreed disclosure of these substantive aspects in the context of the reporting entity's creation of new value for stakeholders. This fact unequivocally distinguishes the Ukrainian management report and integrated report.

5. CONCLUSION

The paper conducted a comparative analysis of Ukrainian, European and international practice of compiling and assessment a management report as a form of sustainable development reporting in the context of its verification by auditors to meet the information needs of stakeholders. Concerning Ukrainian documents, the search for substantive criteria was carried out among Law of Ukraine "On securities and stock market", Law of Ukraine "On accounting and financial reporting", Methodological recommendations for preparing management report by the Ministry of Finance of Ukraine, Instructions on preparation of the financial statements by banks of Ukraine of the National Bank of Ukraine Directive 2013/34 / EU, Directive 2014/95 / EU of and EU Guidelines 2017 / C215 / 01 were chosen as a model European documents.

The results of the analysis allow us to conclude that the Ukrainian requirements for management report are similar to the European ones. However, to improve the quality of assessment and compliance of sustainability reporting in general and the management report in particular, the following measures need to be taken:

- eliminate fragmentation and duplication of requirements of various Ukrainian regulators for the preparation of the management report, non-financial report and corporate governance report;
- give the clear structure the presentation of information in the management report on key performance indicators as required by European approaches and in particular Guidelines on non-financial reporting (methodology for reporting non-financial information);

Consideration of the internationally recognized conceptual framework for the preparation and assessment of sustainability reporting (Practice Statement Management Commentary: A framework for presentation, The <IR> Framework), in addition to the European Directives implemented in Ukraine, allows us to conclude that similar information is disclosed. This can significantly expand the ways in which sustainability reporting in general and the management report of Ukrainian reporting entities are presented and published. In particular, eliminating the fragmentation and duplication of requirements of different Ukrainian regulators for management report, non-financial report and corporate governance report, combination of substantive criteria for preparation of management report for Ukrainian requirements and requirements The <IR> Framework will allow them to submit and verify sustainability reports in one of the most progressive formats - in the integrated. This will have a positive effect on the communication of reporting entities with stakeholders.

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THE IMPACT OF FINANCIAL CRISIS ON THE PERFORMANCE OF LARGE CROATIAN BANK

Ante Roncevic
Associate Professor at University North,
Trg dr. Žarka Dolinara 1, 48000 Koprivnica, Croatia
aroncevic@unin.hr

Marina Gregoric
Assistant Professor at University North,
Trg dr. Žarka Dolinara 1, 48000 Koprivnica, Croatia
magregoric@unin.hr

Dajana Maria Horvat
University North,
Trg dr. Žarka Dolinara 1, 48000 Koprivnica, Croatia
damahorvat@unin.hr

ABSTRACT

Great significance for each company and its management is to analyze its business. In order to succeed and survive on the market, companies must adapt to the market conditions. The analysis of financial statements precedes the planning process, which is an integral part of the enterprise management process. In order to carry out a successful analysis of the financial statements, it is necessary to know the business of the company and policies this undertaking applies. The financial plan must reflect on its weaknesses and its strengths, and the task of analyzing the financial statements is to recognize them. The analytical means and procedures used in the analysis of financial statements are comparative financial statements, structural financial statements, analysis using indicators, and specialized analyses. The information used by the company in the analysis must be timely and precise; otherwise, the company will not be able to use the information well. The information obtained by the analysis is most important to creditors, investors, managers, and auditors. The subject of this paper is the analysis of the financial statements of the Privredna Banka Zagreb using the balance sheet and income statements from 2008 to 2018. The analyzed data are secondary and are available on the official website of the PBZ Bank and Zagreb Stock Exchange. The methods used in this paper are the method of synthesis, analysis, desk research, and the historical method. The goal is to determine the security and performance of the bank in the past 11 years when the bank faced the financial crisis that has ruled the market. The balance sheet and income statement accounts of the banks differ from other entities, therefore they need to be analyzed accordingly.

Keywords: *financial analysis, PBZ, security, performance, financial crisis*

1. INTRODUCTION

The analysis of financial statements is an integral part of the business analysis, i.e. The analysis is a broader term than the analysis of financial statements because it encompasses an analysis of the environment, strategy, financial position, and quality of business (Žager et al., 2008). The most important in the analysis are financial indicators, so we are talking about individual, common, indicator systems, and aggregate indicators. According to time dimension, one set of indicators is the one that includes the consideration of a company's business within a specified period and is based on data from the income statement. In contrast, the second group of indicators relates to a specific moment that coincides with the moment of compiling the balance sheet and explains the financial position of the company at that moment (Gregorić, 2018).

The most frequent users of financial information are investors who can be viewed in a narrow and broader sense. In the narrow sense, they represent potential investors in the company, while on the broader part, shareholders are involved. Investors are interested in the "health" of companies and profitability and need financial information to evaluate the current and future financial strength of the company, and therefore the security of their investments (Žager et al., 2008). Banks are specific to other economic operators, and the classification differs from other entities. The view of the financial statements of banks is different from other entities, primarily due to the nature of the banking business, i.e., their specific business. It is known that the bank receives deposits from the broadest public, and according to the Law on credit institutions, It is determined that banking services are receiving deposits or other repayable funds from the public and granting credits from these funds, and for their account. Just the aforementioned collection of deposits comes to the fore in the passive balance sheet. The bank is to collect deposits as a basic but not only source of financing and it may collect funds for further loans received from financial institutions and other loans, but also by the emission of short-and long-term securities (žager i sur., 2017). Although banks are given preferential status due to the specifics of their business, they are under the strict supervision of the Croatian National Bank and other institutions.

2. PRIVREDNA BANKA ZAGREB D.D.

Privredna banka Zagreb (PBZ) is a joint-stock company, with headquarter located in Zagreb, capital of Croatia. It was founded in 1966, and today it is at the top of the banking sector in the Republic of Croatia. Throughout history, it has been the bearer of major investments in the development of all industries, from tourism, shipbuilding, agriculture, electrical industry, production, and others. The privatization of PBZ completed in 1999. Furthermore, the new majority shareholder became Banca Commerciale Italiana with 66.3 percent of shares, while the state agency for the insurance and resolution of harmful roles had a 25-percent stake. As Banca Commerciale Italiana became an integral part of Gruppo Intesa, the leading Italian financial group, and one of Europe's largest banking groups, PBZ became the component of the same group. In the year 2002, the European Bank for Reconstruction and Development has acquired a small part of ownership. By merging the Bance Intesa and Sanpaolo IMI, 2007, Privredna banka Zagreb becomes a member of the Intesa Sanpaolo Group (https://www.pbz.hr/gradjani/o-nama/o-banci.html). In the year 2000, the PBZ is annexed to the Krapinsko-Zagorska banka, while during 2002, minority share (20.88%) is acquired by the European Bank for Reconstruction and Development (EBRD). Riadria Bank is annexed in 2004, Laguna Bank 2005, and in 2012 Međimurska banka. In January 2006, the PBZ and PBZ American Express were integrated into a new company called PBZ Card Ltd., which is now the leading card institution in the country. Today, PBZ is a center of excellence for many areas of banking business in Intesa Sanpaolo Group, and has recently become a regional center, by the acquisition of subsidiary banks in Bosnia and Herzegovina and Slovenia. In 2015 there was a takeover of the majority stock package of Intesa Sanpaolo banka d.d. Bosnia and Hercegovina, while in 2017, 51% of equity capital of the bank Intesa Sanpaolo D.D. in Slovenia, and in 2018 takes over the Veneto bank d.d. (https://www.pbz.hr/gradjani/o-nama/o-banci/povijest-i-razvoj.html). PBZ is focused on modern forms of banking operations and modern European banks that follow the demands of markets and clients. It is also important to note that it has been awarded many domestic and international awards due to its quality business, and with 221 branch covers the entire territory of the Republic of Croatia. Today, there is a branch office of PBZ in almost all cities in Croatia. Some of the awards awarded to Privredno banka Zagreb are the Euromoney Awards for 2001, 2002, 2004, 2005, 2007, 2008, 2009, 2013, 2014, 2015 and in 2016 as the best bank in the Republic of Croatia, and in 2006 the Euromoney Commission awarded the Euromoney Awards for Excellence for the best Debt House in Croatia Award.

The US financial magazine Global Finance declared it the best for business years from 2003 to 2018 Central European proclaimed in 1999 the best bank of the decade in the Republic of Croatia, and the Banker awarded PBZ a prize for the Bank of the year in 2005, 2011. Moreover, in 2013, the bank was given an Award for market capitalization, and investment funds, and the best financial share was awarded to PBZ during 2003, 2004, 2005 and in 2006 for the previous fiscal years, as well as many other prizes (https://www.pbz.hr/gradjani/o-nama/o-banci/nagrade.html). Some of the activities that the bank can perform are receiving deposits and other repayable funds from the public, granting loans and loans, redemption of claims with recourse and without it, financial lease, issuing of guarantees, trading for the bank or client account, payment services, safety deposit boxes, mediation in the conclusion of transactions in the monetary market and others. The subscribed capital is paid in full, and amounts to 1,907,476,900.00 kunas, and is divided into 19,074,769 shares of which each has a nominal value of 100.00 kunas (https://www.pbz.hr/gradjani/o-nama/o-banci/sjediste-i-osnovni-podaci.html).

3. FINANCIAL ANALYSIS

Indicators are relative numbers obtained by placing in the relationship of at least two accounting categories, and the aim is to examine the financial situation and the performance of the observed company. We observe the indicators as carriers of the information needed to manage the development and operation of the company. The indicators relate to the balance sheet, while others relate to the profit and loss account (Žager et al., 2008). Concerning other economic entities, banks have different indicators. The analysis of financial statements divides the indicators related to the bank in five groups. The indicator groups are indicators of relations in the bank balance sheet, relationship indicators in the profit and loss account, average interest rate indicators, interest margin indicators, and profitability indicators. We may also divide these groups into sub-groups. Thus, the group of relationship indicators in the bank balance are divided into bank liquidity indicators, bank indebtedness indicators and investment indicators in fixed assets, then the indicators are divided into the profit and loss indicators on the cost-effectiveness and indicators of non-interest activities, and the profitability indicators are divided into the indicators of return and margins and average interest rates (Žager et al., 2017)

3.1. Relationship indicators in the balance sheet

The indicators in the bank's balance sheet show the security of business, i.e., its financial position. As previously mentioned, the relationship indicators in the balance sheet are divided into liquidity indicators, indebtedness indicators, and fixed asset indicators (Žager et al., 2017).

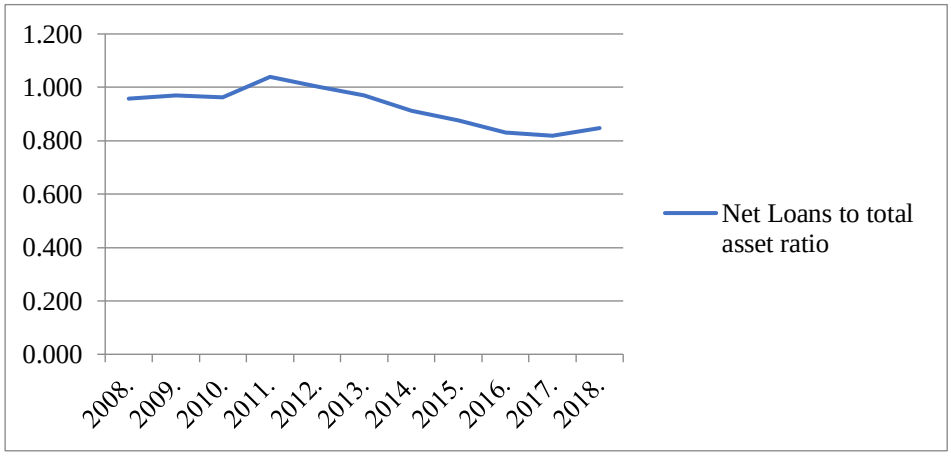

Chart 1: Indicator of loans and received deposits
(Source: Author's creation)

Chart 1 shows one of the liquidity indicators, the credit indicator, and the deposits received. It is evident how the largest was in 2011, with continuous growth until 2017 when the decline was recorded. This indicator is an essential indicator of the liquidity of the bank, indicating when higher, the liquidity lowers. When analyzing the above indicator, it is evident that from 2011 liquidity increases in the permanent part of 2017, while due to the slight increase in the indicator, in 2018 liquidity recorded the decline.

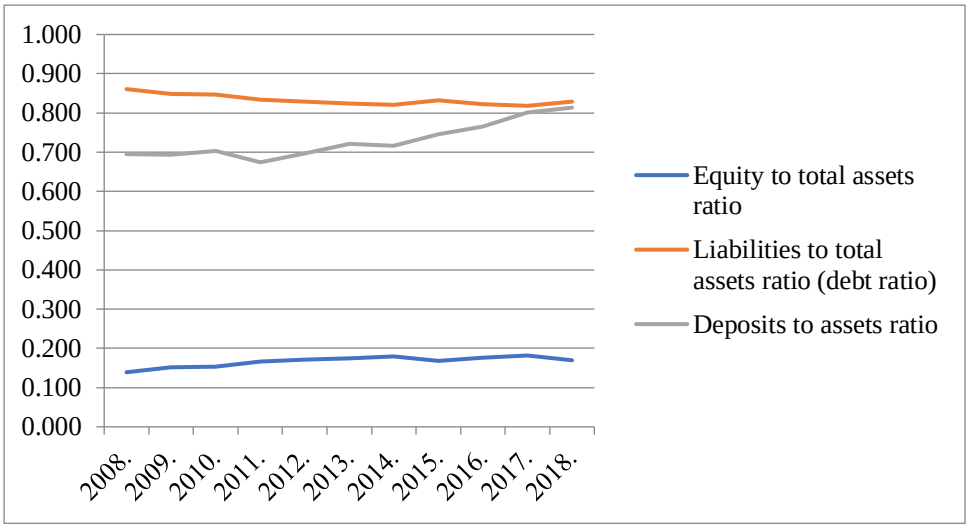

Chart 2: Bank indebtedness indicators
(Source: Author's creation)

Bank indebtedness indicators, presented in graph 2, measure to which extent the bank is financed from foreign sources and how much from the capital. The equity to total assets tells how many assets are funded by capital, and the indicator is known as the coefficient of own funding and expresses the proportion of capital-funded assets. The more the indicator of equity to total assets (asset) is high, the indebtedness is lower, resulting in a lower risk of bank operations (Žager et al., 2017). From 2008 to 2017, there is a slight growth, indicating a decrease in indebtedness and lower bank risk. According to the analyzed indicator, the bank's indebtedness decreases from 2008, but it does not record high fluctuations, and it cannot be said that PBZ was heavily indebted and, therefore, it is a secure bank. Furthermore, an indicator of the relationship between total liabilities and total assets, i.e., the indebtedness indicator, also recorded a slight decline through the analyzed years, which also indicates a reduction in bank indebtedness.

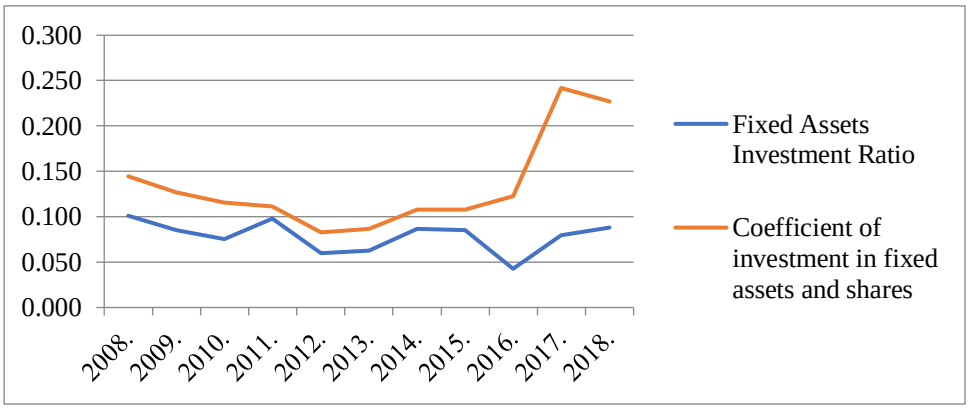

Chart 3: Investment indicators in fixed assets
(Source: Author's creation)

The latest relationship indicators in the bank balance are the relationship indicators in the fixed assets that are shown in chart 3. The first indicator is the coefficient of investment in fixed assets and the coefficient of investment in fixed assets and shares. The share includes securities and other equity holdings and are considered as risky and less liquid parts of the assets of banks. It is particularly evident in Croatia where the secondary securities market is poorly developed. It is important to note that investments in tangible assets must not exceed 40% of the recognized capital of the credit institution (Žager et al., 2017). The coefficient of investment in fixed assets has a constant oscillation and a decline in the most observed distribution, and the growth is recorded in 2010, 2014, 2017, and 2018. The coefficient of investment in fixed assets and shares is the highest growth recorded its highest growth in 2017 (growth from 0.12 to 0.24). From graph 3 It can be concluded that Privredna banka Zagreb in the period from 2015. To 2018. Invested more in holdings than in fixed assets. The decision to restrict the investment of credit institutions to the capital of non-financial institutions and tangible assets has been complied with since no coefficient exceeded 40% of the capital in any period. The highest coefficient of investment was recorded in 2017. It is essential that these indicators are not high, for the reasons that this could undermine the liquidity of the bank as the main activity of the bank is considered to be the financing of economic operators rather than the acquisition of ownership of the same (Žager et al., 2017).

3.2. Relationship indicators in the income statement

The calculation of the indicators from the profit and loss account showing the performance of the bank's operations are divided into two groups, indicators of economy and non-interest activities of the Bank (Žager et al., 2008).

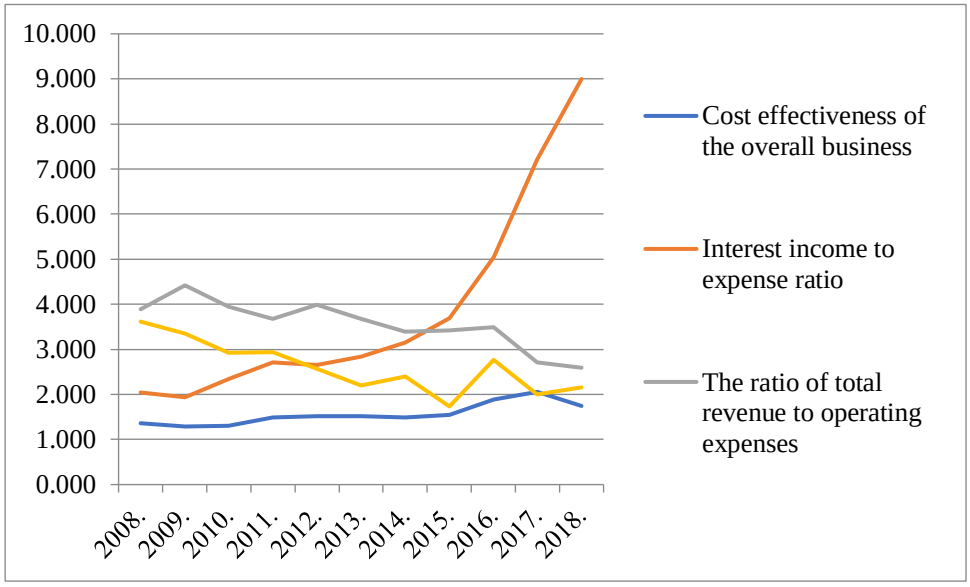

Chart 4: Indicators of cost-effectiveness
(Source: Author's creation)

Cost effectiveness is a ratio between revenues and expenditures. It shows how much revenue is realized per unit of expenditure, which means that it is necessary to achieve maximum revenues with minimum expenditures (Žager et al., 2017). From 2008 to 2017, the economy of the overall business recorded a constant increase, which means that PBZ increases revenue share while reducing expenditures. The decline was recorded only in 2018, when the difference decreased. In addition to the ratio of revenues and expenditures to the cost-effectiveness of the entire business, the relationship between interest income and expenditures, the ratio of total

revenues and operational expenditures, and the ratio of total revenues and operational expenditures plus the value adjustments is compared. The ratio of interest in income and expenditures is recorded from 2009 as a constant increase, which means that the bank increases interest income while reducing interest expenditures. This suggests that the bank increases the loans it gives to the parties while reducing its borrowing. The ratio of total revenue and operational costs is the key indicator to be considered concerning profit and loss accounts. Operating costs include salary and wage allowances for staff, material costs, and similar costs and depreciation. The above indicator should be as significant as possible, i.e., it should be higher than one as this means that the operating costs are covered by revenues (Žager et al., 2008). The ratio of total revenue and operating costs is, from 2009, when it amounted 4.42, in decline, but in 2018 it is 2.59, which means that revenues cover operating costs. The same indicator is enlarged for value adjustments and also declines in 2009 with one significant increase in 2016. In 2018 the same amount is 2.16, which means that Privredna banka Zagreb, with operational costs, also covers the value adjustments of tangible and intangible assets with its revenues. In this section, it would be interesting to compare the costs of employees and the total revenues that banks accompany to control the costs of employees because the costs of employees in banks represent a significant amount of total costs, and it is interesting to monitor its movement in a given period. Since no employee costs were available as a separate source, the indicator could not be calculated.

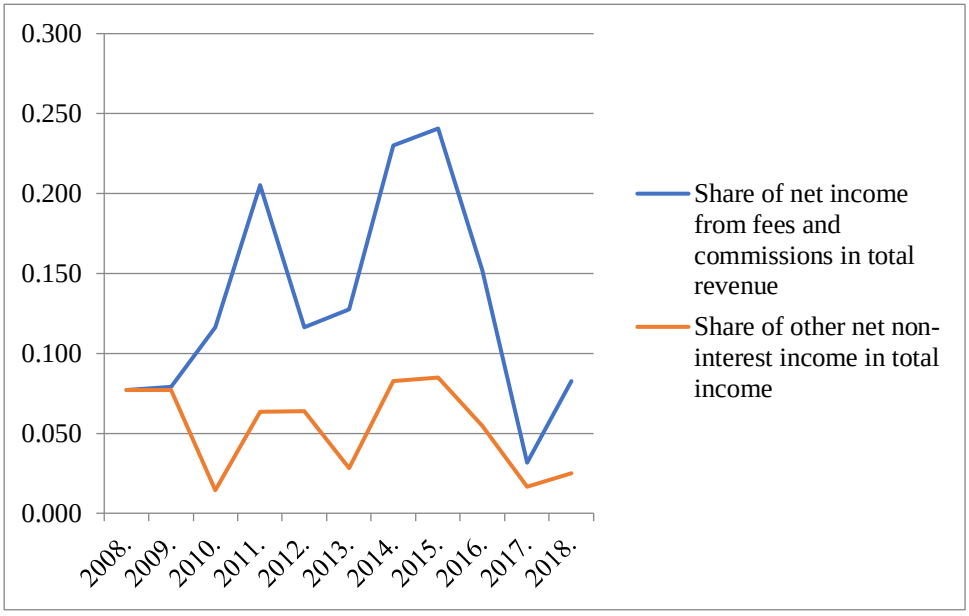

Chart 5: Indicators of non-interest activities
(Source: Author's creation)

Non-interest income includes a wide range of services, and in the area of non-interest income, particular income from fees and commissions is defined, while other non-interest income is classified as other non-interest income (Žager et al., 2017). Indicators of non-interest activity, shown in graph 5, include two indicators; share of net income from commissions and fees in total revenue and the share of other non-interest income in total revenue. Both indicators recorded the oscillations in the observed period, so the share of net income from commissions and fees in total revenue recorded growth by 2011, and the highest growth was recorded in 2015. The lowest proportion was recorded in 2017, and again in 2018, the growth is recorded. Very similar oscillations are also recorded in the proportion of other non-interest income in total revenue.

Banks that record these indicators above the average of the banking system are classified into modern or contemporary banks because they offer diversified and varied services to their clients, and charge a fee or commission for it. In the conditions of a developed financial market where there is a diversity of financial institutions, banks are no longer distinguished by interest rates but should seek other services that will differ from their competitors (Žager et al., 2017). Given the significance of these indicators and their values, it is evident that Privredna banka Zagreb is attempting to diversify from other banks through the introduction of new services. However, in today's era of digitalization when everyone is trying to adapt to the clients requirements, it is challenging to offer something new that others do not have, so the oscillations in values are recorded.

3.3. Profitability indicators

Profitability indicators measure the return on invested capital, which is often regarded as the highest management activity. Two sets of indicators, profitability indicators and margin indicators, and average interest rates differ. Rentability indicators are considered profitability indicators in the real sense of the word, while the margins and average interest rates are not considered, but are in the function of increasing profitability (Žager et al., 2017).

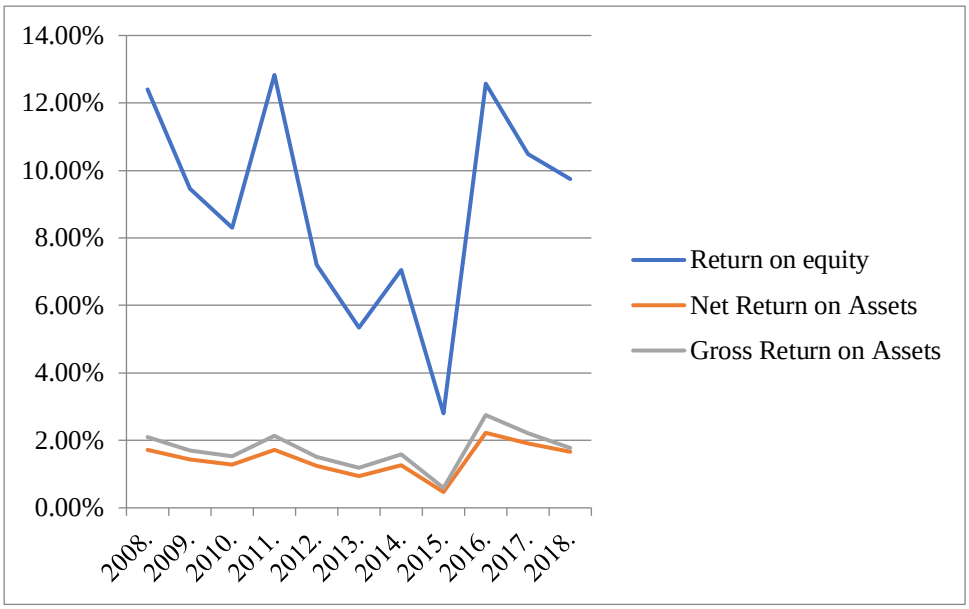

Chart 6: Profitability Indicators
(Source: Author's creation)

The capital profitability indicator is the ratio of net profit and capital and is the indicator of increasing shareholder wealth. Profitability measures the rate of return of invested capital generated by the bank for its owners and indicates how many units are obtained by the unit of capital. According to graph 6, the return on equity fluctuates through the observed year. The lowest was in 2015, while the highest value was recorded in 2011 and 2016, after which the decline was re-recorded. In the last observed year, 2018, the retutn on equity is below 10%, which is below the level of 2008 when the period of crisis in the Republic of Croatia began. The other two indicators, net and gross return on assets fluctuate in the same direction because they differ only for the amount of tax, but as the return on equity recorded the highest value in 2015, these two indicators in the same year recorded the highest value. The aforementioned indicates that PBZ was the most profitable in 2015.

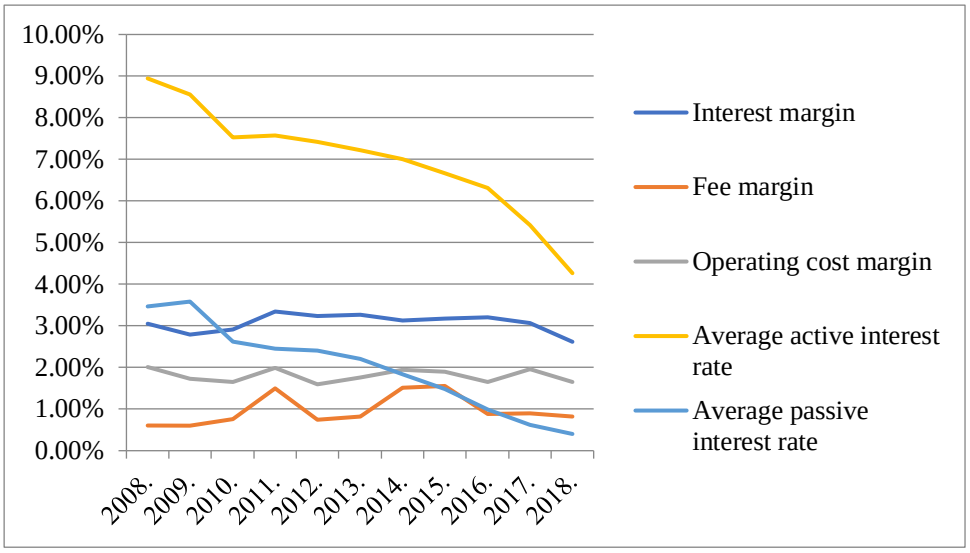

Chart 7: Margin indicators and average interest rates
(Source: Author's creation)

Chart 7 shows margin indicators and average interest rates that are not considered to be real profitability indicators but are in the function of increasing profitability. Interest margin or fee margin is an indicator that puts the difference between interest income and expenditures and total assets. The interest margin depends on several factors, primarily on the development of a country's financial system, the size of the bank and its position concerning the competition, the environment in which the bank operates, the size of assets, etc (Žager et al., 2017). The interest margin is in a constant decline from 2008. This can be attributed to an increase in assets, i.e., assets that are on the rise. This decline does not indicate a positive aspect, as the margin should be as large as the bank can be more successful. The same applies to margin fees, which are in 2018, the lowest of all observed years. In contrast to the margin of interest and remuneration, the margin of operational costs should be as low as it is, and it also records a decline, but the decline is not significant, and the operating costs margin is continually around the same amount. The average active interest rate is the relationship between interest income and the interest-bearing assets in which the bank charges interest (Žager et al., 2017). The mentioned interest rate recorded a significant and constant decline (in 2008, 9%, while in 2018 fell by more than 50%, to 4.26%). The average passive interest rate is the relationship between interest expense and interest-bearing liabilities covering all liabilities of the bank to which it pays interest (Žager et al., 2017). The passive interest rate also recorded a significant decline in the observed period (0.4% in 2018). The difference between the observed two average interest rates represents an interest rate margin.

4. DISCUSSION

The business of PBZ was observed in the period from 2008 to 2018 through financial indicators calculated base on the available financial statements. The aim of the paper is the analysis of the PBZ's security and performance based on the financial statements, focusing on the period before and after the financial crisis. Based on the analysis of the financial indicators, it is possible to conclude that PBZ increased the liquidity through the observed period, and is the most liquid in 2017. As far as indebtedness is concerned, it also decreases, indicating lower risk of the bank, but it can be said that these changes are minimal so that the impact of the financial crisis on indebtedness is not significant. The last indicators from the balance sheet relate to the indicators of investment in fixed assets. The most significant change was recorded with the investment coefficient in fixed assets and shares, indicating increased investment in shares throughout 2016

and 2017. It is essential that, under the decision to restrict the investment of credit institutions to the capital of non-financial institutions and tangible assets, the investment of a credit institution in the capital of all non-financial institutions must not exceed 30% of the institution's guarantee capital, which is not in the case of PBZ. Furthermore, the first analyzed indicators in the profit and loss account were indicators of cost-effectiveness. From 2009 to 2010 PBZ records a constant increase in the economy of the overall business, indicating that the total revenues rise more than the total expenditures. There is a significant increase in the relationship between interest income and expenditures that are steadily rising from 2011, indicate an increase in the interest margin, and a rise in the profitability of the bank can be expected. Reducing the ratio of total revenues and operating costs indicates a reduction in the efficiency of the bank. In addition to administrative costs and depreciation, a tremendous burden for the bank represents both value adjustments. Overall, the ratio of total revenues and operational costs plus depreciation and value adjustments was reduced by 2018. Therefore, it shows that PBZ has a lower quality credit portfolio, which means that it has reduced the diversification of placement. Indicators of non-interest activities are the last indicator in the income statement. Both indicators recorded oscillations in the analyzed period. The indicator of the share of net income from fees and commissions in total revenues is recorded in 2015 when it is almost 25%. After this period, up to 2017, it recorded a significant decline (below 5%). It can be seen as risky, considering that the same should be above 15%. The cost-effectiveness indicators are considered to be the best indicators of profitability. The profitability of PBZ capital was the lowest in 2015 when it was 2.8%, while the largest was in 2011, 12.83%., and approximately the same was in 2016 (the year after which it recorded a decline). Although from the year 2016, it shows a tendency to decline, it is still high. It can be concluded that the yield to the capital is high, i.e., profitability is high. Net and gross profitability of assets has the highest value in 2016 and subsequently recorded a tendency to decline in 2018 (1.78%), which is still high and indicates a good return on the property. In addition to profitability indicators, margin indicators are analyzed. The most significant changes in the margin indicators graph and average interest rates recorded the average passive and active interest rate, while margin indicators recorded fluctuations but were not significant. Because of the situation on the Croatian market, Privredna banka Zagreb, although some fluctuations in the margins were recorded, managed to preserve the relatively stable value of the margin.

5. CONCLUSION

Privredna banka Zagreb d.d. is one of the largest banks in the Republic of Croatia. The mergers and takeover of equity shares in certain banks have led to its expansion, as well as increased stability. By analyzing the financial indicators from 2008 to 2018, it can be concluded that the financial crisis in the Republic of Croatia had no significant impact on the business of Privredna banka Zagreb. Thus, the safety of business and performance are still at a reasonable level. While there are inevitable fluctuations in financial indicators, key financial indicators have either risen or remained relatively constant. Since Privredna banka Zagreb is one of the largest banks in the Republic of Croatia with the highest number of clients and that part of the Italian group Intessa Sanpaolo all this contributed to their stable business. In addition to financial indicators, the performance of their business is also evident by the numerous prizes they receive annually.

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ECONOMETRIC ESTIMATION OF THE IMPACT OF INTEGRATION OF EDUCATION AND SCIENCE ON SUSTAINABLE DEVELOPMENT (ON THE EXAMPLE OF CIS COUNTRIES, UKRAINE AND GEORGIA)

Yadulla Hasanli
Azerbaijan State University of Economics (UNEC)
Baku, Istiqlaliyyat str.6, AZ1001, Azerbaijan
yadulla.hasanli@unec.edu.az

Sardar Shabanov
Azerbaijan State University of Economics (UNEC)
Baku, Istiqlaliyyat str.6, AZ1001, Azerbaijan
sardar.shabanov@unec.edu.az

Salman Najafov
Azerbaijan State University of Economics (UNEC)
Baku, Istiqlaliyyat str.6, AZ1001, Azerbaijan
salman.najafov@unec.edu.az

Oleksandr Krupskyi
Oles Honchar Dnipro National University,
Dnipro, Dnipropetrovsk Oblast, Haharina Ave, 72, Ukraine
krupskyy71@gmail.com

ABSTRACT
The paper discusses the impact of the integration of education and science on the sustainable development of the country on the example of CIS countries, Ukraine and Georgia. The human development index (HDI) was taken as an aggregate indicator of sustainable development, and the number of enrolled PhD-students and Doctor of Science (DSc) students in the country for the current year was taken as indicators of the integration of education and science. The impact of the explanatory factors enrolled PhD and DSc students on HDI is estimated using econometric models. Due to the lack or insufficient statistics for doctoral studies, trend models were built for some countries. The average growth rates of the HDI of the all mentioned countries are compared. The obtained results were analyzed and interpreted economically. The information base of the study was formed on the basis of data from official statistical sources of the respective countries and international organizations from 1996 to 2018.
Keywords: *Human development, PhD student*

1. INTRODUCTION

For the first time, the term «sustainable development» was used in the paper (Sen, 2005), where its author - Amartya Sen mentions, that it comes from Mahbub ul Haq. Sustainable development consists of three components: environmental, social and economic (HDR (2004), Bobylev S.N. (2012)). Each component, in turn, has dozens of subcomponents. However, in view of the fact that it is convenient for the decision maker to work with one indicator, HDI was proposed. A methodology has been developed for this indicator, and its statistics is available for 189 countries (HDR, 2019). The HDİ (Human Development Index) methodology was proposed in (HDR, 2004). HDİ is calculated as an algebraic mean or geometric mean of the following indices: a) life expectancy at birth; b) education of the population; c) GDP per capita. It can be seen that, HDI is directly related to the three main indicators, and each of these indicators are affected by the number of other indicators.

In addition, many factors have an impact on the level of education of the population. The integration of education and science is one of those factors. The main purpose of the study is to assess the impact of the integration of education and science on sustainable development. There are many indicators that characterize both sustainable development and the integration of education and science. Some of these indicators have problems with quantitative statistics, while others are qualitative and do not have quantitative statistics. For these reasons, the study adopted the number of doctoral students studying in the doctoral program as an indicator characterizing the integration of education and science, which can affect the level of education of the population, and its impact on the human development index was econometrically assessed. It is necessary to mention that, in the former Soviet Union republics, the defense of the dissertation consisted of two stages: the candidate of sciences (PhD) and the doctor of sciences. Consequently, the number of students enrolled in the PhD and Doctor of Science programs in the current year were accepted as an explanatory variables in the study. In (OECD, 2016), the number of doctoral students who defended their thesis was used as the indicator of the integration of education and science. In principle, this indicator can be taken as an indicator of the integration of education and science. Note, however, that it is a derivative of the indicator of the number of applicants to doctoral studies. On the other hand, it is known that during the doctoral study, for various reasons, the considerable part of doctoral students is screened out, and only a small proportion of doctoral students graduated (Stock, Siegfried and Aldrich Finegan, 2011), (Bednyy, B., 2006). And last but not least, the fact is that the number of enrolled doctoral students can be managed directly, whereas this cannot be done for the above-mentioned indicator. We believe that, the indicator of the integration of education and science is relatively underdeveloped. Here it is necessary to mention the paper (Muradov *et al.*, 2019) showing that the integration of education and science is institutionalized at the doctoral level, and as an indicator of integration, the number of enrolled PhD-students and DSc students in the country is proposed in current year. Due to the fact that the mentioned paper (Muradov et al., 2019) investigates the impact of the integration of education and science on the publishing activity of the country, the number of papers per 1 million population indexed in the scientific bibliographic database of SCOPUS was taken as an explanatory variable. In this paper, HDI was taken as an explanatory variable and generalized indicator of the country's sustainable development.

2. PROBLEM STATEMENT AND METHOD OF SOLVİNG

The main objective of this paper is to provide an econometric assessment of the impact of the integration of education and science on the sustainable development of the CIS countries, Ukraine and Georgia. To solve the problem the least squares and maximum likelihood methods were used. The methods were implemented using the Eviews software package.

3. DATASETS OF THE PROBLEM AND THE BASIC RESULTS

The information base has been formed on the basis of data from official statistical sources of the respective countries and international organizations for 1996-2018. The relevant information for Azerbaijan is given in the table below.

Table following on the next page

Year	HDI	DSc_enr	PhD_enr	Year	HDI	DSc_enr	PhD_enr
1996	0.612	19	386	2007	0.709	19	452
1997	0.617	19	303	2008	0.719	22	455
1998	0.626	23	253	2009	0.736	20	51
1999	0.633	10	151	2010	0.740	13	5
2000	0.64	9	367	2011	0.741	168	677
2001	0.648	17	292	2012	0.745	219	814
2002	0.657	18	303	2013	0.752	134	625
2003	0.666	14	398	2014	0.758	129	629
2004	0.674	14	470	2015	0.758	94	558
2005	0.679	18	503	2016	0.757	101	420
2006	0.704	17	550	2017	0.757	129	455

Table 1: The dataset of Azerbaijan, 1996-2017
(Source: UNDP and the State Statistical Committee of the Republic of Azerbaijan. The table is compiled by authors)

Here, HDI - Human Development Index, DSc_enr and Phd_enr – the number of enrolled PhD-students and DSc students in the country in the current year.

The regression equation is as follows:

$$HDI = 0.587600271489 + 0.000584005937463 * DSc_enr + 0.000181679108004 * PhD_enr + 0.127453975253 * DUMY2009 + 0.143899255784 * DUMY2010 - 0.0677100251016 * DUMY2011 - 0.1183365709 * DUMY2012 \quad (1)$$

Where, DUMMY20XY means a dummy variable with a value of 1 in 20XY year.

All coefficients of equation (1) are statistically significant with a probability of 99%. The meaning of equation (1) is that an increase by 1 unit of the number of enrolled PhD-students in the current year will lead to an increase in HDI by 0.000584 points, and doctors of philosophy by 0.000182 points. Thus, it was found that an increase in the number of enrolled PhD-students and DSc students increase the human development index. Furtermore, the strength of the impact of the DSc on the HDI relative to the impact of the Phd on the HDI is more than 3,21 times the ratio of the respective coefficients. If, for some reasons, there will be no admission to doctoral studies this year, the HDI will drop sharply to 0.673, which is similar to the 2004 level. In fact, such a case occurred in 2009, when the Parliament of Azerbaijan adopted the Law on Education (Law on Education of the Republic of Azerbaijan of June 19, 2009) and in 2010 relevant organizational issues were resolved. As can be seen from model (1), the adoption of the Law on Education of the Republic of Azerbaijan and the resolution of a number of organizational issues related to that law had a positive impact on HDI, and the HDI increased by 0.127453975253 points in 2009 and 0.143899255784 in 2010. However, the suspension of admission to doctoral programs in 2009-2010 demonstrated its negative effects after two years, i.e. 2011 and 2012, and as a result, the HDI decreased by 0.0677100251016 and 0.118384365709 points, respectively. In addition, a trend model was built for Azerbaijan:

$$LOG(HDI_AZ) = -0.460150224127 + 0.00892499373212 * @TREND + [AR(1)=0.676591369065, AR(10)=-0.374271479841, UNCOND] \quad (2)$$

All coefficients of the equation (2) are statistically significant with the probability of 99%. The meaning of equation (2) is that from 1996 to 2018, the growth rate of Azerbaijan's HDI increased by 0.892499373212% annually. Note that, while the HDI for Russia is available for 1996-2018, we have not been able to obtain data on admission to doctoral studies for 1996-2009 from official Russian statistics.

In Russia, against the background of an increase in the HDI value for the period under review, there was a decrease in the number of doctoral students, who received under the programs of doctors of philosophy and doctors of science.

Year	HDI	DSc_enr	PhD_enr	Year	HDI	DSc_enr	PhD_enr
1997	0.704	NA	NA	2008	0.774	NA	NA
1998	0.703	NA	NA	2009	0.771	NA	NA
1999	0.709	NA	NA	2010	0.780	1650	54558
2000	0.720	NA	NA	2011	0.789	1696	50582
2001	0.727	NA	NA	2012	0.798	1632	45556
2002	0.732	NA	NA	2013	0.804	1582	38971
2003	0.740	NA	NA	2014	0.807	166	32981
2004	0.746	NA	NA	2015	0.813	419	31647
2005	0.752	NA	NA	2016	0.815	397	26421
2006	0.759	NA	NA	2017	0.816	439	26081
2007	0.767	NA	NA	2018	0.824	393	27008

Table 2: The Dataset of Russia, 1997-2018
(Source: UNDP and the State Committee on Statistics of the Russian Federation. The table is compiled by authors)

In Belarus, the information on doctoral studies is available from 2010 to 2018, and data on the HDI are known for 1999-2018. Data on the HDI for Ukraine are available for 1999-2018, while the number of students admitted to doctoral studies is only known for 2010-2018. And for the period from 1999 to 2009, official statistical sources published only the number of PhD-students and DSc students, dividing by 3 we found an approximate number of PhD-students and DSc students admitted annually for the period 1999-2009. In other words, in order to create an information base for Ukraine, it was necessary to simulate the missing necessary information. The relevant information for Ukraine is given in the table below:

Year	HDI	DSc_enr	PhD_enr	Year	HDI	DSc_enr	PhD_enr
1997	NA	NA	NA	2008	0.733000	11114.67	492.0000
1998	NA	NA	NA	2009	0.727000	11371.67	487.6667
1999	0.667000	7433.333	395.6667	2010	0.732358	10322.00	589.0000
2000	0.671359	7765.000	377.0000	2011	0.737000	10024.00	592.0000
2001	0.681000	8085.333	368.6667	2012	0.742000	9680.000	628.0000
2002	0.689000	8429.333	388.6667	2013	0.744416	8383.000	611.0000
2003	0.699000	9035.333	406.6667	2014	0.747000	7568.000	596.0000
2004	0.706000	9470.667	423.6667	2015	0.741788	9813.000	650.0000
2005	0.715000	9955.333	438.3333	2016	0.745694	6609.000	584.0000
2006	0.722000	10431.00	457.6667	2017	0.746836	7274.000	493.0000
2007	0.729000	10832.33	472.6667	2018	0.749746	7172.000	544.0000

Table 3: The dataset of Ukraine (1999-2018)
(Source: UNDP, State Statistical Committee of Ukraine. The table is compiled by authors)

Omitting further explanations of the data set for the CIS countries, Ukraine and Georgia, the basic econometric results of the study are given below.

	AZ	RU	UA1	BY
Dsc_enr	0.000584 (3.960369)		0.185118 (11.70682)	0.000182 (7.821608)
Phd_enr	0.000182 (3.382411)	-0.00000125 (-10.39062)		
Constant	0.587600 (29.18058)	0.85158568 (183.5155)	-1.472498 (-14.89351)	0.788608 (307.4760)
Observations	21	9	19	9
R2 (adj)	0.794	0.930	0.902	0.883

Table 4: Basic Econometrics Results
Dependent variable: HDI, 1996-2018. In parentheses, the t-stat is indicated. [1]For Ukraine, the explained and explanatory variables are indicated in the logarithmic scale.
(Source:The table is compiled by authors)

The economic meanings of table 4 are as follows:

- For Russia, an increase in the enrolled PhD students by 1 unit leads to a decrease in the HDI indicator by 0.00000125 points against the background of a decrease in the number of enrolled Ph.D. students in the doctoral program for 1996-2018.
- For Ukraine, an increase in the enrolled DSc students by 1% relative to its average value leads to an increase in HDI by 0.185118% relative to the average HDI value.
- For Belarus, an increase in enrolled DSc students by 1 leads to an increase in HDI by 0.000182 points.
- Note that the results for Azerbaijan have been presented above.
- An analysis of the information bases for Armenia, Georgia, Moldova, and Uzbekistan suggests that the DSc_enr and PhD_enr do not have a statistically significant effect on the HDI.
- Due to the lack of necessary information for Kazakhstan, Kyrgyzstan, Tajikistan and Turkmenistan, it was not possible to carry out an econometric assessment of DSc_enr and Phd_enr on HDI.
- For the CIS countries, Ukraine and Georgia, trend models for HDI have been built, the results of which are presented in table 5.

Country Abbreviation	@TREND	Constant	Observations	R2(adj)
RU	0.007689 (18.71202)	-0.356705 (-53.90202)	23	0.993011
UA	0.006129 (4.328241)	-0.413865 (-15.72038)	20	0.970644
BY	0.010728 (66.95285)	-0.406932 (-192.6205)	20	0.994891
MD	0.008388 (6.457214)	-0.514780 (-23.02460)	20	0.981872
AZ	0.008925 (10.21199)	-0.460150 (-54.73716)	23	0.992704
AR	0.009405 (34.36223)	-0.460177 (-150.7095)	22	0.995822
GE	0.019260 (4.223031)	-0.632292 (-8.017698)	11	0.627338
KZ	0.007905 (56.80069)	-0.371736 (-206.6553)	17	0.996530
UZ	0.009953 (40.21348)	-0.550392 (-157.6427)	19	0.988985
KGZ	0.007719 (22.66737)	-0.557033 (-140.2121)	23	0.992945
TM	0.006687 (17.13963)	-0.484993 (-68.35869)	9	0.973401
TJ	0.010523 (5.997218)	-0.642508 (-20.82200)	18	0.980018

Table 5: Trend models of CIS countries, Ukraine and Georgia
The dependent variable HDİ is presented in a logarithmic scale. In parentheses, t-stat is indicated.
(Source:The table is formed by the authors based on the construction of trend models of the semi-logarithmic type)

The value of the average growth rate HDI had a positive trend on all the CIS countries, Ukraine and Georgia from 1996 to 2018. In Table 6 below, the average HDI growth rate is ranked in descending order.

Number	Country	Growth rate of HDİ in%	Years
1	Georgia	1.9260	2008-2018
2	Belarus	1.0728	1999-2018
3	Tajikistan	1.0523	2001-2018
4	Uzbekistan	0.9953	2000-2018
5	Armenia	0.9405	1996-2018
6	Azerbaijan	0.8925	1996-2018
7	Moldova	0.8388	1999-2018
8	Kazakhstan	0.7905	2002-2018
9	Kyrgyzstan	0.7719	1996-2018
10	Russia	0.7689	1996-2018
11	Turkmenistan	0.6687	2010-2018
12	Ukraine	0.6129	1999-2018

Table 6: The average growth rate of HDI
(Source: The table is compiled by authors)

As shown in Table 6, the highest growth rates of HDI were observed in Georgia (1.9260%) and the lowest one in Ukraine (0.6129%). The higher growth rate of HDİ in Georgia can be attributed to the fact that serious reforms in all areas of the country, including science and education, have its positive outcomes. On the contrary, in Ukraine, the Crimean problem and other similar problems, political and economic tensions with Russia, and also, because of the brain drain from 1996 to 2018, the growth rate of HDI had been negatively affected.

4. CONCLUSION

The constructed models for Azerbaijan, Ukraine, and Belarus allow us to conclude that, in general, the number of students, who enrolled in the doctorate current year, positively affects the human development index. At the same time, for Azerbaijan, the positive influence of the number of doctors, who enrolled in the doctoral program under the program of doctors of sciences, turned out to be 3.21 times higher than the influence of doctors of philosophy. And for Russia, an increase in the value of the HDI was observed against the background of decrease in the number of PhD students, who enrolled in the doctoral program. All countries showed positive dynamics in the average growth rate of the HDI over the reporting period. According to the results, it can be concluded that, the process of admission to doctoral studies should be carried out continuously, because any interruption in this process will certainly have a negative impact on the sustainable development of the country in the future.

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APPENDIX

List of abbreviations

- AM - Armenia
- AZ - Azerbaijan
- BY - Belarus
- GE - Georgia
- KGZ- Kyrgyzstan
- KZ - Kazakhstan
- MD - Moldova
- RU - Russian Federation
- TJ - Tajikistan
- TM - Turkmenistan
- UA - Ukraine
- UZ – Uzbekistan
- CIS - Commonwealth of Independent States
- DSc_enr – enrolled Doctor of Science students in current year
- DUMMY 20XY - dummy variable for 20XY year with value 1
- HDI – Human Development Index
- PhD_enr - enrolled PhD students in current year

THE CORONAVIRUS EPIDEMIC AS A WAY TO INFLUENCE TOTAL WORLD ECONOMY'S TRANSFORMATION: ANALYSIS AND FORECAST

Sevda Mamedova
Azerbaijan State University of Economics (UNEC)
Baku, Istiqlaliyyat str., 6, AZ1001, Azerbaijan
dr.m.sevda@gmail.com

Inna Bagautdinova
Ufa State Aviation Technical University
Ufa, Karl Marx St., 12, 450008, Russia
Inna.bagautdinova@yandex.ru

Vitaly Vasiltsov
Cherepovets State University
Cherepovets, Lunacharsky Ave., 5, 162600, Russia
3297@rambler

ABSTRACT

The article is devoted to the analysis the impact of the epidemic, which will lead to a major economic and geopolitical crisis. With the development of the situation in the world, the traditional part of the economy will go into stagnation. The coronavirus will cause the collapse of the modern world order. A long economic "ice age" will follow, national conflicts will escalate, borders will close, protectionism will prevail, and military conflicts are possible. The atomization of society will continue: more and more events will be held online, major festivals, performances, lectures will be canceled, shopping centers will be closed, and purchases will be made mainly via the Internet. However, the relationship between the digital and the physical in our picture of the world will change dramatically. Previously, the "figure" was a part of the whole, a rapidly growing and increasingly visible, but strictly limited area. Now the world will become digital by default, the physical will become a part of it, a very big, very important part, but a part. Work at home and online services, including medical consultations, will prevail. This transformation will have much broader implications than just developing online sales channels for end consumers and industrial customers. There is a huge uncertainty facing humanity. No one knows how the behavior of ordinary citizens, investors, and governments will change because of the crisis. For the world, economy coronavirus is another powerful promise for structural adjustment of the market. The article will show the consequences of the coronacrisis: the fall in stock prices on world exchanges, the rise in the price of gold, the break in international economic ties, including in the global auto industry. Global cataclysms will determine long-established trends, turning them into irreversible shifts. The result of the total spread of COVID-19 is likely to be the ultimate triumph of the digital economy.

Keywords: *Epidemic, Digital economy, Digital transformation, New reality, Smart technologies*

1. INTRODUCTION

The world is entering a period of prolonged economic depression amid the spread of a novel coronavirus. It is important that at the moment the real level of unemployment among the population of most countries is unknown, and it is also unclear how much it can grow in the near future. However, the growth rate is projected to be at the highest level in modern history. The main impact factor is restrictive measures to control the coronavirus.

The fact is that the duration of the quarantine and isolation is unknown, while most countries only extend the designated periods. This leads to the closure of many companies and enterprises that cannot operate in accordance with the measures taken and in conditions of complete uncertainty. Thus, the business sector in almost all countries has already experienced a serious collapse, and indicators of business confidence have fallen to the level of 2008-2009 – the period of the global financial crisis, which is also called the "great recession". In the case of a coronavirus pandemic, much of the decline is due to the emotional actions of investors who are concerned about the continuity of supply and production chains, as well as the future of companies. Of course, the coronavirus has a real impact on the economy. Experts quoted by Western media speak of possible losses of up to $ 350 billion globally. At the moment, we have a period of uncertainty – there is not much data yet to say what will happen to the entire global economy. Much will depend on the mood in the societies affected by the epidemic. The more they panic, the more serious the consequences may be.

2. THE NEW "GREAT DEPRESSION": ANALYSIS OF THE IMPACT OF THE PANDEMIC ON THE WORLD ECONOMY

Since December 2019, the COVID-19 virus has spread to 114 countries. Quarantines are stops for most businesses and a corresponding decrease in the income of their participants, which means a drop in consumption and savings. The first causes a drop in revenue for all businesses in the chain, the second-a drop in the value of long-term and financial assets. A drop in the value of investment assets causes their owners to re-evaluate their ability to consume, and in turn leads to a drop in consumption. States ' replacement of falling consumer incomes will not be complete and will be carried out in debt – especially since tax collections will fall after income. The volume of public debt will grow all over the world, which will lay the Foundation for future inflation (in the period of post-war recovery, inflation is always observed). Depending on the severity of the quarantine, many businesses and even more service businesses in the affected areas will be stopped for a period of 1-3 quarters (excluding online services, but not all of them). The potential impact on GDP will vary from country to country, but according to preliminary data for China, Italy and France, the decline in GDP at the moment will reach 20-40% (that is, for each quarter of downtime – 5-10% of annual GDP). This is an unprecedented level of GDP decline: if the quarantines are prolonged, we may see a reduction in global GDP of 10% or more in one year. There are already forecasts that promise an increase in unemployment in the US to 25-30% (Buchholz, 2020)[3]. These indicators are similar to the Great Depression, only compressed in a short period of time. The coronavirus epidemic will bring changes to the world on a scale comparable to those caused by the world wars.

2.1. Transformation of the economy as a result of the pandemic

Forecasts of a new great depression are not a new phenomenon, especially in the context of the actual economic crisis around the world. The situation is getting worse because of the continuation of the pandemic, and, consequently, the restrictions imposed to combat it. The state of emergency in different countries, combined with the global recession, cannot but affect the entire world politics. A pandemic can slow down global political processes and provoke new crises. The international monetary Fund has published a forecast of the development of the situation in the world economy in the context of the coronavirus pandemic. Instead of the 3.3% growth in global GDP that was expected in January for 2020, the IMF now forecasts a 3% decline, and global trade will sink by 11% (IMF, 2020)[8].The world has changed dramatically in recent months, the IMF report says. It is likely that the world economy this year will experience the worst recession since the great depression and it will definitely be larger than the one that was during the financial crisis 10 years ago, the report said.

2.1.1. Features of the crisis in different countries of the world

The US authorities are trying to save the situation in their country by allocating almost $2 trillion. However, the US economy has already entered a recession, and the transition to a depression in such circumstances is only a matter of time. The measures taken by the us government will not be able to stop the deep economic downturn, since the crisis has been going on for more than two months. For example, the coronavirus pandemic may cause countries to break their previous records: in the US alone, the number of applications for unemployment benefits increased to 6.6 million in March. At the same time, more than 700 thousand people lost their jobs, and the unemployment rate rose to 4.4 for the first time in 60 years.for example, only according to the forecast of the Federal reserve Bank of St. Louis, the unemployment rate in the United States will reach 32% in the second quarter of 2020. At the same time, accurate data on the current situation will be available only by mid-summer, but by that time it will be impossible to influence the situation in any way. A study by scientists from the University of Virginia showed that a 1% increase in unemployment leads to a 1.3% increase in suicides (for Europe, a similar study gave an increase of 0.79%). It turns out that in any scenario – hard or soft – economic depression is inevitable, but keeping more people alive can reduce the depth of the failure. The European Union has similar problems, where the Eurogroup expects to spend more than $ 0.5 trillion to overcome the epidemic (Breton, 2020)[2]. However, a number of European countries are not particularly optimistic about the situation. The Euro zone economy showed the biggest drop in 25 years of observation. Small and medium-sized businesses in France have already lost about 70% of revenue for March-April, compared to last year, and continue to lose funds due to current restrictions on the background of the pandemic. Support from the EU financial authorities is at a fairly high level: fiscal measures accounted for about 2.2% of GDP, while liquidity support accounted for 13.7% of GDP. At the same time, the economic shock of strict quarantine is inevitable. Europe, unlike the United States, does not have a single fiscal support body, so the government of each country will have to make its own decisions. A serious problem is the high integration of production and value chains in the EU, which have now been severed. The economic strength of the EU lies in cross-country trade, the multiplicity of small businesses and their integration into global supply chains, much of which is in the EU itself. The strongest impact of the measures to combat the pandemic will be on the Italian economy – the country's GDP will shrink by 9.3% after growing by 0.3% last year. Also seriously affected by the coronavirus, the Spanish economy will shrink, according to the IMF forecast, by 8%. The economic downturn will be in Germany, France and the UK (CCSA, 2020)[4]. The US economy, according to the calculations of the IMF, will lose 5.9% of GDP, although in January it was predicted to grow by 2%. In General, developed economies are expected to decline by 6.1% this year and grow by 4.5% next year, according to the IMF report. China and India will remain the only drivers of global growth, but forecasts for growth rates in these countries have deteriorated dramatically. China's economy will grow by 1.2% instead of the expected 6%, and India-by 1.9% instead of 5%. According to the IMF forecast, the Russian economy will contract by 5.5% in 2020 after growing by 1.3% last year. At the same time, the Fund does not expect a surge in unemployment in Russia – it will grow from 4.6% in 2019 to 4.9% in 2020. Next year, economic growth in Russia will resume at 3.5%, which is 1.5 p. p. more than the previous forecast of the Fund. The IMF's forecast for Russia is close to the estimates given by Alexey Kudrin, the Chairman of the accounting chamber. According to him, by the end of 2020, the Russian economy will shrink by 3-5%, and in a pessimistic scenario – by 8% (IMF, 2020)[8].

2.1.2. Impact of the crisis on the most vulnerable sectors of the economy

Demand compensation after the end of the pandemic will obviously not recover in all industries. If Germany in the future is able to make up for some of the critical exports of machinery for the

economy, then in tourism-dependent Italy and Spain, the lost profit is lost forever. The same applies to planes that did not take off and many other services that were not provided (restaurants, hairdressers, etc.). Tourism is one of the largest sectors of the world economy, with revenues reaching $5.7 trillion. Almost 319 million people, or almost 10% of the world's working population, work in tourism. And it was this sector that was most vulnerable to the virus epidemic. Already, there is a significant reduction in the tourism sector, which is due to restrictions on movement and cancellation of travel in both the business and entertainment sectors. Around the world, many major conferences and events were canceled, each of which was planned to be attended by more than 100 thousand people. But not only conferences and exhibitions had to be canceled. Numerous business trips to other cities and countries are also canceled due to the spread of the virus. Great problems with business tourism and leisure. Tourists cancel travel bookings, which affects restaurants, hotels, airlines and other transport companies (Alemanno, 2020)[1]. The EU services sector employs about 73% of the population and accounts for 62% of GDP. From this we can draw a conclusion about the potential depth of the recession. According to the optimistic version of the European Commission's forecast, instead of the expected growth of EU GDP by 1.4% in 2020, there will be a fall. In 2009, EU GDP fell by 4.9%, and this time it may be worse. For example, Italy's GDP has barely increased since 2000. The unemployment rate before the crisis was 9.8% – one of the highest in the EU. The situation is also aggravated by the high national debt – 138% of GDP (Breton, 2020)[2]. The Ministry of economy of Italy gives a forecast of a fall in GDP by the end of 2020 by six percent. Social explosion against the background of unemployment is inevitable. In the South of the country there are more than 3.7 million people (15% of the total labor force of the country) who are employed in the shadow sector, so they will not be able to count on benefits. The situation is similar in Spain. Since the beginning of the quarantine measures, more than 900 thousand Spaniards have lost their jobs, and the total unemployment has reached 3.5 million. So, Italy together with Spain make up about a hundred million people , 20% of the entire European Union. The slide of these countries into economic depression could lead Europe to an unprecedented crisis, as all leading EU politicians and economists say. the EU's Characteristic weakness is the inability to quickly take on the debts of individual countries. According to the French national Institute of statistics and economic research (INSEE), the French GDP of the period of “self-isolation” is 35% less than the GDP of the normal period. The tourism and hotels sector suffered the most — with a drop of almost 100%, 90% in construction (another statistical Agency, OFCE, estimates it at 50%), and 50% in industry. Almost no agriculture was affected (minus 4%; alternative estimate-minus 13%) The service sector, which generates 56% of France's GDP, declined by 36%. The optimistic scenario, according to INSEE, is a 10% drop in GDP in the first half of this year, with a sharp rebound in the second half (plus 12%) and reaching the pre-crisis level in mid-2021. The pessimistic scenario is that GDP will fall by 16% this year and by another 2% next year, with a slight recovery in 2022. But at the same time, by the end of 2022, France's GDP will still be 15% lower than pre-crisis indicators. In this scenario, wages are massively reduced, and the unemployment rate reaches 20% (INSEE, 2020)[7]. In this situation, both supporters of leaving the EU, the Euro zone, and supporters of “real federalization of Europe”, assuming a common budget, have become more active. In General, the imminent recession leaves many countries with a tough choice: long-term quarantine and saving lives – or saving businesses. Another potential weak point of the companies can be breaks in supply chains. Major technology companies (Huawei, Xiaomi and Lenovo) announced the postponement of delivery of their products. Apple, whose production is mainly localized in China, may also suffer from the coronavirus pandemic. Another sector that will feel the outbreak of the coronavirus pandemic is the aerospace sector. The international Association of air carriers in its report stated that the projected losses of airlines around the world due to the spread of the coronavirus may amount

to up to 113 billion dollars. As a result, many carriers will leave the market, as the British Flybe line recently did. Lufthansa, the German state-owned airline, decided to land 150 planes and cut the grid in half. To avoid additional mass layoffs, the line had to turn to the state for help. At the moment, carriers are doing everything possible, including sending employees on paid and free holidays. But in the long run, there may be problems associated with such a solution. Already, the aviation sector's stock prices have fallen sharply. For example, for Norwegian airlines, Norwegian Air Shuttle shares are the cheapest in 15 years. The international Association of air carriers (IATA) has issued a call for airports to stop punishing carriers who do not use their slots, i.e. temporary take-off and landing sites. There is no denying that the aviation and tourism sectors are closely linked. This pattern is still in place. According to recent estimates, the tourism sector will lose up to $ 820 billion due to the pandemic (Eurostat, 2020)[6]. This is the result of many canceled tours and business trips to limit the spread of the coronavirus. Calculations of the consequences of the COVID-19 epidemic lead to a comparison with wartime, as indicated by the German authorities, who said that saving lives is the main thing. Thus, only two things are most important: after the removal of the quarantine, you need to have a clear plan for reviving the economy, and before the removal, you need to monitor and model the situation (as is already done in EU countries), so as not to delay the quarantine longer than necessary. Otherwise, economic woes will outweigh everything.

2.1.3. Forecast of global economic transformation after the pandemic

Global cataclysms usually determine long-established trends, turning them into irreversible shifts. The current epidemic is likely to mark the ultimate triumph of the digital economy. Of course, most of the world will remain in physical shape — people will eat, dress, travel in cars and planes, they will be refueling with gasoline for a long time, and so on. However, the relationship between the digital and the physical in our picture of the world will change dramatically. Previously, the “figure” was a part of the whole, a rapidly growing and increasingly visible, but strictly limited area. Now the world will become digital by default, the physical will become a part of it, a very big, very important part, but a part. Recently, there have been many publications describing the economy and society after the pandemic. There are several main trends. First, there will be unemployment in the service sector. This means that there will be a huge number of unemployed people without unique skills, including managers. Secondly, there will be a stable habit of working remotely, which means that there will be a permanently self-isolated society. Third, remote education will be the norm. To this, as a rule, is added the idea of harmony with nature and environmental responsibility. The collapse of the global market, the apotheosis of which was the pandemic, completely deprives the service sector of sources of development and even stable existence. Of course, in recent years, the stagnation of this sector has also been influenced by Internet Commerce, but the main source of the service sector's misery is the fall in the total value added of Western countries, and the shift of key supply chains to third countries. Now, when the West has instantly become impoverished by about 10-15% of its GDP, the process of curtailing world trade will become colossal. The coronavirus will cause the collapse of the modern world order. A long economic “ice age” will follow, national conflicts will escalate, borders will close, protectionism will prevail, and military conflicts are not excluded. The atomization of society will continue: more and more events will be held online, major festivals, performances, lectures will be canceled, shopping centers will be closed, and purchases will also be made mainly via the Internet. Work at home and online services, including medical consultations, will prevail. In general, it is worth noting that the growth of expenditures on the health sector is observed in the context of both economic growth and the economic crisis, although during the crisis a slight drop in the growth rate of healthcare expenditures is noticeable. An analysis of the structural dynamics of expenditures reveals a more significant increase in private payments compared with

government payments in the pre-crisis, post-crisis, and crisis periods(Mamedov Z.F., Mamedova S.K., Mirzaev M.R., 2019, p. 44) [9]. Moreover ehe healthcare and pharmaceutical industries will be given an additional incentive to develop. It is also worth noting that the telemedicine industry has already been increasing profits since the beginning of the COVID-19 pandemic. This year alone, shares of some of the largest companies in the industry, i.e. China's Ping An Healthcare and Ali Health, have risen by 33% and 74%, respectively. Another company, JD Health, reported an increase in online consultations to 2 million per month since the start of the COVID-19 pandemic. It is estimated that if it were not for the growing number of coronavirus infections, it would take them at least 5 years to achieve this result. The Chinese telemedicine market alone could be worth up to $ 29 billion at the end of the year (McKinsey&Company, 2020)[10]. The coronavirus outbreak and patients ' desire to avoid crowded places such as hospitals and medical clinics, for example, are an ideal opportunity to persuade potential clients to consult a doctor online. In this regard, many telemedicine companies have taken a number of measures to combat the coronavirus pandemic, which, however, from a purely business point of view, are very good marketing steps. Therefore, many of these companies offer free consultations (of course, while we are in a situation where the number of coronavirus infections is constantly increasing). For example, the company Ping An, began distributing free antibacterial masks throughout China. It is estimated that such actions should make at least a third of the 10 million people who have used telemedicine services in the past month become regular customers. Interestingly, half of these 10 million patients used online consultation for the first time during this period. This transformation will have much broader implications than just developing online sales channels for end consumers and industrial customers. There is a huge uncertainty facing humanity. No one knows how the behavior of ordinary citizens, investors, and governments will change as a result of the crisis (Echazu, Nocetti, 2020)[5].

3. MEASURES TO RESTORE THE ECONOMY AS A RESULT OF THE PANDEMIC

At the moment, economic growth has slowed down, because transport communications are disrupted, the factories do not receive components, and workers are forced to stay at home. In this regard, it is important that States and Central banks contribute to the recovery of the economy, so as not to allow the crisis to become prolonged and draw significant sectors of the economy into the vortex. As a result of the current crisis, enterprises will build their production chains more carefully. Many people will think about manufacturing components at home or in nearby countries, instead of importing them from China. In other words, the process of regionalization, or the formation of new economic zones, will continue. The German government has already called for an end to “excessive” globalization in this regard. If the virus is resistant and no vaccine is found, the crisis will escalate unpredictably. Then the world economy will face really hard times, but this option is still unlikely. Then there will be a huge uncertainty for humanity. In any case, the economy will need help from States and Central Banks: exchanges need to be saved from collapse, and businesses need to be saved from ruin. During the 2008 crisis, States have already demonstrated that they can contribute very effectively to stabilization. However, the situation today is worse than in 2008, for the following reasons:

1. The total debt of the G20 countries is much higher than in 2008. Then it was 200% of the total GDP, today, according to the Bank for international settlements in Basel, it has reached 240%. This means that the risk of potential collapse is higher than in the case of Lehman Brothers bankruptcy;
2. The Freedom of maneuver for Central banks and Finance ministries has become lower. In contrast to 2008, in many countries, Bank interest rates are close to zero, and government debt is much higher.

In the event of a major global recession, Central banks will be forced to buy up government debt on a scale never seen before. The US Federal Reserve (FRS) has announced coordinated actions with the five most important Central banks in the world, that is, the European Central Bank, the Bank of England and the Central banks of Japan, Canada and Switzerland.

Their goal is to ensure the liquidity of the global financial system. The fed's first step was to loosen Bank reserve norms to increase the supply of loans. All the listed Central banks also intend to offer three-month dollar loans with an interest rate lower than it is now. Such actions are intended to ensure that the world's banks still have sufficient access to US dollars to provide loans to entrepreneurs working outside the US. The fed's actions closely resemble its policies during the financial crisis. According to experts, this means that Central banks fear that the coronavirus pandemic will lead to a slowdown in economic growth and a recession. Economists know that concerns about the economic situation and General uncertainty in financial markets cause concern for investors who resort to the safest currencies. Disrupted supply chains due to the spread of coronavirus cause supply shock. The growing fear of the COVID-19 virus, in contrast, is causing a demand shock. Another problem that businesses are currently facing is maintaining liquidity. Companies that have lost a source of profit still have to reduce taxes and pay salaries. Tax cuts during the pandemic period can reduce the risk of bankruptcy and insolvency of many entrepreneurs. More and more companies are also using the tactic of reducing the working hours of all employees, which is an alternative to layoffs. In China, banks have introduced a special offer for lending to businesses in need of support. In addition, Chinese financial regulators ordered creditors to delay debt collection from small companies that had to suspend their operations due to the covid-19 virus outbreak. These actions concern debts totaling several trillion yuan. The world's most important financial institutions and governments are trying to stop the spread of the virus. By far, some of the most important investments during a pandemic are grants to hospitals and increasing as many available health services as possible. In the UK, the idea to bring retired doctors back to work to fight coronavirus has recently emerged. China sent 40,000 workers to Wuhan province, where the first cases of the COVID-19 virus were recorded in December 2019. International financial institutions have also joined the fight against the COVID-19 pandemic. The world Bank and the international monetary Fund have allocated a total of $ 62 billion to a special Fund to fight coronavirus (IMF, 2020)[8]. National governments also allocate funds to minimize the effects of COVID-19. For example, the us Congress has allocated $ 8.3 billion for this purpose. A modest recovery in global production is expected in the second half of 2020, provided that the spread of the coronavirus is largely contained worldwide and that there is no second or third wave of pandemics. However, the impact on confidence and demand will be long-lasting. The uncertain epidemiology of the virus, the expected diverse effectiveness of containment measures and the assumed persistent economic damage under the medium and severe scenarios would continue to weigh on the economic recovery throughout the horizon. Under the severe scenario, in particular, real GDP is expected to remain well below the level observed at the end of 2019 until the end of 2022. Increasing uncertainty will lead to increased safety savings among people and delay business investment. Some consumers may also continue to isolate themselves even after government bans are lifted for fear of infection, which will limit the recovery of private consumption. At worst, if efforts to contain the pandemic depletion of budget revenues and a sharp increase in public spending in developed countries, this could trigger a sovereign debt crisis. This is compounded by the fact that many of the European countries most affected by the pandemic, such as Italy and Spain, already had weak financial positions before the outbreak. A potential debt crisis in any of these countries will quickly spread to other developed countries and emerging markets, leading to another downturn in the global economy.

4. CONCLUSION

In contrast to the great Depression, the main States of the world today have powerful monetary means of redistribution in their hands. Despite deferrals and credit benefits, despite defaults, banks will be supported in the right amount, and the financial system of the world will work almost correctly (only it will become even more centralized). Governments and Central banks use their emission capabilities to partially cover the loss of income of their citizens by direct subsidies to those in need. Major economies have already directly announced such programs, and the total amount discussed exceeds $ 10 trillion (more than 12% of GDP). But this does not mean that all economic agents will be able to survive the six-month shock of falling consumption and restrictions in work. We will certainly see a significant increase in bankruptcies and defaults, takeovers and changes of ownership, nationalizations and buyouts. And while physical and intangible assets will remain intact, the business landscape after the epidemic will, of course, be very different from the current one. Despite the shortage of timely hard data, it is already clear that there has been a decline in economic activity of an unprecedented magnitude. The scenarios vary according to a number of factors, namely the duration of the strict lockdown measures and their impact on sectoral economic activity, the economic effects of protracted containment measures during a post-lockdown transition period, the behavioural responses by economic agents to minimise economic disruptions, and the longer-lasting effects for economic activity once all containment measures have been lifted. Ultimately, rapid and decisive containment and economic policy measures – besides an effective medical solution – will be crucial to ensuring a robust recovery of economic activity. However, one day the epidemic will end. Businesses that create really necessary products (whether food, manufactured goods, or services) will not be affected, unless their businesses were over-leveraged before the epidemic and were unable to get liquidity support. In fact, other businesses will not be affected-those that had a liquidity cushion sufficient to cover fixed costs, a positive unit economy, and reliable sources of funding. The healthcare and pharmaceutical industries will be given an additional incentive to develop; additional grants – researchers-immunologists. The world will become much more "online": after trying and getting used to it, an order of magnitude more people will work from home, shop, make deals and organize negotiations on-line. There will come a time of great acquisitions: online services that have only strengthened their positions during the quarantines will absorb those offline ones that still have value. States will spend large amounts of money on improving tracking and testing systems, nationalizing critical industries, and building systems to respond to a new type of global crisis – "epidemicones". Borders, registrations that were already beginning to lose meaning, will again become an important element of our life. There will be far fewer people in the world who support "freedom of private life" and far more who do not want to die because of the carelessness of others. After the end of the epidemic, there will be a huge amount of money left in the world, thrown by States into the economy in the process of "war". This will mean rapid growth in the value of many types of assets, increased inflation and, most likely, a gradual reduction in the debt bubble. A couple of years after the end of the epidemic, there may be a period of long-term growth in stock prices and a period of stagnation in debt markets: negative rates are not interesting to anyone, there is a lot of money, and the economy is growing. As a result, we can conclude that the coronavirus epidemic will entail a major economic and geopolitical crisis. With the development of the situation in the world, the traditional part of the economy will go into stagnation. The coronavirus will cause the collapse of the modern world order. A long economic "ice age" will follow, national conflicts will escalate, borders will close, protectionism will prevail, and military clashes are not excluded. The atomization of society will continue. Work at home and online services, including medical consultations, will prevail. This transformation will have much broader implications than just developing online sales channels for end consumers and industrial customers.

There is a huge uncertainty facing humanity. No one knows how the behavior of ordinary citizens, investors, and governments will change as a result of the crisis. For the world economy coronavirus is another powerful promise for structural adjustment of the market.

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FORECASTIC CONTOURS OF THE DIGITAL ECONOMY IN THE FUTURE

Sevinj Abbasova
Azerbaijan State University of Economics (UNEC)
Baku, Istiqlaliyyat str., 6, AZ1001, Azerbaijan
sevinj.abbasova@yandex.ru; sevinjabbasova@unec.edu.az

Inna Bagautdinova
Ufa State Aviation Technical University
Ufa, Karl Marx St., 12, 450008, Russia
Inna.bagautdinova@yandex.ru

Irina Degtyareva
Ufa State Aviation Technical University
Ufa, Karl Marx St., 12, 450008, Russia
idegtyareva57@mail.ru

ABSTRACT

The article is devoted to the analysis of the unprecedented influence of the digital world on the life of every person, every home and organization, business and society as a whole. Along with these changes comes the digital economy, which is estimated at 23 trillion US dollars. In the coming years, a quarter of the world's economy will already be involved in the process of digital transformation. From a futuristic forecast, digital transformation turns into a familiar reality, and in parallel with the creation of broad opportunities, serious risks are generated. One of the main trends of the present time has been the penetration of digital in the industry, which has traditionally been offline. This fact allows us to talk about a universal digital transformation and the formation of a digital economy. Today, the digitalization of the global economy has entered an active phase. The new reality is formed on the basis of an advanced information and telecommunication environment, designed to manage both individual units (via the "Internet of things") and groups of people, machines, technical, including information, as well as systems and natural objects (through "Internet of things"). The article shows that data will become a productive force in the intellectual environment and will create intelligent interaction algorithms for people in all scenarios, as the integration of the digital and real world deepens. Data will become an inexhaustible resource. Smart technologies will decide how the value of data will be transformed and transmitted. Network connections will carry large amounts of data, facilitate data exchange, and make the value creation process more intelligent. There will come a time of great acquisitions: online services that have only strengthened their positions during the quarantines will absorb those offline ones that still have value.

Keywords: *Artificial intelligence, Digital economy, Digital transformation, Internet of things, Hypernet, New reality, Smart technologies*

1. INTRODUCTION

One of the main trends of the present time has been the penetration of digital in the industry, which has traditionally been offline. This fact allows us to talk about a universal digital transformation and the formation of a digital economy. Today, the digitalization of the global economy has entered an active phase. At the World Economic Forum in Davos, the forthcoming fourth industrial revolution was announced. This process is characterized not only by the merger of sciences and technologies, but also by leveling the boundaries between the physical, virtual (electronic-digital) and cognitive-biological spheres.

The manifestation of qualitatively new information, communication and computational capabilities in the managerial sphere is the dominant feature of the fourth industrial revolution. In fact, this revolution is being realized through the possibilities of constructing a new socio-economic reality. The new reality is formed on the basis of an advanced information and telecommunication environment, designed to manage both individual units (via the "Internet of things") and groups of people, machines, technical, including information, as well as systems and natural objects (through "Internet of things"). In parallel, the processes of realizing human capabilities and satisfying needs are integrated with artificial intelligence services and are moving from the material sphere to virtual space (Vinod Kumar, 2020). Currently, the world economy is in the process of creating a convergent hypernet, formed through the convergence of information-control networks, intelligent sensors, etc. Actively developing post-industrial concepts of monitoring and control systems (Internet of Things – "Internet of Things", Smart Grid – "smart networks", RFID tags – radio frequency identification, etc.). They are designed to integrate in network-centric information space data about objects that differ in purpose and location, as well as about people, machines, technical systems, natural objects. It is expected that a converged hypernet will allow the formation of a set of globally interconnected and synchronized intelligent management spaces, thus contributing to the emergence of effective systems for the operational prevention of potential crises. In the foreseeable future, key technologies, namely: 5G, cloud services, Internet of things (IoT) and artificial intelligence (AI), will unite and complement each other, continuously creating added value of unprecedented size! It should also be noted that the fourth industrial revolution is based on multifunctional monitoring, it concentrates latent approaches to a fundamentally new filling of global emissions of world currencies (dollar, euro, yuan, pound sterling, etc.). Moreover, non-traditional industrial products and / or information services will act as their support. It should also be noted that the new «corona-reality» and forced self-isolation of the entire world accelerate the implementation of the digital economy.The world will become much more "online": after trying and getting used to it, an order of magnitude more people will work from home, shop, make deals and organize negotiations on-line. Work at home and online services, including medical consultations, will prevail. There will come a time of great acquisitions: online services that have only strengthened their positions during the quarantines will absorb those offline ones that still have value. There will be a stable habit of working remotely, which means that there will be a permanently self-isolated society, remote education will be the norm. States will spend large amounts of money on improving tracking and testing systems and building systems to respond to a new type of global crisis – epidemical.

2. PRODUCTION SPHERE IN THE FUTURE

In the near future, a qualitatively different virtual structure of reality will appear as a shell where a person will be located, who will be both a creator, an operator, and a client. As a result, in the new "smart" world, the ubiquity of sensor technology, high-speed connections and knowledge sharing will lead to tremendous growth and create additional value. It all comes down to the fact that data will become an inexhaustible resource. Intelligent technologies, in turn, will decide how and due to what exactly the value of the data will be transformed and transmitted. Network connections, transferring large arrays, will actively facilitate the exchange of data. As a result, the process of creating value will become even more intelligent. According to GIV forecasts, by 2025 there will be 40 billion personal AI-based smart devices in the world, 90% of which will be equipped with a personal assistant with AI elements. At the level of business and society, by 2025 there will be about 100 billion network connections in the world that will contribute to the transition to digital technologies in such areas as utilities, transportation, manufacturing, healthcare, agriculture, TVO and finances. By then, 85% of enterprise applications will be in the cloud, 86% of multinational companies will implement artificial

intelligence, and the share of data usage will skyrocket to 80%. This means that up to 180 billion terabytes of data will be generated annually, as a permanent source of innovative intelligent technologies and value creation. So, it is assumed that by the mid-20s. 21st century:

- There will be more than 40 billion smart devices in the world. The role of these devices will evolve from the role of tools to the role of personal assistants, and 90% of smart devices will have the functions of a "smart" assistant with AI elements;
- There will be rapid growth in the segment of portable devices, while more than 440 million applications will use augmented and virtual reality, creating new modes of perception for people;
- The number of users in mobile networks will reach 6.5 billion people. The coverage area of networks with a bandwidth of several gigabits per second will exceed 30%. Access from anywhere will gradually equalize disproportional development between people and regions (GIV 2025, 2018, 3).

The use of IoT technology will inevitably provide every person, thing or device with a "digital label". The ability of all things to perceive will have a direct impact on the development of sectors of the economy and society. As the Internet of Things evolves, "digital tags" will be posted at facilities around the world. All objects will gradually connect to the Internet: vehicles on the road; equipment in factories; transported containers; aircraft engines; environmental monitoring equipment and much more (Charity, Hua, 2016). Large amounts of data generated due to the ability of objects to perceive will be actively integrated in all industries, forming new industries, such as the Industrial Internet of Things and "Connected Cars". They will create a critically important new driver for the development of the "smart" world and the development of new intelligent services. The concepts of "all sensory" and "all connected" will produce explosive growth in data volumes, providing huge amounts of source material for the "smart" world. As cloud services and smart technologies grow in popularity, large amounts of data will be transformed into intelligent decision-making capabilities and will become the main driving force for various sectors of the economy (Bolívar, 2018). Industries can use their unique information resources and knowledge to develop the ability to perceive and recall data, as well as suitable intelligent algorithms. This will enable digital mapping of industrial capacities and transform data from a production resource into an intelligent source of innovation (Akhilesh, Möller, 2020;).

2.1. Intelligent manufacturing

Based on the Foundation laid by the concept of smart production, the "smart" world will have individually developed programmable production models. Large-scale traditional production will be completely excluded. With the support of 5G technology, smart cloud services, smart IoT, multi-functional robots, three-dimensional printing and other intelligent infrastructure, digital twins at the enterprise level will eventually lead to the creation of programmable production. Universal enterprises will be able to adjust the product line and production parameters in real time in accordance with incoming production commands. This means that businesses can quickly move from one product category to another, and even move from one industry to another in accordance with production requirements. Traditional production is often limited to too complex product categories. When an innovative product is launched, it is often necessary to find a compromise between reducing the labor intensity of production and increasing the savings due to the growth of production scale. This requires time and significant costs. It is often extremely difficult to achieve a real balance between supply and demand in the market. In a "smart" world, universal businesses will meet a wide range of personalized production requirements. Production lines with the same scale of production will cease to exist, and the entire environment within and outside the industry will provide the main parameters for

the competitiveness of specialized innovations. This change will allow companies to respond to market demand with completely new business models. Workers will control the processes using virtual and mixed reality, as if they were directly in front of the machines:

- Production will no longer be limited to multiple individual units of equipment. Each stage of production will be performed by a multi-functional robot: production and shipment or data analysis, everything will be done in a cloud environment, managing robots that perform a wide range of tasks based on business requirements;
- The software will be used to create universal virtual production templates and open parameter adjustment and analysis. In other words, you will not just create sedans, SUVs, or minivans that can be produced simultaneously using the main template. Programmable manufacturing will be based on the power of new materials, making it possible to manufacture motorcycles, cars, bicycles, and even mobile phones or pens on a single template. You can adjust parameters such as color, model, and technical parameters in seconds. This will be a sign of the emergence of universal production - the ability to produce different types of goods simultaneously, using the same equipment;
- From the user's point of view, “one-click smart manufacturing” will mean the complete process from placing an order by a mobile network user to organizing automated production, creating a finished product and delivering it personally to the user. Business processes and production processes will be streamlined to allow real-time data collection. Monitoring equipment and power supply will become easier and more visual. Traditional scaled production lines will cease to exist.

2.1.1. Industrial development. Manufacturing in universal factories

The factory of the future will mainly have various robots that regulate the parameters of the production line. The warehouse will have an automatic packaging system. The laboratories will be equipped with a system for automatic monitoring of products and repair of parts. The project Manager computer will display real-time data from products, source materials, employees, and other sources. At the same time, research staff in the digital simulation lab will use smart portable devices to perform interactive testing of real-world scenarios. Thanks to the industrial Internet, 5G technology, cloud services, intelligent robots and 3D printing technology in such a factory, real equipment will work simultaneously with the movement of large amounts of data (Kniaziev, 2017; Smart Industry, 2018). A bridge is formed between material and digital production, as well as the base on which the production line and plant build their digital counterparts. The plant itself will be just one of the links in the intellectual technological chain. Digital research and development, dynamic execution, synchronized planning, interconnected customers, intelligent delivery, and other features will evolve along with the increase in the number of connections and their ability to perceive. Distributed data will be connected and intelligently combined to streamline the entire supply chain and product development cycle. The actual production and delivery, as well as the consistency of the enterprise's production operations, will be stimulated by data. Intelligent product identification and sorting, intelligent route planning, intelligent packaging, Autonomous intelligent transportation, and intelligent inventory management based on cost forecasts, product demand, and other elements will allow businesses to increase efficiency and reduce costs, creating unprecedented economic potential. According to experts data, the number of units of industrial equipment connected to the network will reach 26 billion by 2025 (Manyika, Lund, Bughin et al., 2016).

2.1.2. Agricultural development

The use of the Internet of things in agriculture, based on narrow-band Internet of things technology, will gradually expand (TongKe, 2013; Gondchawar, Kawitkar, 2016). The widespread use of sensors will make data storage unnecessary, and data integration will be

carried out from every plant, every animal, every farm at every stage of production. All information-from plant and animal health, biological cycles to production volumes and data on water supply, processing, transportation, safety control and other stages of agricultural production – will serve as a source for the application of "smart" technologies. Together with hundreds of millions of connections, such data will increase the productivity of large agricultural enterprises (Lipper, L. et al., 2014). In the future, more than 1 billion cows will be provided with "digital labels" connected to the network. 525 million farms around the world will use a total of 600 million sensors connected to the Internet of things. The use of the Internet of things in agriculture will eventually extend to the entire field of industrial livestock and feed production and will become a "smart shepherd" for managing this type of activity . Using this technology to track animal health, physiological cycles, location, and other information will pave the way for the future development of feed control technology and other new applications based on "blockchain" technology (Zamora-Izquierdo et al., 2018; Fill, Meier, 2020; Patnaik, Sen, Mahmoud, 2020; Singh, Rajput, 2020).

2.1.3. Development of transport and communications

The space in which people work will be expanded with the concept of Digital sky. The sky is rapidly being digitized by the development of the drone industry and the application of 5G connectivity technology (Lokshina, Zhong, 2019). Forecasts show that the market for miniature drones will grow rapidly, reaching us $ 33.9 billion by 2026, compared to $ 5.3 billion nowdays (GIV 2025, 2018, 54). These scenarios will include the use of networked drones used for transportation, surveillance, emergency rescue, and other urban management functions that will not be limited to direct communication between drones and remote control devices. On the contrary, the search for business opportunities will occur in the connection between drones and other drones and even between drones and people, revealing a huge economic potential. Autonomous passenger aircraft will act as an infrastructure to support the air taxi business model. They will take off like helicopters, fly like planes, and they will not need runways or special landing pads. Using vertical takeoff and landing aircraft will be similar to a Bicycle rental model. Space for flying in the air is a shared resource, where the routes are organized with the help of smart technologies on the basis of the data. Also, by the end of the 20s of the XXI century, 6.5 billion people (80% of the World's population) will use the services provided by mobile networks. In 2025, 77% of the World's population will have Internet access, and 70% of people will have access to mobile networks with a bandwidth of several gigabits per second. In the same period, 75% of households will have access to broadband networks, of which 30% will have access to broadband Gigabit networks. As a result, the uneven distribution of connections between regions will be leveled, and the number of connections in developing countries around the world will reach 7.5 billion (GIV 2025, 2018, 45). Connections in the "smart" world will create more equal opportunities for different regions and cities at different stages of development (Vinod Kumar, 2017; Liu, 2019; Mahmood, 2018; Mboup, Oyelaran-Oyeyinka, 2019). At the same time, the powerful network effects of technologies such as cloud computing, the Internet of things, and AI will be a direct catalyst for new opportunities for smart cities, smart agriculture, smart manufacturing, Autonomous driving, and other industries in the "smart" world (Riva Sanseverino, 2014; Mahmood, 2018). Note that as video usage drives exponentially growing data traffic, smart connections will help industries monetize this data and benefit from it. By the mid-20s, the average volume of data usage in communication systems around the world, per person, will grow by 10 or more times. The average amount of data usage in mobile networks per user per day will increase by at least 30 times, the lion's share of which will be video materials. There will also be new opportunities to profit from large amounts of high-resolution video data, and video will generate "smart" value in cloud gaming, education, and healthcare (Srinivasan, 2016).

Using IoT technology for more continuous and consistent monitoring of patients with chronic diseases can help patients avoid medical crises, hospitalizations, and complications (Lemayian, Al-Turjman, 2019). Monitoring with conventional tools has fewer benefits for four reasons: 1) they provide only episodic readings (when blood is drawn, for example); 2) tracking must be done in high-cost settings such as hospitals, which leads to treatment avoidance; 3) patients often fail to adhere to prescribed treatment; and 4) a limited ability to identify problems in a timely manner before they develop into costly or even fatal conditions. Even in advanced economies with electronic health records, physicians only have the patient information that they can gather in office visits, from tests, or, in the case of some chronic conditions, from self-reporting by patients. Episodic readings limit the ability to promote patient adherence (taking medications at the correct times and in the proper dosage) and encourage lifestyle changes (adjusting diet and exercise regimes). Non-adherence to treatment and lifestyle changes is a major source of complications and higher costs. Failure to take medication properly can triple the costs of treating a chronic disease patient when non-compliance leads to emergency room visits, readmissions, and new disease complications. Finally, without access to continuous time series of data, physicians often cannot detect critical changes in patient conditions early enough to prevent emergencies (Holzinger, Röcker, Ziefle, 2015). For example, a doctor with access to real-time data on warning signs such as a sudden weight gain in a patient with chronic heart failure (likely indicating water retention) would be able to identify likely exacerbation before hospitalization is required.

2.1.4. Using IoT technologies to bring better health care to remote and underserved areas

Using IoT technology for more continuous and consistent monitoring of patients with chronic diseases can help patients avoid medical crises, hospitalizations, and complications. Monitoring with conventional tools has fewer benefits for four reasons: 1) they provide only episodic readings (when blood is drawn, for example); 2) tracking must be done in high-cost settings such as hospitals, which leads to treatment avoidance; 3) patients often fail to adhere to prescribed treatment; and 4) a limited ability to identify problems in a timely manner before they develop into costly or even fatal conditions. Even in advanced economies with electronic health records, physicians only have the patient information that they can gather in office visits, from tests, or, in the case of some chronic conditions, from self-reporting by patients. Episodic readings limit the ability to promote patient adherence (taking medications at the correct times and in the proper dosage) and encourage lifestyle changes (adjusting diet and exercise regimes). Non-adherence to treatment and lifestyle changes is a major source of complications and higher costs. Failure to take medication properly can triple the costs of treating a chronic disease patient when non-compliance leads to emergency room visits, readmissions, and new disease complications. Finally, without access to continuous time series of data, physicians often cannot detect critical changes in patient conditions early enough to prevent emergencies. For example, a doctor with access to real-time data on warning signs such as a sudden weight gain in a patient with chronic heart failure (likely indicating water retention) would be able to identify likely exacerbation before hospitalization is required. Overall, McKinsey experts estimate that the use of IoT technologies in human health applications could have an economic impact of $171 billion to $1.6 trillion globally in 2025. The largest source of impact would be in treating patients with chronic diseases, which could be worth nearly $1.1 trillion per year globally. This is based on two sources of value – cost savings in treatment and the value of longer lives and improved quality of life that patients with chronic conditions could enjoy if IoT monitoring helps them avoid disease complications (Manyika, Chui, Bisson et al., 2015, 7).

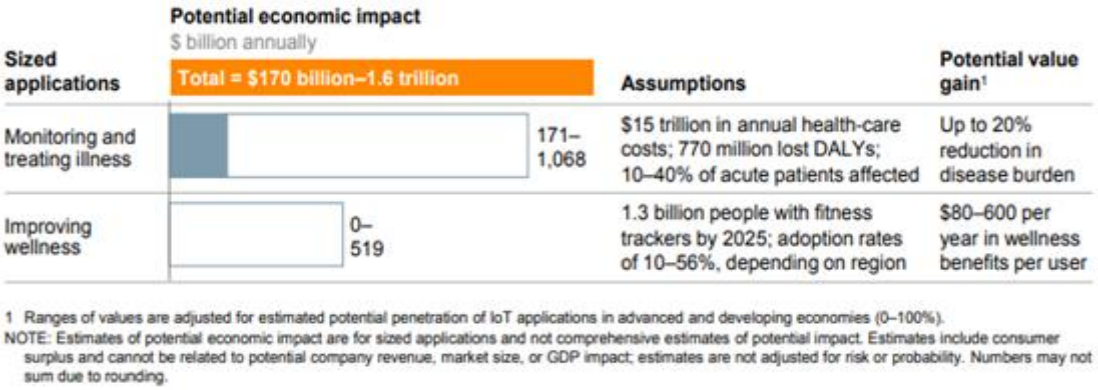

Figure 1: Human health: Potential direct economic impact of $170 billion to $1.6 trillion per year by 2025
(Source: Manyika, Chui, Bisson et al., 2015, 39)

3. OPPORTUNITIES AND THREATS OF DIGITALIZATION

The digital era involves the generation of unlimited data. It is estimated that the volume of global data will grow to 180 sextibytes (180 billion terabytes) by 2025. About 90% of the data generated so far has been created and accumulated in the last 2-3 years. This way, in the future, only connected data will be able to create value. Migrating all companies to the cloud will help traditional companies make good use of the large amounts of data they have accumulated over a long period of time. Data will become the "new oil" that will cause a new "fever around black gold". Every connection that has the ability to perceive will become an "oil well" that pumps out data. This data will be sent to "processing plants" in the form of cloud services and artificial intelligence. They will extract the data, transfer them and extract from them the value of using intelligent technologies. The intellectual resources processed in this way will be returned to the user for consumption. This cycle of data movement will become the main process that stimulates the development of the "smart" world. The Internet of Things has transformative potential for many types of participants and stakeholders. Technology suppliers are presented with the opportunity to develop new and valuable systems and create new sources of revenue and lines of business. Businesses that adopt IoT systems can improve operations and gather greater insights for datadriven decision making; some will have the opportunity to build new businesses with IoT technology and data (Bhayani, Patel, Bhatt, 2016). Consumers will have the most to gain – perhaps years of life from IoT health applications and safer transportation, greater convenience and time savings, and less costly goods and services. To build competitive advantage in the IoT market, technology suppliers will need to create distinctive technology, distinctive data, software platforms, or end-to-end solutions. Those that fail to do so risk commoditization and loss of business. Business users of IoT technology will need to change their systems and organizations in order to make the most of the Internet of Things. They will need to invest in capabilities, culture, and processes as well as in technology. Businesses that fail to do so are likely to fall behind competitors that do. Smaller companies will need to find ways to obtain data on the scale required to compete with larger companies that will have access to sufficient data in-house. While consumers stand to reap the greatest benefits from the Internet of Things, they will have to balance potential benefits with privacy concerns. They can gain access to an unprecedented amount of information about themselves and the world around them that can improve their quality of life. But consumers will have to be discerning about how they engage with that information and with whom they share it. Finally, policy makers and governments will have to ensure that these new systems are safe and that IoT data are not being stolen or abused. They can help to balance the needs for privacy and protection of private data and intellectual property with the demands of national security.

With vital infrastructure connected to the Internet, security threats will multiply, which governments will need to address. Policy makers also have an important role in enabling the Internet of Things by leading and encouraging standards that will make interoperability and widespread adoption possible.

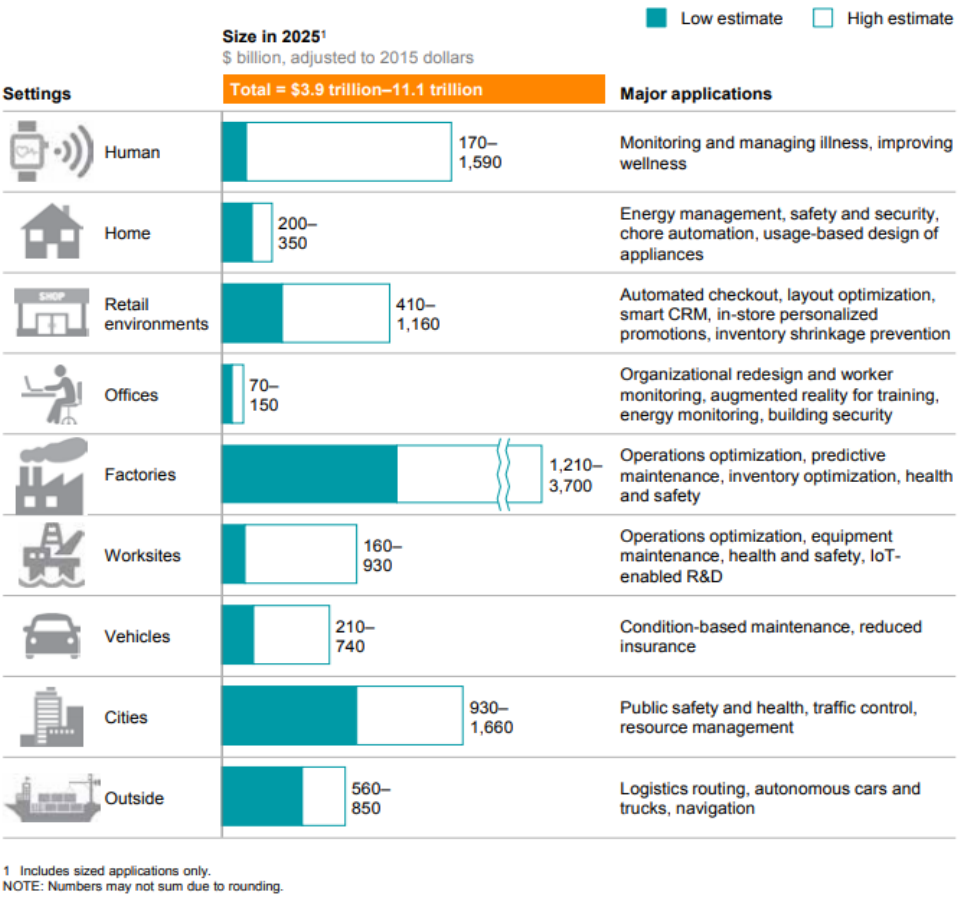

Figure 2: Potential economic impact of IoT in 2025, including consumer surplus, is $3.9 trillion to $11.1 trillion
(Source: Manyika, Chui, Bisson et al., 2015, 36)

The Industry 4.0 applications enabled by the Internet of Things are expected to create a new surge of factory productivity. While factory automation (Industry 3.0) helped improve the performance of all sorts of factories around the world in the past few decades, there are considerable opportunities beyond standard factory automation. For example, once machines are interconnected and managed by IoT sensors and actuators, it is possible to improve asset utilization significantly by using auto-sensing equipment to eliminate many of the human and machine errors that reduce productivity (Dustdar, Nastić, Šćekić, 2017). Remote monitoring, tracking, and control of equipment and workflow can produce additional savings, including substantial energy savings. And using sensors to determine when machines need service can prevent breakdowns and save on routine maintenance costs. However, there are at least several major challenges that humanity needs to overcome. The first is the need for an even distribution of technologies. The second aspect is that we need to find a balance between privacy and the use of data for public safety. The third is to maintain a balance of cultural characteristics and economic interests, avoiding the critical scenario of Balkanization of the Internet. All this can be resolved only through a global consensus. The next one is necessity to protect data from billions of devices from unauthorized access and also to deal with new categories of risk that the Internet of Things can introduce.

Extending information technology (IT) systems to new devices creates many more opportunities for potential breaches, which must be managed. Furthermore, when IoT is used to control physical assets, whether water treatment plants or automobiles, the consequences associated with a breach in security extend beyond the unauthorized release of information – they could potentially cause physical harm (Samuel, 2020). One of the most significant threats associated with digitalization is the prospect of mass unemployment among lower-and middle-skilled professions. A radical reduction of the middle class is possible, since these jobs will be automated and "replaced by robots" in the first place. A significant part of the active educated working-age population, accustomed to a fairly high standard of living, will be "on the sidelines of the Western way of life". Thanks to new opportunities, a huge amount of money is created, a significant part of which comes from IT companies. Using software changes companies, makes their employees smarter, and if you don't take advantage of these opportunities, the market will go to those who do. This paradigm will definitely continue for the next two decades.

4. CONCLUSION

The digital era involves unlimited data generation. Global data is estimated to grow to 180 sextibytes (180 billion terabytes) by 2025. Migrating to the cloud of all companies will help traditional companies use the large amounts of data they have accumulated over a long period of time. The data will become the "new oil" that will cause a new "fever around black gold". Each perceptual compound will become an oil well pumping data. This data will be sent to the "processing plants" in the form of cloud services and artificial intelligence. The intellectual resources processed in this way will return to the user for consumption. This cycle of data movement will become the main process stimulating the development of the "smart" world. According to forecasts made by Huawei and Oxford Economics in a Digital Spillover report on the prospects for the development of the digital economy until 2025, long-term profits from the use of ICTs will be 6.7 times higher than in other industries. Data flows will change the face of economic sectors, give birth to new intelligent industries and go beyond the current path to achieve high rates of development. Experts believe that the digital world will be formed at such a speed, entailing a shortage of relevant personnel. It is possible that the emergence of AI systems that will unload a person and free them from a lot of hard and pseudo-intellectual work carries not a threat, but an opportunity. Today, to have a dream job that brings satisfaction and which you can "surrender" with pleasure is, of course, a rarity. A Gallup study in 142 countries found that only about 13%, that is, only one in seven employees, was emotionally involved in their own. Over the past few decades, job satisfaction has tended to decline: from 61.1% in 1987 to 47.2% 25 years later. This means that everyone who is ready for change has time to prepare. At the same time, new smart technologies will be able to create jobs not only in the technological sector, and each technological workplace will potentially generate another five to seven jobs (Dastbaz, Arabnia, Akhgar, 2018; Banat, Paiva, 2020). So, according to preliminary calculations, when creating a single digital market in Europe, it is possible to create up to 4 million new jobs in the region. There also will come a time of great acquisitions: online services that have only strengthened their positions during the quarantines will absorb those offline ones that still have value. States will spend large amounts of money on improving tracking and testing systems, nationalizing critical industries, and building systems to respond to a new type of global crisis – epidemical. There will be a stable habit of working remotely, which means that there will be a permanently self-isolated society, remote education will be the norm. With a balanced approach, taking into account all possible risks, artificial intelligence can turn the concept of routine work into an anachronism. This will help people to show their abilities in the most significant actions: working in conditions of uncertainty, recognizing new things, responding to exceptions. In turn, top management will need to solve even more difficult and complex tasks.

Top executives will need to become intermediaries between the two areas, ensuring the symbiosis of people and machines in making decisions and answers to questions about what actions should be taken to develop a business. It is the top management that will determine the set of factors for the presence of AI in the company: selection, strategy for training and development of systems, quality control of decisions, and, most importantly, the degree of creativity in their implementation. However, the end result of projected changes in the world is not predetermined. It depends on the preparedness of society and the state, as Digitalization creates opportunities that can bring both unexpected threats and new benefits. When the real and virtual worlds merge, a new hybrid world is formed, in which qualitatively new laws and rules will work that are different from what we are familiar with today. But it is clear that the economy of the middle of the 21st century will be both multidimensional and interesting at the same time.

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SIGNIFICANT ISSUES OF ORGANIZATIONAL CONFLICT MANAGEMENT

Nino Paresashvili
Ivane Javakhishvili Tbilisi State University,
1, Chavchavadze Ave., 0179 Tbilisi, Georgia
nino.paresashvili@tsu.ge

Natiq Gurbanov
Azerbaijan State Economic University (UNEC)
6, Istiglaliyyat str, 1001 Baku, Azerbaijan
natik1952@hotmail.com

Badri Gechbaia
Batumi Shota Rustaveli State University
35/32 Ninoshvili/Rustaveli str. 6000, Batumi, Georgia
badrigechbaia@gmail.com

Ketevan Goletiani
Batumi Navigation Teaching University
38, Tamar Mephe Av. 6000, Batumi, Georgia
k.goletiani@bntu.edu.ge

Teona Edzgveradze
Ivane Javakhishvili Tbilisi State University,
1, Chavchavadze Ave., 0179 Tbilisi, Georgia
teoedzgveradze85@gmail.com

ABSTRACT

Considering the situation that conflict arises in the process of human relationships and is an integral part of human life, the process of managing conflict situations in organizations becomes even more relevant, which we must admit is never a simple process. Nowadays, different types of conflicts are identified in organizations, the reasons of which are based on the relationships within the organization. Society may become witness of changes at any moment. These changes penetrate organizations with different scale. However, we must admit that the conflict management process undertaken by different managers can have both positive and negative consequences. There is a great variety of scientific literature from foreign and Georgian researchers.However, if we consider that society is constantly facing new challenges and changes in today's multicultural environment, this issue is continuously in need of control and the search for new solutions. That is why research on this issue is always actual. The main purpose is to show how important conflict management is for achieving organizational effectiveness, how it affects employees' attitudes and working processes, how conflict is perceived. And most importantly, we discuss the causes of organizational conflict and its constituents. All of this is aimed at finding and developing modern organizational conflict management mechanisms.

Keywords: *Effectiveness, Emotional intelligence, Communication process, Organizational behavior, Organizational conflict management*

1. INTRODUCTION

Managers, considering the content of the conflict, situational factors and the expected behavior of the participants in the conflict, should choose the optimal means of resolving the conflictby themselves. Effective management of an organization obviously affects its success. (Paresashvili & Okruashvili, Modern Problems to Form Human Capital in Georgia, 2017).Conflict management is also part of the organization's management. The process of conflict management by different managers can have both positive and negative consequences.

2. THEORETICAL BASES

Today, there are rich scientific literature on organizational conflicts conducted by foreign and Georgian researchers, which analyzes a number of issues directly related to conflict management. One of them is the topic of career development (PARESASHVILI, NINO; GIORGOBIANI, MAIA; NIKVASHVILI, MAIA; PIRTSKHALAISHVILI, DEA; KHARADZE, NATALIA;, 2019). The most important thing for each individual is career advancement and professional growth, in which issues of managing organizational conflicts are quite important, (Paichadze, Nugzar; Kharadze, Natalia; Paresashvili, Nino; Giorgobiani, Maia; Nikvashvili, Maia; Pirtskhalaishvili, Dea;, 2019)., because it is quite difficult to focus on work processes in a contradictory environment.

3. DISCUSSION

Society is constantly experiencing new challenges and changes in today's multicultural environment, this challenge needs intense control and finding new solutions.It is especially relevant in terms of organizational behavior, since the behavior of staff within the organization affects the final results of the organization. Because of this, research on this problem does not lose its relevance. If we take into account the fact that in Georgia today the rights and opportunities of the able-bodied population, especially young people, are very limited, as well as the youth unemployment rate is high,.(Paresashvili, N.; Okruashvili, N.;, 2019)and at the same time the field of employment is characterized by significant peculiarities(Abesadze, N; Paresashvili, N;, 2018), It is quite important to maintain the stability of the psycho-emotional state of the society in the face of global challenges. As all of this has a particularly large impact on interpersonal relationships, it becomes even more important for managers to use modern methods of conflict management in the management process. This is directly reflected in the practical strengthening of management's attention to the activation of the human factor in the use of employees' physical, psychological and emotional potential, thus not only their performance, but also their creative and organizational capabilities.(Paresashvili N. , Questions of the organizational behavior (OB) and labor efficiency management, 2015)Great importance is also attached to the process of managing emotional intelligence(Zeidner, Matthews, & Roberts, 2009). Organizational conflict is one of the leading factors in determining the viability of an organization. It is also significant to study the impact of organizational conflict on staff behavior, which is crucial factor in the existence and development of any organization.(Nikvashvili, 2019) One of the ways organizational conflicts may arise is when implementing reforms becomes a part of daily agenda. Accompanied reorganization and restructuration creates disagreement and sometimes individuals and groups oppose each other. Every element of organization, as a part of social system, provokes changes and disorganization. If we take into account that members of social system have different world views, psychologic types, physical or professional skills, not only social inequality, i.e. different availability and distribution of resources provokes conflicts, but also struggle for power and different attitudes towards prestige, control, motivation, democratic principles and tools for achieving goals. Degradation of society's moral principles, as well as growth of social tension, makes problems and practical ways of their solution more interesting.

If a feedback of conflict has creative and non-destructive nature, then it becomes an origin of constructive, productive solution. Such conflict supports progressive changes and makes development of social system more dynamic. Finally, we have cooperation based on rational compromise. (Paresashvili N. , A Conflict-Eternal and Inevitable Process of Societys Development , 2018). Modern approach is based on the idea that the organizational goals can be achieved through effective management while taking into consideration that the certain level of conflict must also be allowed in order for the organization to develop. According to the researcher, L. Kartashov's opinion, conflicts are essential, because lack of new ideas, old habits and methods could hinder the development of organization. (Lukin, 2007)What should parties do to solve dysfunctional conflict? What is necessary if level of conflict is too high and it is necessary to decrease it? Conflict management regulates these problems with corresponding techniques (Robbins S. P., 2013). A conflict model begins with sources of conflict. We must understand that it is important to reveal episodes of conflict sources and in the case of necessity make correct steps to generate the conflict. The six basic sources of conflict are: incompatible goals; difference; interdependence; scarce resources; vague rules and bad relationships (McShane, Mary Ann Young Von Glinow, & McGraw0Hill Irwin, 2010). Developing the right organizational conflict management tools is crucial for success. Organizational behavior also plays an important role in this process. The philosophy of organizational behavior focuses on and supports human resources. It is committed to improving human environmental conditions and developing human potential.Applying the basic principles of organizational behavior helps to successfully manage organizational conflicts. Reasons for conflict may be a different culture, age, sex, profession, world view, etc. Despite concrete reasons, the action of the individuals is the result of the perception of the reality. (Paresashvili N. , Major Mechanisms to Develop the Strategies of the labour Market in Georgia, 2015) There is also growing interest in emotional intelligence at work, in terms of improving both worker well-being and company productivity. As in education these applications rest in part on truisms, for example, that it is important that employees are able to work constructively with others. It is difficult to argue against the notion that it is useful to train skills such as teamwork, conflict resolution, and leadership. However, as with education it is unclear how much ''added value'' can be attached to emotional intelligence. There has even been backlash against the idea that EI is the panacea for all organizational problems. (Zeidner, Matthews, & Roberts, 2009)Innovations play a crucial role in increasing productivity(Kharaishvili, Innovations for Increasing Productivity in Agriculture and Ensuring Food Security (the case of Georgia), 2020). An efficient mechanism of management of the innovative activity is finding, keeping and encouraging the employees with relevant intellectual potential able to generate new ideas and realize them in life (Paresashvili, NIno; Okruashvili, Nanuli;, 2017). Any organization wishes to achieve the level of the organizational ideology where the efforts, innovative skills and optimism of its employees are realized and achieve the balance both, between the different levels of the organizational culture and different elements of the same level of the organizational culture (Paresashvili, Nino, 2016). According to Kazimoto (2013), workplace conflict is described as the presence of discord that occurs when goals, interests or values of different individuals or groups are incompatible and frustrate each other's attempt to achieve objectives in an organization. It is communication process and an inevitable consequence of transactional relationship manifesting in disagreement and dissonance with and between individuals and groups in the work-environment (Olukayiode, 2015). Engagement of the employees is one of the most important components in the decision-making process. In order to make the best decision, the people with valuable information who can help the company to realize the reached decision must be engaged in the process (Paresashvili N. , Importance of Emotional Intelligencein the Tourism Industry, 2017). The biggest challenge of managing conflict within the organization is also related to workplace diversity.

Some employees are quite while other may exhibit aggressive nature. Therefore, it is crucial to consider personality factors along with the attitudes, interactions and responses to different processes. Although, mention must be made that all of these are the result of human emotional nature. Psychologists have tried to identify basic emotions by studying how we express them (M. Gendron, 2014).Of our myriad ways of expressing emotions, facial expressions have proved one of the most difficult to interpret (Paresashvili N, 2017). (Paresashvili & Maisuradze, Mechanisms of organization conflict resolution in Georgia, 2017)One problem is that some emotions are too complex to be easily represented on our faces. Second, people may not interpret emotions from vocalizations (such as sighs or screams) the same way across cultures. One study found that while vocalizations conveyed meaning in all cultures, the specific emotions people perceived varied. For example, Himba participants (from northwestern Namibia) did not agree with Western participants that crying meant sadness or a growl meant anger (M. Gendron, D. Roberson, J. M. van der Vyver, and L. F. Barrett, 2014). Lastly, cultures have norms that govern emotional expression, so the way we experience an emotion isn't always the same as the way we show it.(Stephen P. Robbins, 2018) We have reviewed the results of a study by various scientists (for instance,Gelfand, M., Leslie, L., Keller, K., & De Dreu.), to identify the factors that need to be considered in order to achieve positive results in conflict management. The results of the study show that there is a need for interdependence between organizational goals and groups.In a sample of leaders and members from 92 branches of a large bank, factor analysis and aggregation analyses show that 3 conflict cultures—collaborative, dominating, and avoidant operate at the unit level of analysis. Building on Lewin, Lippitt, and White's (1939) classic work, we find that leaders' own conflict management behaviors are associated with distinct unit conflict cultures. The results also demonstrate that conflict cultures have implications for macro branch-level outcomes, including branch viability (i.e., cohesion, potency, and burnout) and branch performance (i.e., creativity and customer service). A conflict culture perspective moves beyond the individual level and provides new insight into the dynamics of conflict management in organizational contexts(Gelfand, Leslie, Keller, & de Dreu, 2012). According to different researches, culture is something that also needs to be taken into account because it affects the ways people perceive different processes, values and the ways they make moral-ethical judgments. A research conducted by Hosted which classified cultured by identified the power distance revealed that in high power distance countries people feel less comfortable with direct and opened communications with their supervisors due to the fact that direct communications disturb the feelings of peace and harmony. But other studies show that communications and understanding can be enhanced through decreasing or eliminating the differences between employees. In case if the differences are high, resolving and managing conflicts through opened dialogue may promote the conflict even further rathen than decreasing it. Therefore, improving relationships and communications is possible in case where there are low differences between parties. Personal persistence, self-control and moral stability is observed within the members of organization during the conflict process. Hence, managers should pay attention to emotions and attitudes in the workplace, because each one of these factor can affect work performances greatly. Therefore, the effective conflict management implies creating an emotionally stability through inculcating the democratic principles along with creating harmonious, just and effective working environment. All of these measures provide high job satisfaction that can affect job performances and outcomes greatly. Although conflict over ideas is thought to be beneficial to task performing groups, research documents a strong interrelation between idea-based task conflict and emotionally laden relationship conflict. According to social-ethical approach, human needs can be the basis of conflict. Accordingly, the conflict of needs is followed. Due to the fact that resources are limited in the world, needing something might lead to inflicting situation (Peter T.Coleman, Morotn Deutsch, Eric c. Marcus , 2010).

According to social approach, conflict is a form of relating that is based on subjective or objective difference (Dmitriev, 2002).In terms of psychological dimensions conflict is an inner psychological state which arises when two contradicting people, tendencies or behaviors take place. It leads to emotional tension (Grishina, 2008). Management science views conflict as unactualized optimal alternative within the organization that could easily satisfy all of the parties (Koshelev A.N., Ivannikova N.N., 2007). The reasons why conflicts may arise could also be the lack of resources and the availability of these resources in the organization. Managers should define the potential increase in the resources, compare the existing outcomes to the potential outcomes and before making decisions should analyze in detail the possible outcomes in order to achieve the improvement of outcomes. In case of the bad anticipated outcomes decision should be made against increasing the resources. What methods are there available for resolving the conflicting situations? Power methods are one of the options – power, order, threat and jeopardy, blackmail, deception. Normative measures: using the power within the framework of law such as, juridical claim, addressing the human rights organizations and so on. Corporative measures: negotiations talking about problems, understanding the interests of the other party, informing, joint effort, compromise, decision making through voting William K.Roche, Paul Teague, Alexander J.S. Colvin, 2014). Confrontation and negotiation: some conflict can be resolved only through confrontation and negotiation, which in and of itself requires involving an experienced mediator and thorough planning of negotiations. The process includes honest discussion about the problem which results in mutually acceptable decision. (Singh, 2008, pp. 112-124) Finally, does the political activity conform to standards of equity and justice? Sometimes it is difficult to weigh the costs and benefits of a political action, but its ethicality is clear. The department head who inflates the performance evaluation of a favored employee and deflates the evaluation of a disfavored employee and then uses these evaluations to justify giving the former a big raise and the latter nothing has treated the disfavored employee unfairly. Unfortunately, powerful people can become very good at explaining self-serving behaviors in terms of the organization's best interests. They can Power and Politics persuasively argue that unfair actions are really fair and just. Those who are powerful, articulate, and persuasive are most vulnerable to ethical lapses because they are more likely to get away with them. When faced with an ethical dilemma regarding organizational politics, try to consider whether playing politics is worth the risk and whether others might be harmed in the process. If you have a strong power base, recognize the ability of power to corrupt. Remember it's a lot easier for the powerless to act ethically, if for no other reason than they typically has very little political discretion to exploit. (Stephen P. Robbins, Timothy A. Judge, 2017).

4. RESULTS

Organizational conflicts represent the leading factors that affect organization's livelihood if we take into account that the conflict is a special form of subject's relationships where the opposing positions contradict with each other. Theory analysis reveals that the organizational conflict is based on different managing styles as well as employee's different values that represent the basis of their perception of organizational politics, processes, events and rewards systems. One of the most important finding in our research is that attending to conflict and managing conflicts is one of most important factors of organizations life span and development. Therefore, managers should consistently evaluate weaknesses and difficulties organization holds in order for them to have an objective perception of reality. If we manage to effectively manage conflicts, it has the potential to enhance the collective as well as the organization. The research conducted by us revealed that despite numerous researches' regarding the given problem, the existing methodological recommendations give us a chance to resolve some of the forms of organizational conflicts. Although, it is crucial that we take into account the modern era and the diversity of a working force.

It is essential that the managers are equipped with the proper knowledge to be able to identify employees' cultural values and their personality types. To do that, each manager should be educated psychologically in order fot them to effectively manage employees and conflicts that may arise between them. We have chosen 4 active organizations as the subject of our study. Considering the fact that currently there is a high rate of unemployment in Georgia, individuals often agree to jobs with low salaries and unprofessional working environments. The objective of our study was to find out the level of harmony or the level of positive or negative psychological atmosphere in these organizations. The results indicated on the diagram are not so promising. In a situation where the individuals spend most of their active lives at workplace which affects their attitudes greatly, it is important for the managers to take care of their employees and provide pleasant working space. One of the most important factors in conflict management is the right use of power, so that there is no discrimination and stereotypes in organizations. In one of our surveys, which included 298 respondents employed by organizations staffed with a variety of work staff (according to age, sex, religion, ethnic minority). The hypothesis that the employee's position affects the company's response to discrimination has been identified and therefore confirmed (Paresashvili, 2019). Based on this it can be concluded that the possession of power in the hands of specific "individuals" is often a tool of discrimination.

Table 1: Correlation analysis

Correlation analysis		Your position	The company has an appropriate response to the discrimination
Your position	Pearson correlation	1	.330**
	Sig. (2-tailed)		.000
	N	298	298
The company has an appropriate response to the discrimination	Pearson correlation	.330**	1
	Sig. (2-tailed)	.000	
	N	298	298

***. Correlation is significant at the 0.01 level (2-tailed)*
Source: processed by Nino Paresashvili

5. CONCLUSION

The principle of justice must be incorporated into the organization and it must be felt by each member of the organization. Any form of discrimination towards employees on any given hierarchy step should be unacceptable. Managers should not be privileged over an average employee.The results of the study confirmed that most of the staff work in a stressful environment and conflict situations are quite often a part of their working life. It is desirable for the manager to ensure that the emotional balance of the employees is maintained, which plays a special role in ensuring a harmonious working environment.(Ekman, 2003). As evidenced by the research, most respondents recognize competition, violation of the principle of fairness, discrimination, different assessments of events and processes by individuals, and more the causes of conflict. The research has shown that conflict resolution by a third party through dispute resolution or direct dialogue is one of the most effective means. Because individuals in a conflict are mostly focused on each other and not on the key to discovering the causes of their confrontation and reaching an agreement, so the involvement of a third party is paramount.

Studies have also once again demonstrated the importance of cultural factors in conflict management in the face of diversity of workforce, as it is often this factor that is considered by employees to be one of the causes of discrimination. However, this factor may not necessarily be the cause of the conflict, so it is necessary for managers to communicate closely and effectively with employees. At this time, explanatory work will be carried out on the causes of the conflict in order to get success-oriented results instead of destructive ones.

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STRATEGY OF DISORGANIZATION OF LABOR AND HUMAN RESOURCE MANAGEMENT POLICIES

Hasan Tutar
AİBÜ, Bolu, Turkey
h.tutar@gmail.com

Teymur Sarkhanov
Sakarya University, Turkey
Azerbaijan State University of Economics (UNEC)
Baku, Istiqlaliyyat str.6, AZ1001 Azerbaijan
teymur.sarkhanov@gmail.com

ABSTRACT

In recent years, the intensive use of smart systems and artificial intelligence in business life has caused structural changes and even transformations in the employment policies of companies. This has led to the disorganization of labor, and consequently, of the unions representing organized labor. Managerial and structural changes in the economy, especially in the service sector, such as artificial intelligence and intelligent and dark business, which result from the use of expert systems, require the traditional employee concept to be reconsidered. In addition to the fact that smart systems substitute middle-level employees and make them dysfunctional according to their location, the fact that automation-based production replaces the production technique based on labor (mechanization) causes the need for organized labor to decrease and unfortunately, this process is not functional and insignificant. It makes. On the other hand, the reflection of neo-liberal theses on the organizational field causes the emergence of empty rhetoric approaches such as the transition from personnel management to human resources management and from there to strategic human resources management. In addition, with the neological expressions such as organizational commitment, psychological contract, organizational citizenship, and organizational commitment, the interest of the employees in the workplace towards union movements and their actions is tried to be reduced. This caused unionized (organized) labor, which was 75-80% in the 1970s, to decline to 15% today. The process continues to decrease the importance of the traditional workforce. The main purpose of this research is to present the adventure of the disorganization of labor through human resources approaches. In this way, it will be tried to question whether the conceptual and so-called theoretical approaches in the field of human resources management have a scientific basis and whether the change in question is related to the strategy of disorganizing labor. In the research, the historical background of human management, which has evolved from personnel management to human resources management, from human resources management to strategic human resources management, will be questioned. With the secondary data to be collected, the subject will be analyzed and the research question will be answered.

Keywords: *Personnel management, human resources management, disorganization of labor, union*

1. INTRODUCTION

When the field of management practices is analyzed recently, a “New Management Approaches” is generally encountered. However, when it is subjected to a deep analysis, it is understood that the approaches that are conceptualized as new management approaches today actually do not have “new” aspects other than renaming the conceptual framework. Therefore, it should be said that it is more realistic to talk about the different names of the same approaches rather than mention “innovation” in the management approaches including the personnel

management area. In this context, neither Human Resources Management does not differ from Personnel Management, Strategic Human Resources Management does not differ from Personnel management and Human resource management, nor talent management voiced in recent days show any difference from the previous ones. Even about sixty years ago, Koontz called the conclusion that "The Theory of Management Theories" (Harold, 1961). By highlighting one of the features of known, existing, and applied management approaches, it can be argued that it is a rhetorical illusion rather than a theoretical or scientific presentation of what has been said before. The application is launched in the form of a management buzzword (Collins, 2000), to create the market of contemporary management concepts management fads (Jackson, 2001) or management enthusiasts. It should be noted that the illusion in question stems from the lack of a theoretical view sufficient to see the insight of management theories, lack of rootlessness, philosophy, and inability to analyze. According to Abrahamson (1996), new management approaches (managerial fashions), including the field of human resources management, result from the baseless enthusiasm of the "guru" and fashion setters who are committed to producing new management information. The new administrative fashion stems from the belief that corporate performance and efficiency will increase with special management techniques and practices (Spell, 2001: 358). These administrative fashions consist of techniques and practices that are very popular and disappear very quickly, like all other fashion ones, which are extremely popular when they appear, but leave little trace behind (Miller et al. 2004: 9). When the definitions are taken into consideration, it is seen that two issues come to the fore. The first of these is "temporality", that is, fashion, the other is "fads". According to Abrahamson (1996: 589), it is absurd in all respects to have facts such as "fashion" and "temporary fads" in a technical and rational field such as management. In management literature, the multitude of management fashions that have found application area due to the gap stemming from rootlessness and philosophy has turned into the "Management Theory Industry". This industry media is an industry with great interests, gurus, consultants and business schools. In the ideas produced by the industry in question, the scientific method based on self-criticism, actual data, and reliable scientific information that can be destroyed is not easily encountered. Another factor that led to the formation of the "Management Theories Industry" is that the supporters of behavioral theory take a dogmatic attitude towards the classics and claim that they are based on the human element in the organization. In fact, although new management approaches have denied the past with the effect of the postmodern paradigm, contemporary approaches in management continue to rely on the concepts and principles of classical organizational theory.

2. CONCEPTUAL FRAMEWORK

Another concept that derives from the modern approach qualification is personnel management and its derivatives. Aside from the dilemma of seeing man as a "source", when the human resources management literature is analyzed, it is understood that the definitions differ from the personnel management, only a different name, but on the contrary, there is no innovation that deserves to be presented as a new approach. When we make a definition level comparison between human resources and personnel management when we put the expression "personnel management" instead of HRM, we see that there is no mistake. HRM is defined as "all the functions and works that provide effective management of human resources in any organizational and environmental environment, in a way that will be beneficial for the organization, the individual and the environment" (Uyargil et al., 2008: 3). If the word "personnel" is used instead of the expression highlighted here as human resources and a definition of personnel management is made, the definition will be at least as meaningful as the HRM definition. For example, according to Sabuncuoğlu, the main purpose of Personnel Management is to use manpower effectively and efficiently.

According to Canman, Personnel Management aims to improve the performance of the human resources of the organization and to increase its contribution to the organizational performance, as well as the benefits and interests it will receive from the organization (Canman, 1995). So what else could the main purpose of Human Resources management be? It is to utilize human resources at the highest level and to ensure that it is effective and efficient. When we look at the content of HRM books, it is understood that they are not different from Personnel Management books, which are their ancestors. While this is the case, presenting contemporary concepts produced in the west as a “new” product to the market of concepts is incompatible with the seriousness and general validity of science. For example, in his work, Sabuncuoğlu (1994) Personnel Management, “today's businesses that want to reach the modern business management by breaking from the traditional structure and struggle in this direction feel the need to focus on the resource of manpower, which is one of the production elements, and its conscious management with each passing day. Businesses that believe in people, its inexhaustible power and its role in production have begun to give more attention to scientific studies carried out under the name of “Personnel Management” every day in order to benefit from this item in the most efficient way” (Sabuncuoğlu, 1994: 11). These statements referring to man and his inexhaustible power are statements that can be found in any contemporary HRM book or in a publication on strategic human resources. Another point that draws attention in Sabuncuoğlu's expressions is the expression “source of manpower”. Using the expression of human resources in 1994, Sabuncuoğlu later published his work under the name of Human Resources Management. Although Canman thought in his book published in the title of Contemporary Personnel Management in the 1995 edition, he thought that he could adapt to the process with the concept of "contemporary", the concept of "contemporary" should not satisfy the author, and later published the same work as Human Resources Management (Canman, 1995). On the other hand, almost all of the HRM books in the 1990s have been converted from Personnel Management to Human Resources Management. This process only points to a name-level rhetorical change from Personnel Management to Human Resources Management. On the contrary, as Eryılmaz stated, the claim of expressing the paradigmatic break from Human Resources Personnel Management is a groundless claim, while the classical Personnel Management regards the employee as passive, while HRM treats the employee as equity (Eryılmaz, 2008: 263) is not an arrangement in favor of the employee. According to Eryılmaz, HRM leaves the Personnel Management in terms of the following features. It is also possible to include Strategic Human Resources Management (see Table 1).

Table following on the netx page

CHARACTERISTICS of HRM	H. FAYOL'S THOUGHT ON THE SAME TOPIC
HRM believes that there is a close relationship between organizational development and the development of employees as individuals and groups.	Managing jobs; The six parts that constitute the main basis are the activities that are carried out together properly (p, 17).
HRM focuses more on results than inputs.	Management should not get caught up in the details (p, 119).
HRM management sees employees as internal stakeholders.	It is necessary to know the social needs and social resources of an organization well and accurately (s, 46).
HRM tries to make the culture based on us dominant rather than self-centered understanding.	Unity is power. Cohesion and unity among employees is a great force for the organization (p, 49).
HRM emphasizes the creative nature of the person by acting on "knows what does a job best".	The senior manager should not waste time doing things that the subordinate can do better than himself or even himself (p, 125).
HRM represents a form of authority based on knowledge and expertise, rather than authority over the hierarchy.	A good manager means an indispensable part of the personal management ability of legal management (p, 25).
HRM starts with the idea of making maximum use of the employee.	Business administration means directing the business towards its purpose by trying to provide as much benefit as possible from all the tools owned by the business (s, 7).
According to the qualification of the personnel working in HRM, the rules applied to them have also changed. It is not possible to manage the information statistics according to the traditional rules of the previous period. There is a transition from the batman approach to the captain approach.	There is no doubt that the more solid, knowledgeable, conscientious, and confident of an organization's employees, the more useful they will be to the organization. The boss must strive to make sure that his officers are in good health, strength, education, morality, and location, even for the sake of his own job (p, 39).
HRM is a dynamic process. It requires being sensitive to developments.	Management, which started with planning, has always been a dynamic process.
HRM deals with the human factor in three ways: a. Selecting the personnel needed by the organization, b. Harmonization of the people who are assigned to the organization, c. Ensuring the job security of the hired individual.	All kinds of measures should be taken that give confidence to the business and its employees in terms of intellectual peace (p, 5). It is among the managerial works to create a good team from them by choosing the officers well and to establish the business structure (p, 6).

Table 1: HRM and H. Fayol Comparison

Canman establishes the following similarities between the human resource management approach and the Personnel management: The strategy of both stems from the organizational strategy. The values of the Personnel management and the flexible statements of HRM meet on a common ground in the "value to the individual" point. It is the common aim of both to run everyone in their professional knowledge and expertise. Like the flexible definition of human resource management, personnel management also attaches importance to communication and

participation processes in the system of working relations (Canman 1995: 61-62). Canman detects the differences in the following points: Personnel management is an activity that primarily focuses on non-executive personnel. However, HRM is more concerned with executive personnel than this personnel. HRM emphasizes the importance of senior management in cultural management. However, Personnel management has been more skeptical about organizational development; the holistic concerns thoughts about social psychology. Human resource management is based on a philosophy focused on management and organization. It is a strategic activity led by senior management. Here, two issues stand out in differences. The first one is the issue that the personnel management does not dwell on the top managers of the organization. Whereas, H. Fayol, who forms the principles of the management himself, states that "top management is not only trained and educated but also organizational efficiency and effectiveness; It emphasizes the need to know the art of human use, to be very active, to have more or less spiritual courage, to have stability in their duties, to have more or less authority over the work that the organization is engaged in, and to be an experienced person "(Fayol, 2005: 10, 61, 62). The second point is that HRM is a strategic activity. However, while Canman counts the similarities between HRM and Personnel management, he states that both approaches stem from the "organizational strategy". The approaches put forward by management theory schools today consist of management practices rather than theory. There is both a "theory complexity" and a "confusion of concepts". The conceptual confusion is also present in the concepts of "management and organization". Recently, strategic human resources or more showy concepts have been used instead of human resources management. For example, "Talent Management" is one of them. Talent management means that every employee in established and institutionally managed companies is seen as a value and offers opportunities to show and develop themselves with different priorities. In this context, the number of institutions that realize that human is the greatest value of the organization is gradually increasing. First of all, naming is wrong here; because talent is just one of the values that people carry. The sum of his temper, temperament, and character of his personality structure reveals his "nature". Another problem with human resources management is how human-centered human resources management is. In the Human Resources Management, the organizations that are competent to have the strength of the human muscle and to use it efficiently and effectively during the personnel management periods are no longer satisfied only with the muscle strength of the human; With the management of knowledge, it is desired to have the emotional power of the human being through corporate identity, corporate loyalty, corporate dedication and establishing identity and the emotions of people with approaches such as psychological capital and positive psychological capital. However, employees who are asked to be devoted to use all of them in favor of the organization, how much talent they have, continue to be de-unionization and unorganized to lose their power to negotiate their ability to get their labor. After the 1970s, de-unionization working relationships continue to lose power all over the world. In line with the neoliberal theses put into effect all over the world, the system of relations with a de-unionization play has started to dominate. This is because unions are viewed as obstacles to the interests of the new capitalist economic system. De-unionization of labor, increasing unemployment, subcontracting, failure to improve labor force, deregulation, informalization, shrinkage of the workplace all over the world are paid by the working sector. Unions, which are the necessity of protecting the rights of their members and an organized working order, have traditionally functioned as an integral part of the working life of the Keynesian economy in the world of work. However, with the effect of the new industrial relations system imposed by the neoliberal theses, unions have been replaced by the concept of "de-union workplace" or even "de-union working relations". The interests of "labor" and "capital" have started to be seen as contradictions, not in terms of the conflicting approaches that dominate today.

The unions, which were established to represent workers in the historical process and which are powered by the collective bargaining power and solidarity of labor, have functioned as pro-labor institutions and have both lost their power and collective bargaining abilities, political and political effects significantly (Nepgen, 2008: 12- 13). From the beginning of the nineteenth century, unions have functioned as "organizations created to protect the rights and interests of workers who are the producers of labor in labor relations". Trade unions, “union density”, which refers to “those covered by collective bargaining agreements” or those who are members of the union from paid employees, started to be seen as an obstacle to the pro-capital neoliberal theses in order to overcome the crisis that capitalism fell into in the 1970s (Addison, 2014: 2). For this reason, as a result of the reflection of neoliberal policies to the business level, the density has begun to dilute significantly. At the end of the process, a non-unionized or unorganized working relationship order began to dominate.

OECD COUNTRIES	1960	1970	1980	1990	2000	2005	2010	2015
USA	30.9	27.4	22.1	15.4	13.4	12.5	11.9	11.1
Germany	34.7	32	34.9	31.2	24.6	21.5	18.9	17.6
Australia	50.2	44.2	49.6	45.4	25.6	22.3	18.4	-
Austria	60.1	56.7	51.7	46.8	36.9	33.8	28.9	27.4
Belgium	41.5	42.1	54.1	53.9	56.2	53.7	53.8	54.2
Denmark	56.9	60.3	78	74.6	73.6	70.7	67	65.4
Finland	31.9	51.3	69.4	72.8	74.6	70.4	68.3	61.8
France	19.6	21.7	18.3	9.8	8	8	8	-
Netherlands	41.7	38.4	34.8	24.6	22.6	21	19.3	17.7
Britain	40.5	44.8	52.2	39.6	29.7	27	26.8	24.7
Ireland	45.3	53.2	57.1	51.1	36	32.5	35	26.5
Spain	-	-	13.3	13.3	16.5	14.5	17.2	13.9
Israel	-	80	84	71	37.7	33	25.6	-
Sweden	64.6	67.7	78	81.5	80.1	75.6	69.3	66.8
Swiss	31	24.9	27.5	22.5	20.2	19.3	17.6	15.7
Italy	24.7	37	49.6	38.7	34.4	33.3	35.5	35.7
Japan	32.2	35.4	30.8	25.2	21.5	18.7	18.3	17.4
Canada	29.2	31	34	32.8	31.2	30.4	30.1	29.4
Korea	-	12.6	14.7	17.2	11.4	9.9	9.7	10.1
Mexican	-	-	-	-	15.6	16.9	13.9	13
Norway	60	56.8	57.9	58.5	54.1	54.7	53.6	52.5
Poland	80.7	90	-	36.7	17.6	18.1	14.6	-
Portugal	-	-	54.8	29.3	21.5	21.5	19.6	16.2
Slovak	-	-	-	-	32.3	22.8	15.2	10.9
Chile	-	-	-	16.6	12.3	12.3	13.7	15.8
Turkey	12.1	29	39.5	35.2	28.2	16.8	8.9	8
New Zeland	-	56.3	69.1	49.6	22.4	22.3	21.4	17.9

Table 2: Unionization rates in OECD countries between 1960 and 2015
(Source: http://stats.oecd.org. Access 12.01.2018)

Although the main reason for the unions to emerge is to unite the wage earners under an organization, to ensure that they emerge as an organized power against the employer (state) and capital (Duhm, 2009: 81), but after the 1970s, unions lost their organizational power, and labor became vulnerable to the state and capital today. Reducing the frequent “labor costs” in neoliberal ideology, the disorganization of labor, in other words, is directly related to the

establishment of a de-union working relationship. Reducing or even impoverishing labor costs will be possible through the elimination of the organized power of the common labor against capital. The fear of unemployment and poverty, which is inherent in the capitalist system and which it imposes constantly, has been used as a means of suppressing the laborers in every period. However, the result has not changed. In some OECD countries selected in Table 3 below, the rates of impoverishment that we think are due to the disorganization of labor are shown.

Countries	1980-1990	1990-2000	After 2000	Countries	1980-1990	1990-2000	After 2000
Australia	…	11,4	12,4	Italy	10,3	14,2	11,4
Austria	6,1	7,4	9,3	Japan	12,0	13,7	14,9
Belgium	14,6	10,8	10,4	Luxembourg	5,4	5,5,	8,1
Canada	10,7	9,5	12,0	Mexican	20,7	21,7	18,4
Czech Republic	3,2	4,3	4,3	Netherlands	3,5	7,1	7,7
Denmark	6	4,7	5,5	N. Zealand	6,2	8,4	10,8
Finland	5,1	4,9	7,3	Norway	6,4	7,1	6,8
France	7,6	6,9	6,5	Portugal	13,8	14,6	13,5
Germany	6,3	8,5	11,0	Spain	14,1	11,8	13,7
Greece	13,4	13,9	12,6	Sweden	3,3	3,7	5,3
Hungary	6,3	7,4	7,1	Turkey	16,4	16,2	17,5
Ireland	10,6	11,0	15,4	Britain	6,2	9,8	8,3
USA	17,9	16,7	17,1				

Table 3: Poverty rates in OECD Countries
(Source: OECD,OECD Social Indicators 2017)

3. CONCLUSION

Social events, by their very nature, have a social, cultural, political, and economic context. This is also the case in what we call globalization. In the new "economic global" order established to create the economic rationale of globalization, they aimed to reduce the production costs by increasing the ability of capitalist organizations (firm, enterprise) to compete in the world market and by breaking the organized power of labor (Barry, 2000: 5-6). In the process of globalization, global actors aimed to strengthen non-governmental organizations in order to break the power of nation-states, on the other hand, to adopt de-union working relations in order to eliminate the ability to be power against capital. Neoliberal policies aiming to eliminate unitary structures have been put into circulation, and institutions such as IMF, World Bank, and World Trade Organization have started to stand out as the main actors of the new global economic order. The reflection of the policies proposed as "shock treatment" for planned economies and "structural adjustment programs" for third world countries to business management, while "Human Resources Management" approaches, which are essentially a strategy to break the organized power of labor, have been put into circulation. Aside from the human-centered management rhetoric, which is an illusion, the main purpose of the new neoliberal theses is to establish a new global economic order with practices such as “export-based growth, privatization, free trade, deregulation, deregulation, more markets and fewer states (Soyak, 2004: 37-38). In line with global neoliberal policies, unions representing the organized power of labor and the emergence of societies as a power against global actors have been tried to be weakened. The main purpose of neoliberal policies in the process of globalization is to settle the new global economic order, which aims to dissolve all kinds of “public mechanisms”, to spread market economies and to protect the interests of global firms

that are new actors of globalization (Masceranhas, 2003: 326). Neoliberal theses put into effect with privatizations, on the one hand, increased poverty, on the other hand, as stated above. It should not be overlooked that the share of workers' de-unionization. For example, between 1989 and 2002 privatization conducted in 12 public institutions in Turkey, as a result of a new working relationship 72% of nonunionized employees are forced to switch to the system. The trade union structures are pushed out of the industrial relations system, the wages are reduced, the social state understanding is abandoned, the international financial institutions are replaced by national institutions, and the liquidation of the unions representing the organized bargaining power of labor has started to dominate the working life of this process (TürkİŞ; 1998: 3). It is noteworthy that the Human Resources Movement, produced in order to support neoliberal theses from the business scale, is simultaneous. Human resources approaches have resulted not from theoretical, methodological, or practical reasons, but from the strategy of facilitating the implementation of neoliberal theses through the disorganization of labor.

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OPPORTUNITIES AND LIMITATIONS OF THE INDICATOR SYSTEM FOR FINANCIAL DIAGNOSTICS AND BANKRUPTCY FORECASTING

Svetlana Nadezhdina
Novosibirsk State University of Economics and Management, Russia
nadejdina2010@yandex.ru

Sergey Filatov
Novosibirsk State University of Economics and Management, Russia
s.a.filatov@nsuem.ru

Tatyana Khramtsova
Novosibirsk State University of Economics and Management, Russia
tanyhram@mail.ru

Alexander Shaposhnikov
Novosibirsk State University of Economics and Management, Russia
shaposhnikov.alexandr@mail.ru

Maria Krasnova
Novosibirsk State University of Economics and Management, Russia
mary1381@mail.ru

ABSTRACT

The article proves the importance of financial diagnostics of companies' activities under turbulent and unpredictable external environment. It was found that the applied systems of financial diagnostics indicators do not always diagnose the real state of the company, timely identify factors that lead to an extreme form of crisis – bankruptcy. The study provides examples of diagnosing the insolvency of companies in various countries, since the bankruptcy of companies is a phenomenon that does not have territorial borders. An assessment of the possibility of reducing the quality of financial management information support as a trigger of financial instability of companies is given. It is noted that the study of the financial state both at the stage of bankruptcy forecasting and during the period of insolvency is in the focus of attention of both scientists and practitioners in various countries, but despite the variety of indicators used to identify the probability of insolvency, organizations go bankrupt, which causes damage to a wide range of stakeholders. Based on the study of company financial statements, the article evaluates the capabilities of indicator systems for financial diagnostics, and identifies limitations in their use for various groups of users.

Keywords: *Bankruptcy, Insolvency, Financial diagnostics, Scorecard, Stakeholders*

1. INTRODUCTION

Bankruptcy of organizations is an ambiguous phenomenon. On the one hand, it naturally results from competition. On the other hand, it is a phenomenon that has negative consequences for a wide range of users. Bankruptcy of companies does not have territorial borders, does not depend on the industry and size of the organization. This results in a noticeably increasing interest towards the study of the possibilities and limitations of analytical tools used for corporate financial diagnostics and bankruptcy forecasting. The problems of identifying signs of bankruptcy are in the focus of attention of economists in various countries.

However, despite the variety of approaches, an ideal set of analytical tools has not been developed yet. The existing tools for diagnosing and predicting bankruptcy have both advantages and disadvantages. They do not always allow us to identify crisis situations. As a result, the bankruptcy of a company is unexpected for a wide range of people, which exacerbates the negative consequences. For example, the bankruptcy of Thomas Cook Group, the travel company, not only resulted in a significant number of lost jobs, but also affected a huge number of holidaymakers around the world. The bankruptcy of OneWeb, a space research company, has put a risk the work of 74 satellites in the orbit. There is an array of examples of negative consequences of bankruptcy. Bright illustrations are the bankruptcies of Conseco, Enron, General Motors, World Com, Lehman Brothers. Bankruptcy of companies attracts attention of economists from the point of view of various issues: diagnostics of the financial state and timely identification of crisis signs, analytical support for management anti-crisis decisions, and crisis consequences assessment. Thus, the researchers focus on a wide range of analytical tools to identify the likelihood of a crisis, evaluating management decisions in the process of reorganization and liquidation of the organization.

2. LITERATURE REVIEW AND THE RESEARCH PROBLEM

The study of analytical tools used for financial diagnostics and bankruptcy forecasting is being carried out by many scientists from various points of view. A lot of studies explore the models for predicting the probability of bankruptcy [1, 2, 4, 6]. A part of them is focused on the study of alternative views on the formation of a set of indicators, including the use of indicators of cash flows [5]. In today's integrated world, it is impossible to form the system of indicators that focuses on the company's activities within a single country, since the company can be operating in several countries. This increases the relevance and practical significance of the research on bankruptcy issues in various countries [7]. Having studied publications on bankruptcy, we concluded that an integrated approach to the use of analytical tools during all stages of crisis starting from the assessment of the probability of a crisis, evaluation of an already existing crisis phenomena, to the use of analytical tools in the process of reorganization and liquidation of an organization, has yet been explored insufficiently. Hence, we have formulated the research hypothesis and defined the limitations. The research hypothesis is that the existing approaches to the formation of a system of indicators for assessing crisis phenomena in companies do not allow to provide relevant information for a wide range of stakeholders. Limitations of the research. The hypothesis was empirically evaluated using case study of Russian companies. The difference in approaches to preparing company financial statements in different countries does not allow for a comparative analysis.

3. REVIEW OF THE EXISTING APPROACHES TO THE FORMATION OF A SYSTEM OF INDICATORS IN ANTI-CRISIS MANAGEMENT

There are six stages within every crisis: warning, risk assessment, response, management, resolution and recovery. And at each stage, the use of analytical tools, namely a system of indicators, is needed. As mentioned above, researchers study the indicators in two phases mainly: warning and risk assessment. As a rule, more emphasis is placed on the study of a set of indicators for assessing the probability of bankruptcy, for example, through discriminant analysis. While the other stages are not given as much attention. Given the size the problem and the difficulty of comparing the experience of different countries, an integrated approach to the formation of indicator systems at all stages of the crisis has not been sufficiently studied. We have analysed a cross-section of groups of indicators used in crisis management of crisis organizations (table 1).

Table 1: Groups of indicators used in anti-crisis management

Karas, Reznakova (2017)	Kurschus, Sarapovas et al (2017)	Kral, Musa et al (2018)	Zoricak, Gnip (2020)	The rules of the financial analysis by the arbitration manager [11]
Profitability	Hard criteria - adverse balance, liquidity, net sales and profit, personnel intensity, material intensity, funding ratio, equity ratio, yield key figures, turnover key figures	Profitability	Profitability	Solvency
Liquidity	Soft criteria - indicators that characterize stakeholders, management, staff, customers, suppliers, etc.	Liquidity	Liquidity	Financial stability
Turnover		Activity	Activity	Business activity
Obligations / Indebtedness		Obligations / Indebtedness	Return Of Assets	External operating conditions
Size factors		Capital structure	Solvency	Internal operating conditions
Structural ratios				Indicators that characterize the debtor's markets
				Indicators of assets and liabilities
				Break-even indicators

The data in the table demonstrate that the most common groups of indicators include: liquidity, turnover, and profitability. Kurschus's (2017) approach to the formation of a system of indicators for small companies is of interest to us. It is based on a combination of hard and soft criteria. For the comprehensive assessment of two groups of criteria, the approach employs an expert assessment. It is important that the approach extends to three stages: pre-crisis, crisis, and post-crisis. Having considered the groups of indicators, approaches to the formation of a system of indicators in the framework of financial diagnostics of insolvent companies have been formulated (table 2).

Table 2: Approaches to the formation of the system of indicators for the financial diagnostics of insolvent companies

Criterion	Approach
1. Mandatory use	Regulatory approach (cross-industry, industry-specific)
	Proactive approach (original methodologies)
2. Indicator selection method	Prescriptive approach
	Creative approach
	Mixed approach

Below is the review of the approaches identified by the Mandatory application criterion.

1) Regulatory approach involves regulating a set of indicators at the legislative level. Within this approach, two subtypes can be distinguished: cross-industry, where the set of indicators is identical for companies of different industries. And industry-specific, which assumes a set of indicators for each specific industry. Russia can serve as an example of a regulatory approach. A cross-industry approach to the formation of a system of indicators is regulated by the rules for conducting financial analysis by an insolvency officer [11]. An industry-specific approach can be exemplified by a set of indicators regulated by guidelines for assessing the financial and economic state of commercial air carriers. Here there are indicators that take into account industry specifics, for example, "the reduction of monthly flight hours on the average operator's aircraft".
2) Proactive approach involves an independent choice of methods that regulate a set of indicators for financial diagnostics of insolvent companies. The most famous are the methods by Altman, Toffler, and Beaver. In Russia, they also use the methods by R. Saifulin, G. Kadykova.

When creating a system of indicators, it is important to consider the indicators selection method. We have distinguished three approaches within this criterion.

1) Prescriptive approach assumes a set of indicators strictly regulated by the instructions or methodology, for example, Altman's method.
2) Creative approach involves the selection of areas for the analysis, within which the analyst independently creates a system of indicators.
3) A mixed approach is a combination of a prescriptive and creative approach. A system of indicators formed in accordance with the rules for conducting financial analysis by an arbitration manager is a vivid example of such approach.

The advantage of the prescriptive approach is that it reduces the possibility of manipulating the data, since the range of indicators is limited. The disadvantage is that not all aspects of company economic activities can be disclosed through the set of indicators. In the case of a creative approach, on the contrary, the subjectivity of the selection of indicators can result in the distortion of the information for lucrative purposes. Below is a more detailed review of the set of indicators for Russian companies regulated by the rules for conducting financial analysis for arbitration managers (table 3). This table clearly demonstrates a mixed approach to the formation of the system of indicators. A set of indicators is regulated only within three areas: solvency analysis, financial stability analysis, and business activity analysis. In other areas, the arbitration manager creates a set of indicators independently. This approach reduces the likelihood of information manipulation.

Table following on the nexz page

Table 3: Normative approach to the formation of a system of indicators for the assessment of insolvent companies in Russia

Areas of the analysis	Indicators	Areas of the analysis	Indicators
1. Analysis of solvency	Absolute liquidity ratio	4. Analysis of external business conditions	There is no prescriptive set of indicators
	Current liquidity ratio	5. Analysis of internal business conditions	
	Indicator of security of the debtor's liabilities with their assets	6. Analysis of the markets where the debtor operates	
	Level of solvency for current liabilities		
2. Financial stability analysis	Autonomy ratio (financial independence)	7. Analysis of the debtor's assets and liabilities	
	Ratio of security of own working capital (the share of own working capital in current assets)		
	Share of overdue accounts payable in liabilities		
	Indicator of the ratio of accounts receivable to total assets	8. Analysis of the possibility of the debtor's break-even activity	
3. Analysis of the debtor's business activity	Return on assets		
	Net profit rate		

Having considered the approaches to the formation of systems of indicators, further we will evaluate the effectiveness of two approaches: the original approach based on Altman's method and the regulative approach, used in Russia. The purpose of the assessment is to either refute or confirm the following assumptions:

1. Altman's method identifies crisis situations prior to the company bankruptcy.
2. Altman's method diagnoses the bankruptcy of a company.
3. The regulatory approach (used in Russia) identifies crisis situations prior to the company bankruptcy.
4. The regulatory approach (used in Russia) diagnoses the bankruptcy of a company.

Bankruptcy of a company is not a one-time state. In Russia, in accordance with the legislation [3], the following bankruptcy procedures are distinguished: supervision; financial recovery; external management; bankruptcy proceedings; settlement agreement. For the purposes of this study, companies that have been subjected to bankruptcy procedures are assumed as bankrupt. To evaluate approaches to the formation of indicators, firstly, the financial ratios regulated by the rules for conducting financial analysis by the arbitration manager have been calculated. A set of indicators is used in the following areas: solvency analysis, financial stability analysis, and business activity analysis. According to the rules, the choice of indicators in these areas is strictly regulated. However, there are no standard/recommended ratio values for the interpretation of the obtained data. As practical experience shows the specialists are being guided by their professional judgment.

When selecting indicators, we have excluded indicators that can be interpreted in dynamics (the rate of net profit, return on assets, the ratio of accounts receivable to total assets). Based on the above, the following indicators were included into the set of indicators: the absolute liquidity ratio, current liquidity ratio, an indicator of security of obligations of the debtor by its assets, the autonomy ratio (financial independence), the ratio of own working capital. Secondly, using Altman's model [1, 2], the Z-score has been calculated:

- Z = 0.717 X1 + 0.847 X2 + 3.107 X4 + 0.998 X5
- Where:
- X1 = Working Capital / Total assets
- X2 = Retained Earnings / Total assets
- X3 = Earnings before Interest and Taxes / Total assets
- X4 = Book value of Equity / Total Liabilities
- X5 = Sales / Total assets

If Z is less than 1.23, the organization has a high probability of bankruptcy. If Z is from 1.23 to 2.99, the organization falls into an area of uncertainty and additional research is needed. If Z is more than 2.99, the organization has a stable financial status and the probability of bankruptcy is very low. The calculations are based on the case study of two groups of companies. The first group includes companies that do not experience solvency problems. The second group includes companies that were subject to bankruptcy proceedings in the closing period (the fifth year). The study of indicators within a five-year period allows us to assess the possibility of identifying negative trends in the financial state over a number of years. In accordance with the rules for conducting financial analysis by the arbitration manager, the financial ratios are assessed in the following order: corresponds to the recommended value – "+", does not correspond to the recommended value – "-".

Table 4: The assessment of indicators based on the case study of solvent companies

Ratios	Company #1					Company #2					Company #3				
	1*	2	3	4	5	1	2	3	4	5	1	2	3	4	5
The rules of the financial analysis by the arbitration managing director															
Absolute liquidity ratio	+	+	+	+	+	+	-	+	+	+	+	+	+	+	+
Current liquidity ratio	-	-	-	+	-	-	-	-	-	-	-	-	-	-	+
Indicator of security of the debtor's liabilities by their assets	+	+	+	+	+	+	-	-	+	+	+	+	+	+	+
Autonomy ratio	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ratio of security of own working capital	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Altman's method															
Z-score	0.87	1.31	1.36	1.33	0.89	1.57	1.41	1.34	1.08	1.05	1.25	1.07	1.52	1.78	0.83

"" - the study period is a calendar year*

According to table 4, a general trend can be identified: companies are experiencing liquidity problems; there is a dependence on borrowed funds, and low manoeuvrability of equity capital. These problems are not critical for companies, since they do not actually experience solvency problems within the study period. A positive aspect is the excess of assets over the debtor's liabilities. Altman's analysis revealed a high probability of bankruptcy within several periods for each company (for company #1 in year 1 and 5, for company #2 in year 4 and 5, for company # 3 in year 2 and 5). Given that in fact the company have not had solvency problems within five years, we can conclude that no methodology is able to give a clear and unambiguous assessment of the bankruptcy probability.

Table 5: The assessment of indicators based on the case study of insolvent companies

Ratios	Company #1					Company #2					Company #3				
	1*	2	3	4	5	1	2	3	4	5	1	2	3	4	5
The rules of the financial analysis by the arbitration managing director															
Absolute liquidity ratio	-	-	-	-	+	+	+	-	-	-	+	+	-	-	-
Current liquidity ratio	-	-	-	-	-	+	+	-	-	-	+	+	-	-	-
Indicator of security of the debtor's liabilities by their assets	-	-	-	-	-	+	+	+	-	+	-	-	-	-	-
Autonomy ratio	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ratio of security of own working capital	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Altman's method															
Z-score	0.87	1.31	1.36	1.33	0.89	1.57	1.41	1.34	1.08	1.05	1.25	1.07	1.52	1.78	0.83

"" - the study period is a calendar year*

According to table 5, we can identify a general trend: Altman's method during the period of insolvency reveals the probability of bankruptcy, since all organizations have a z-score in the fifth period less than 1.23. However, the method fails to identify the probability of bankruptcy prior to the crisis. Ratio analysis diagnoses a crisis situation with a higher accuracy. For example, for company # 1 over a five-year period, all ratios do not meet the recommended values (the exception is the absolute liquidity ratio). A similar pattern was observed in the last two years prior to the crisis in companies 2 and 3, since most of the ratios do not rich the recommended values. Thus, below we evaluate our assumptions:

1) Altman's method identifies crisis situations prior to the company's bankruptcy – No.
2) Altman's method diagnoses the company bankruptcy – Yes.
3) The regulatory approach (used in Russia) identifies crisis situations prior to bankruptcy – Yes.
4) The regulatory approach (used in Russia) diagnoses the bankruptcy of a company – Yes.

The assessment of the two approaches revealed both their advantages and disadvantages. The advantage of Altman's method is that it can be used for a wider range of users, since there is a clear algorithm for calculating indicators and their interpretation. The use of the normative approach used in Russia is targeted at specialists with professional knowledge and skills. Professional judgment is needed to interpret the data obtained and identify the correlation between indicators and the financial state of the company.

4. CONCLUSION

Having studied the existing approaches to the formation of a system of indicators for corporate financial diagnostics and bankruptcy forecasting, the following approaches were identified: regulatory, initiative, directive, creative and mixed approaches. Using the financial statements of Russian companies, we conducted a study of the effectiveness of the two approaches: regulatory-based and initiative-based. The study outcomes were mixed, since the approaches identify companies that are at the stage of bankruptcy, and when assessing solvent companies provide mixed outcomes. Thus, we have confirmed that existing approaches do not allow us to generate relevant information for a wide range of users. This determines the need for further research of analytical tools used at all stages of crisis management.

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THE CONCEPT OF A PROACTIVE APPROACH TO ANALYZING THE EFFECTIVENESS OF INVESTMENTS IN NATURAL RESOURCES

Vladimir Kalugin
Belgorod National Research University, Russia
kalugin@bsu.edu.ru

Elena Lavrinenko
Belgorod National Research University, Russia
lavrinenko_ea@mail.ru

Mehriban Aliyeva
Azerbaijan State University of Economics, Azerbaijan
mehriban_aliyeva@unec.edu.az

Yana Bondareva
Belgorod National Research University, Russia
bondareva_ya@bsu.edu.ru

ABSTRACT

In the context of analyzing the effectiveness of investments in natural resources, the most important point of the proactive approach is, first of all, to assess the level of adaptation of the investment project to the future conditions of its implementation. It is not possible to adequately implement this by traditional forecasting methods based on the" movement " from the past to the present and further to the future. We need a fundamentally new approach that implements the "movement" from the future to the present. This proactive approach is based on simulation and expertise. To simulate both negative and positive actions of the external environment of investment projects, a homogeneous Markov chain with discrete time is used. In contrast to the scenario approach, in which the state of the economy is assumed to be unchanged throughout the operational period, it assumes a change in the state of the economy at each step of the calculation period, which will allow the inclusion of the factor of economic turbulence in the system of making investment decisions. Implemented the principle of accounting for all consequences of implementation of investment projects both economic and non-economic (externalities, public goods), despite the fact that they allow quantification or some effects can only be assessed qualitatively with the involvement of experts. To do this, all the consequences are abstracted into four categories: "Benefits", "Costs", "Opportunities", and "Risks". The first and second categories include consequences considered as random variables, and the third and fourth categories are random events. Functional-morphological analysis and synthesis are used to build a variety of alternative investment projects, this allows building unusual and unique options in addition to the usual natural alternatives. A hierarchical model for assessing the level of adaptation of investment projects to the future conditions of their implementation is proposed.

Keywords: *proactive adaptation, pro-activity, proactive approach, investment project, methodological principles, homogeneous Markov chain with discrete time, complete consequences system, control hierarchy, value functions*

1. INTRODUCTION

The phenomenon of pre-emptive adaptation was reflected in the work of many scientists, however, the concept of “pre-adaptation” was originally formulated by C. Darwin as an

independent evolutionary phenomenon and "... reflects the fact that organisms have not yet realized their readiness to adapt to the future, and the readiness formed in the old environment "[1]. According to many scientists, the conceptual basis for solving the problem of proactive adaptation can be the idea of anticipatory reflection, which is understood as adaptation to future, not yet arrived events[2].Thanks to the accumulated experience, there is a person's ability to get ahead of the course of external events and "... with the greatest benefit to adapt to future often dangerous phenomena of the outside world long before these phenomena take place"[3]. Currently, the concepts of "pre-emptive adaptation", "pre-adaptation", "pro-activity", forming a synonymous series, are widely used in various fields of human activity. Proactive (proactive monitoring) is widely spread in the field of information technology. It is considered as the main tool for predicting the behavior of the system, identifying "weak" places and, ultimately, solving problems before they become critical. Recently, it has become widely used in management, since in conditions of limited solvent demand, fierce competition and constantly increasing production of various goods and services, the company's management needs to use qualitatively new management approaches to ensure the stable functioning and effective development of the company. One of these approaches is proactive management. The proactive approach is of particular importance in investment management because it is necessary to determine in advance, at the pre-investment stage, the future effects of each of the considered investment projects in order to prevent the manifestation of negative effects, reduce their importance increases the effect of positive effects. At the same time, the theoretical and, above all, mathematical tools developed to date to support a proactive approach to the analysis of the effectiveness of investment projects cannot be considered satisfactory, because it does not allow, firstly, to take into account all the most significant quantitative and qualitative consequences of their implementation, secondly, inadequate conditions of economic turbulence taking into account risks and opportunities (managerial options). In this regard, studies focused on the development of the mathematical apparatus and methodological tools to support a proactive approach to the analysis of the effectiveness of investment projects should be recognized as relevant.

2. METHODOLOGY

It is generally accepted that the life cycle of an investment project is represented in three stages: pre-investment, investment and operational. At the same time, since the late 1950s, managers from both large and small companies in the countries with highly developed economies have come to the necessity of introducing a new, post-investment phase of the project life cycle. The need for this stage is also indicated by leading Russian experts in the field of investment theory P.L. Vilensky, V.N. Livshits, S.A. Smolyak, adding a stage ″ at the completion of the project ″, on which ″ a posteriori assessment, an assessment of actual effectiveness ″[4]. The authors note that the importance of the ″ stage at the completion of the project 'stage is not so much to verify the effectiveness of the project after its completion as to develop recommendations for improving the quality of investment decisions at the pre-investment stage for newly initiated investments in natural resources. In world practice, the analysis of investment projects at the pre-investment stage is called pre-investment research, consisting of three stages [5]. At the first stage, called the study of investment opportunities, a pre-investment research program is formed. At the second stage, the customer begins the development of a declaration (application) of intent, in which the most suitable option for investing in the capital investment object is selected, the preliminary conditions and location (area) of the object are located and approximate technical and economic indicators within the investor's financial capabilities (restrictions). At the third stage, the determination of practical actions for investment is carried out.

In domestic practice, in accordance with the Methodological Recommendations for assessing the effectiveness of investment projects (hereinafter referred to as the Recommendations), the pre-investment phase is also carried out in three stages[6]:

- development of an investment proposal and declaration of intent (express assessment of the in vestment proposal);
- development of "Justification of investments";
- development of a feasibility study for the project.

Consequently, the main tasks of both world and domestic practice of pre-investment research are:

1) the formation of a list of potential investment projects at the stage of rapid assessment of the investment proposal;
2) analysis and selection of the most effective project option at the stage of justification of investments;
3) development of a feasibility study for an effective project option.

Moreover, the unsatisfactory theoretical and methodological basis for the analysis and selection of the most effective project option often leads to serious errors. For example, in accordance with the Recommendations, the assessment of the effectiveness of alternative investment projects at the pre-investment stage should be carried out with different depth of study at its various stages (the principle of multi-stage evaluation). At the same time, the volume and nature of the available information at the initial stages of this stage do not allow the use of classical methods for evaluating the effectiveness of investment projects, since their cash flows cannot be reliably predicted; therefore, the integral effect of implementation or other performance indicators cannot be calculated [7]. Some scientists propose to begin the implementation of the pre-investment phase from the moment of thorough elaboration of the project idea, since, in their opinion, only "... a thorough study of the idea often significantly changes the initial idea of its scope, implementation mechanism and possible effectiveness"[8]. Moreover, to describe the project idea, the author introduces the concept of a conceptual project - a document describing the constructive idea of the project, its goals and objectives, novelty, the amount of necessary resources, uniqueness, strengths and weaknesses, and investment attractiveness. The formation of a conceptual project is recognized as an important part of the process of implementation of the pre-investment phase, since the two-stage approach “conceptual project - business plan” avoids the situation when full-scale and costly research leads to a negative conclusion regarding the feasibility and effectiveness of the idea - such a conclusion can usually be made already based on a conceptual design. The idea of using investment projects to assess the effectiveness of investment projects at the pre-investment stage seems to be quite constructive, in our opinion, however, questions remain about what a conceptual project is and how to build it based on the project idea. Other authors [9,10] also note that the need for analysis and evaluation of many alternative project options leads to significant resources and time. To simplify the procedure for the preliminary selection of cost-effective investment projects, the authors propose using simpler practical methods of selection based on economic methods of express analysis. However, the only simplification here is to use equal-sized cash flows that have a uniform distribution. Thus, despite numerous attempts to simplify the procedure for evaluating and selecting an investment project at the pre-investment stage, using the concept of “conceptual project”, the question of describing the investment project and evaluating its effectiveness at all stages of the pre-investment stage (from the innovative idea of the project to its implementation) remains open. In addition, the question of using a proactive, proactive approach for the effectiveness of an investment analysis remains unexplored. The use of proactive approaches is now possible due to, as noted above, the ability of a person to make

decisions taking into account the accumulated experience, the development of the mathematical apparatus for modeling possible situations in the future, and also due to the fact that an active transition is being made from traditional forecasting to the principles of the methodology " technological foresight ", or the Foresight methodology.

3. RESEARCH

The methodological principles of the concept of a proactive approach to the analysis of the effectiveness of investments in natural resources are based, firstly, the principles applicable to any types of projects regardless of their technical, technological, financial, sectoral or regional features and formulated in the Recommendations, which are based on the methodology UNIDO, secondly, the principles of the "technological foresight" methodology, or the Foresight methodology. In accordance with the Recommendations, when determining the effectiveness of investment projects, we will take into account all the consequences of its implementation throughout the entire life cycle (settlement period). We will divide the calculation period into steps — the segments within which data are aggregated; the calculation steps will be determined by their numbers(0, 1, ..., T). To simulate both negative and positive actions of the external environment of the functioning of investment projects, a homogeneous Markov chain with discrete time is used. The state of the economy at each step of the calculation period will be described by the following sequence:(S^1, S^2,…, S^n). Unlike the scenario approach, in which the state of the economy is assumed to be unchanged throughout the entire billing period, it is assumed that the state of the economy will change at each step of the billing period, which will enable the inclusion of economic turbulence in the investment decision-making system. To build a complete system of consequences at each step of the calculation period, we use the methodology of SWOT-analysis, as a key Foresight tool. At the same time, we assume that any consequence of the implementation of the investment project at some step of the billing period can have either a positive or negative effect. The positive effect at a certain step of the calculation period is determined in our ideas, firstly, by cash receipts (B – Benefits), generated by the investment project, secondly, favorable events, or opportunities (O – Opportunities). The negative effect at a certain step of the billing period is determined in our ideas, firstly, by cash payments, or investment costs(C – Costs), necessary for the implementation of IP, secondly, adverse events, or risks(R – Risks). Thus, a conceptual investment project related to natural resources(IP) has the following formal description:

$$IP= (\{B, C, O, R\}^1, \ldots, \{B, C, O, R\}^T).$$

We will use the conceptual investment at each stage of the pre-investment stage to calculate its effectiveness, while the concept of "various development depths" formally means the degree of certainty of the corresponding sets. In order for this model to be a working tool when making investment decisions, a methodological approach is needed that would allow us to carry out assessments from the perspective of evaluation criteria. In this study, for these purposes, we will use the hierarchical structure analysis methodology, which is based on the rigorous mathematical eigenvector method for processing inverse symmetric matrices (matrices with power calibration) [11,12]. Graphically controlling hierarchy for assessing the integral effectiveness of investment projects will be presented in the form of the following hierarchy (Figure 1)

Figure following on the next page

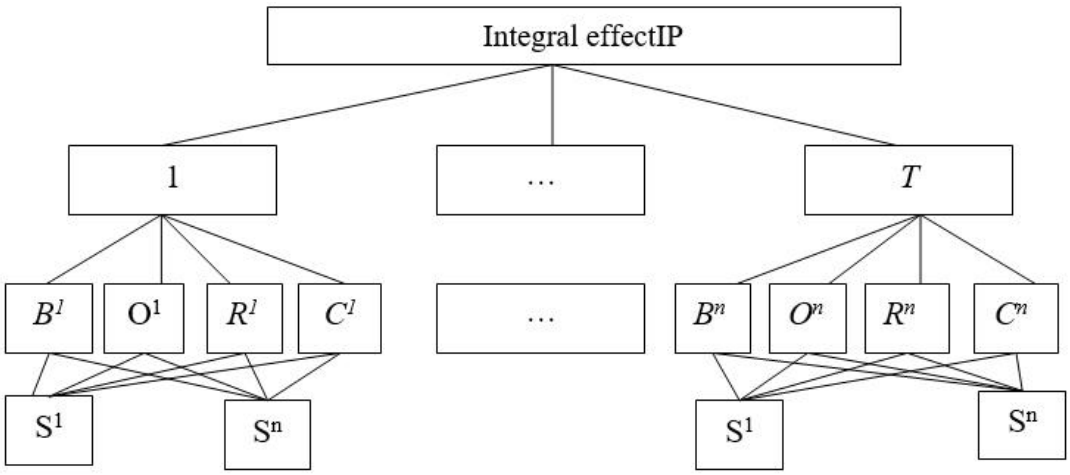

Figure 1: The management hierarchy for assessing the integrated effectiveness of investment projects

Formally, the integrated assessment of the effectiveness of investment projects is calculated according to the following formula:

$$\varphi(ip) = \sum_{t=1}^{t} \varphi_t(ip) * w(t),$$

where w (t) - "weight", the significance of the t-th step of the calculation period, φt (ip) - is the value function of the investment project at step t of the billing period.

In turn, the value function of the investment project at step t of the calculation period will be calculated using the following valuation functions, which are constructed in accordance with the hierarchy analysis method[13]:

- $\varphi_t^B(ip)$ — IP assessment function from the position of the criterion "benefits at the t-th step of the calculation period";
- $\varphi_t^C(ip)$ — the function of evaluating the IP from the position of the criterion "costs at the t-th step of the calculation period";
- $\varphi_t^O(ip)$ — IP assessment function from the position of the criterion "opportunities at the t-th step of the calculation period",
- $\varphi_t^R(ip)$ — IP assessment function from the position of the criterion "risks at the t-th step of the calculation period".

By the multiplicative form of aggregation, we finally obtain the value function of the investment project at step t of the calculation period [13]:

$$\varphi_t(ip) = \frac{\left(\varphi_t^B\right)^{W_B}\left(\varphi_t^O\right)^{W_O}}{\left(\varphi_t^C\right)^{W_C}\left(\varphi_t^R\right)^{W_R}},$$

where w^B — ″ weight ″, the priority criterion of "benefits",
w^O— ″ weight ″, priority criterion for "features",
w^C— ″ weight ″, priority criterion "costs",
w^R — ″ weight ″, priority of the criterion "risks".

We note that ″ weights ″, the priorities of the criteria, and also the significance of the t-th step of the calculation period are based on the principles of the hierarchy analysis method.

4. CONSLUSION

The article attempts to introduce a proactive approach to the analysis of the effectiveness of investments in natural resources, the essence of which in the general formulation is to prevent threats before they become relevant. In the context of the analysis of the effectiveness of investment projects, this means, first of all, an assessment of the level of adaptation of each of the analyzed projects to future conditions for their implementation. It is not possible to adequately implement this using traditional forecasting methods based on ″ movement ″ from the past to the present and further to the future. A fundamentally new approach is needed that implements ″ movement ″ from the future to the present. This proactive approach is based on UNIDO methodological principles applicable to any type of project, regardless of their technical, technological, financial, industry or regional specifics and the principles of "technological foresight" or the Foresight methodology. The implementation of these principles becomes possible due to the ability of a person (expert) to make decisions taking into account the accumulated experience (expert knowledge) and simulation modeling of future events, conditions, situations, actions. To simulate both negative and positive actions of the external environment of the functioning of investment projects, a homogeneous Markov chain with discrete time is used. In contrast to the scenario approach, in which the state of the economy is assumed to be unchanged throughout the entire operational period, it is assumed that the state of the economy changes at each step of the calculation period, which will enable the inclusion of economic turbulence in the investment decision-making system. The principle of taking into account all the consequences of the implementation of investment projects, both directly economic and non-economic (external effects, public goods), is implemented, despite the fact that they allow a quantitative assessment or some consequences can only be assessed qualitatively with the help of experts. To do this, all the consequences are abstracted into four categories: "Benefits", "Costs", "Opportunities" and "Risks". In the first and second category fall consequences considered as random variables, in the third and fourth - random events. A control hierarchy is proposed for assessing the integral effectiveness of investment projects, and corresponding evaluation functions are defined.

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THE CURRENT STATE OF RUSSIA'S FISCAL POLICY FUTURE

Tunzala Gurbanova
Azerbaijan State University of Economics (UNEC)
Baku, Istiqlaliyyat str., 6, AZ1001, Azerbaijan
Tunzala_Gurbanova@unec.edu.az

Guzel Tokareva
Ufa State Aviation Technical University
Ufa, Karl Marx St., 12, 450008, Russia
sapfo79@mail.ru

Olga Shalina
Ufa State Aviation Technical University
Ufa, Karl Marx St., 12, 450008, Russia
olenkash@bk.ru

Faniya Rastegaeva
Finance University under the Government of the Russian Federation
Moscow, Leningradsky Prospekt, 49, 125993, Russia
rfs-audit@hotmail.com

ABSTRACT

Prolonged economic stagnation and a lack of new and effective ways of the monetary policy influence on the economy triggered off an interest in the available instruments of the fiscal and organisational policy in the developed countries. In Russia, the monetary policy instruments are far from being exhausted.This paper presents an overview of the current state of Russia's fiscal policy, evaluates its performance and outlines its future challenges. Historically, Russia's economic policy has always been strongly influenced by taxes and government expenditures, which can be explained, among other things, by a substantial share of the public sector. The projecteddepletion of mineral resources in the next 20 years will bring about the necessity of tax burden redistribution. With this in mind, it is critical to define the structure of the federal investment expenditures, major spheres of production and individual projects where Russia could generate competitive advantage in doing business.

Keywords: *Analysis, Anti-crisis/bailout plan, Deficit, Fiscal policy, Federal/government budget, Expenditures, Revenues, Characteristics, Tax manoeuvre*

1. INTRODUCTION

Prolonged economic stagnation and a lack of new and effective ways of the monetary policy influence on the economy triggered off an interest in the available instruments of the fiscal and organisational policy in the developed countries (Furman, 2016; Furman, Shambaugh, 2016). In Russia, the monetary policy instruments are far from being exhausted. For example, the repo rate is 9%, and the Central Bank of Russia, unlike those in the developed countries, turned to the tight monetary and credit policy aimed at the control of inflation and increased its key interest rate. However, historically, Russia's economic policy has always been strongly influenced by taxes and government expenditures, which can be explained, among other things, by a substantial share of the public sector. Using a set of fiscal policy instruments, it is possible to introduce structural changes in the economic reproduction process, which can help overcome the heavynatural resource dependenceof the Russian economy and reverse the exacerbation of so-called «Dutch Disease».

On the global scale, the current fiscal policy, affected by the financial and economic crisis, can be characterised by the fact that the developed economies had to achieve the targeted budget deficit levels and maintain government expenditure. The emerging markets had to increase government expenditure and try to save excess revenues. When it comes to Russia, government expenditure rocketed at the time of the financial crisis. The current challenge is to achieve the target levels of budget balance. Russia manifests features of the emerging social economy. However, a substantial share of the public sector in comparison to economic liberalism leads to a considerably lower standard of living. The present paper investigates the transformation and peculiarities of Russia's fiscal policy from 2011 to 2018. The transformation of the mechanisms of the fiscal policy can be considered as a measure taken by the government to minimise the adverse effects of the financial and economic crisis that has become truly global and has seriously affected the prospects of Russia's economic recovery and growth. The problem is that the welfare state presupposes a relatively high level of government expenditure, which, in its turn, implies relevant government revenues. In this connection, Russia's fiscal policy is undergoing changes. Recognising the unique nature of the national economy, the state takes steps to find fiscal revenue sources to keep government expenditure on the current level.

2. GOALS AND CHARACTERISTICS OF RUSSIA'S BUDGET PROCESS AND FISCAL POLICY

The budget system of the Russian Federation is a three-tier system, which is determined by the federal form of government. The first tier is represented by the federal budget and the budgets of Russia's public non-budgetary funds. The second tier is comprised of the budgets of the subjects of the Federation[1] and the budgets of the local public non-budgetary funds. The third tier incorporates the local budgets. Russia's fiscal policy is shaped at the federal level. The President of the Russian Federation determines the overall goals of the budgetary policy and signs the budgetary plan. The Federal Assembly of the Russian Federation imposes taxes, fees and duties as well as fiscal charges; adopts the federal budget; approves financial laws (the Budget Code of the Russian Federation and the Tax Code of the Russian Federation) and performs other functions. The federal budget itself is drafted by the Government of Russia. The government also ensures the implementation of the budgetand is responsible for the coordination of the public finances management. The Ministry of Finance of the Russian Federation ensures the implementation and unity of Russia's fiscal and monetary policy. In the second half of 2017, Russia experienced a drastic change of the economic environment: The oil prices fell by about 50 percent, and financial sanctions against Russia were imposed. These factors made the Russian Federation adopt one-year budget planning in 2018. In the three-tier budget system of the Russian Federation, there exist three types of taxes and levies: Federal, regional and local. The federal taxes and levies are: VAT, excise tax, personal income tax, corporate profit tax, mineral resource extraction tax, water tax, tax on animal and water wildlife, stamp duty. The regional taxes include corporate property tax, gambling tax, vehicle tax. The local taxes comprise land tax andpersonal property tax.

3. ANALYSIS OF RUSSIA'S FISCAL POLICY

3.1. Federal government revenues structure from 2012 to 2018

Russia's federal government revenues in the precrisis period (from 2000 to 2011) constituted 36.4-40.2% of GDP. This figure is close to the average value of the OECD countries (i.e. 39% of GDP) and below the average EU value of 47% of GDP (Projected Budget Strategy of the Russian Federation till 2023). In 2011, Russia's federal government revenu es started decreasing as a result of the global economic crisis (by 1.04% of GDP). 2012 witnessed the record fall of 4.13% of GDP (Table 1).

[1] The Russian Federation consists of 85 federal subjects and consequently has 85 budgets.

From 2011 to 2013, the anti-crisis programme was phased in by the Russian government in order to minimise the adverse effects of the crisis. The anti-crisis plan comprises the flowing measures (Order of the Ministry of Economic Development of the Russian Federation «On the Action Plan Aimed at Improving the Situation in the Financial Sector and Separate Branches of Economy», 2011; Plan for the Implementation of the Main Anti-crisis Actions and Policies of Modernising the Russian economy of the Government of the Russian Federation for, 2013):

- budgetary financial resource allocation to ban ks, individual industrial sectors and strategic companies (electric power, defence, automobile industries and agricultural sector). SMBs were neglected in the financial support policy. The measures in question turned out to be not as effective as it had been planned due to the lack of the operational control of how the allocated resources were spent;
- granting state guarantees to banks for offering credits to businesses and organisations. This measure was one of the major instruments of expanding business loans at the time of the crisis;
- the profit tax rate to support profitability and current assets of businesses was lowered from 24% to 20%, the federal portion of the tax was reduced from 6.5% to 2.5%. In addition to 17.5%, the budgets of subjects of the Federation would get 0.5% due to the federal portion. The profit tax reduction secured the current assets of businesses, thus preventing the deterioration in the creditworthiness of businesses. Besides, the profit tax reduction had a major macroeconomic effect: Overall slowing of the fall of the main macroeconomic indicators. However, the introduction of this anti-crisis measure caused a substantial reduction of the corresponding item of the consolidated budget from 6.09% of GDP to 3.33%of GDP. Russia's economy witnessed halving of the target budget item at the end of 2011/beginning of 2012, brought about by the anti-crisis fiscal policy of 2011-2012 and a drop in business profits due to the financial crisis (Structure of the Foreign Debt of the Russian Federation, 2019);
- loosening of the depreciation policy, which boosted capital investments and secured the current assets of businesses at the time of the economic crisis. Organisations were allowed to expense a substantial part of the gross fixed assets of some depreciation groups (3-7) once a year. At present, it is possible to expense 10 to 30% of the capital assets price. Moreover, the useful life of some fixed assets was reduced by allocating them to other groups with a shorter useful life expectancy. Some experts believe that these measures have a clear motivating potential stimulating business growth. However, at the time of crisis, business profits drop, and the stimulating potential is not realised (Ponkratov, 2015);
- additional measures to support businesses in obtaining new equipment that complies with the up-to-date technological and innovative standards by exempting some types of equipment from VAT. VAT-related measures are mainly meant to remove artificial constraints in the area of tax deductions.The most effective measures are introducing VAT deductions for advance payments and cancelling the obligation to pay VAT in the monetary form in case of nonmonetary payment methods. Of utmost importance is the VAT deduction for importing of manufacturing equipment that has no domestic counterparts. This measure replaced the VAT deduction for importing equipment as contribution to the equity capital;
- supporting oil industry that experienced the slumping of world oil prices as well as oil production under special conditions by reducing mineral resource extraction tax and setting special tax treatment. Some fiscal measures were designed to reduce tax burden on oil-production companies: Increasing tax-free allowance, if the mineral resource extraction tax rate in calculated in the range 9-15 USD, and changing the conditions of extraction licences depreciation. Reduction factors of mineral resource extraction tax rate (in reference to oil) were introduced, if extraction is done in mature fields with the subsequent extension of their scope. Notable are the Government's attempts to support and boost oil production under

special conditions.A tax holiday was created for individual mineral resource blocks where extraction is challenging due to harsh environmental conditions (the Extreme North, the Continental Shelf, the Sea of Azov and the Caspian Sea).

The anti-crisis package helped sustain the crude oil production volumes, which allowed to compensate for a shortfall in the federal government revenues due to increasing profit tax revenues and oil export duties. As a result, from 2014 to 2017, the consolidated budget revenues stabilised in the range of 36-37% of GDP. In 2018, the federal government revenues dropped to 33.3% of GDP.The main reason for this was a decline in collected customs duties and fees in 2018: 3.6% of GDP. Consequently, there occurred a change in the structure of revenues; and customs duties and fees, traditionally the largest source of revenues, gave way to uniform social tax and insurance premium payments (20.9%), and VAT (19.7%). The VAT rate on domestic goods is lower than that on imported goods, which can serve as an indirect proof of the inadequacy of the import-substitution policies. In 2018, VAT revenues grew by 0.13% of GDP, brought about by an increase in rouble revenues of exporting enterprises due to a low exchange rate of the Russian rouble; however, the national average valueof loss-making companies remains 28%. On the whole, tax revenues of in the consolidated budget structure decreased from 92% in 2011 to 90.5% in 2018.

Table 1: Russia's enlarged government revenues, 2011 – 2018 (% of GDP)

Indicator	**2011**	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**	**2018**	**Revenue structure (%)**	
									2011	**2018**
Total revenues	39.17	35.04	34.62	37.26	37.69	36.93	36.93	33.32	100	100
Tax revenues	36.04	30.88	31.12	34.50	34.97	34.11	34.42	30.17	92.0	90.5
including										
Corporate profit tax	6.09	3.26	3.83	4.06	3.79	3.13	3.33	3.48	15.5	10.4
Personal income tax	4.04	4.29	3.87	3.57	3.64	3.78	3.78	3.48	10.3	10.4
VAT	5.17	5.28	5.40	5.81	5.70	5.35	5.52	6.57	13.2	19.7
Excise tax	0.85	0.89	1.02	1.16	1.35	1.53	1.50	1.33	2.3	4.0
Customs duties and fees	8.51	6.52	6.74	8.25	8.20	7.51	7.74	4.08	21.7	12.2
Mineral resource extraction tax	4.14	2.72	3.04	3.65	3.96	3.89	4.07	4.03	10.6	12.1
Uniform social tax and insurance premium payments	5.52	5.93	5.35	6.30	6.60	7.09	6.66	6.98	14.09	20.9
Other taxes and duties	1.73	1.99	1.88	1.71	1.74	1.84	1.82	2.25	4.4	6.6

Sources: GDP: Rosstat-FSSS; Enlarged Government Revenues: Federal Treasury – Consolidated Budget of the Russian Federation: 2013-2018, 2019; Consolidated Budget of the Russian Federation in 2018, 2019; Structure of the Foreign Debt of the Russian Federation, 2019

Excise tax yields increased 1.8 times (from 0.85% of GDP in 2011 to 1.50% of GDP in 2017); however, they dropped by 1.33% GDP in 2018.This can be explained by the fact that the indexation of excise tax rateoccurred faster than the pace of inflation.

As a result, tobacco excise tax yields grew (and contributed most to the aggregate excise tax yields), and alcoholic beverages excise yields dropped dramatically. Russia's fiscal policy with regard to the tax system has a number of unique traits, such as:

- the bulk of the tax burden is borne by businesses and not by individuals;
- the tax system is not socially oriented: The poor and the rich have (relatively) the same personal income rate. Income inequality among population groups is high (the Gini coefficient is between 0.410-0.416);
- taxes on international trade (export duties) and resource taxes that serve as a means of collecting resource rent (i.e. revenues from state-owned natural resources) play an important role in the country's budget. This tax group accounts for one third of the total tax revenues (more than 10% of GDP);
- although Russia believes itself to be a welfare state, consumption taxes and social charges add up to11.8% of GDP, and personal income tax equals 4% of GDP.

3.2. Tax burden

Tax burden on businesses in Russia (Table 2) is calculated as a proportion of taxes and levies paid to the revenues of businesses, and is relatively low (about 9.7%). However, tax burden varies from one economic sector to another: For extraction of mineral resources the value is 37.9%; construction is subject to 12.7%, andwholesale and retail trade to 2.7%.

Table 2: Tax burden on businesses in Russia in 2013 – 2018 (proportion of taxes paid to revenues)

Year	**2013**	**2014**	**2015**	**2016**	**2017**	**2018**
Tax burden	9.4%	9.7%	9.8%	9.9%	9.8%	9.7%
Agriculture, hunting and forestry	4.2	3.6	2.9	2.9	3.4	3.5
Extraction of mineral resources	30.3	33.2	35.2	35.7	38.5	37.9
Manufacturing	7.2	7.1	7.5	7.2	7.1	7.1
Electricity, gas and water production and distribution	5.3	4.8	4.2	4.6	4.8	5.4
Construction	11.3	12.2	13.0	12.0	12.3	12.7
Wholesale and retail trade	2.4	2.4	2.8	2.6	2.6	2.7
Transport and communications	9.8	9.7	9.1	7.5	7.8	7.3
Hotel and restaurant industry	12.9	12.5	9.9	8.9	9.0	9.0

Source: Present authors; based on data of the Federal Tax Service of Russia – Tax Burden in Different Industries of the Russian Federation from 2006 to 2016, 2017

Russia's tax collection isincreasing year by year due to improved tax administration, more efficient legislation, a crackdown on cash withdrawal and money laundering schemes, optimised and scrupulous tax inspections.

3.3. Federal government expenditures structure

Recently, Russia's federal government expenditures have been between 31 and 34% of GDP. This is significantly lower than the values in the developed countries: the average value of the OECD countries is 40%, whereas the average EU value equals 46% of GDP. At the same time, in some emerging markets (Thailand, Mexico, Chile), the government expenditures account for the «modest» 18 - 25% of GDP. Together, the expenditures of the federal government and those of the public non-budgetary funds increased by 85.3% from 2012 to 2018 (Table 3). The most considerable growth was in the areas of the national defence (167.2%), social policy (114.4%) and the protection of the environment (+137.6%; however, this budget item accounts for only

0.26%, which is a very low value). The housing and communal services expenditures stayed at the same level, and, allowing for inflation, can be said to have dramatically dropped.

Table 3: Russia's consolidated budget and public non-budgetary funds expenditures (based on current prices), RUB billion

Types of expenditure	2012		2013	2014	2015	2016	2017	2018		Increment, %
	RUB billion	Structure, %						RUB billion	Structure, %	
Total	16 048	100	17616	19994	23174	24931	27215	29741	100	85.3
Federal issues	1 313	8.1	1 440	1 357	1 437	1 525	1 639	1848	6.2	40.67
National defence	1 191	7.4	1 279	1 517	1 814	2 105	2 480	3182	10.7	167.2
National security and law enforcement	1 245	7.6	1 339	1 518	1 929	2 159	2 192	2072	6.9	66.3
National economy	2 782	17.3	2 323	2 793	3 273	3 281	4 543	3774	12.7	35.7
Housing and communal services	1 006	6.3	1 071	1 195	1 075	1 052	1 004	979	3.3	-2.4
Protection of the environment	29	0.2	28	38	43	47	70	70	0.2	137.6
Education	1 783	11.1	1 893	2 231	2 558	2 888	3 037	3070	10.3	72.2
Social policy	4 718	29.4	6 177	6 512	7 730	8 397	8 408	10100	33.7	114.4

Source: Present authors; based on data of the Ministry of Finance of the Russian Federation and Federal Treasury – Consolidated Budget of the Russian Federation in 2018, 2019; Structure of the Foreign Debt of the Russian Federation, 2019

The bulk of the federal government expenditures is allocated to national defence (10.7%), national economy (12.7%) and social policy (33.7%). The expenditures on education, culture, public health services, recreational and sporting services are trending upward. However, their share in GDP is negligible: Total 23%in 2018, which is 1.5-2 times smaller than in the developed countries. It is notable that the national defence expenditures are higher than those on education, which can potentially lead to the deterioration of the competitiveness of the Russian economy. Despite the crisis and secular stagnation, the Government does not set the goal of increasing national economy expenditures. On the contrary, their share dropped from 17.3% to 12.7% of the budget. The federal government expenditures structure differs from that of other countries. Compared to the OECD countries, the level of public investment in Russia can be described as relatively high, whereas social expenditures - education, public health services – are below the average (Degtyareva, 2017).

4. RUSSIA'S NATIONAL DEBT

From 2013 to2018, Russia's consolidated budget expenditures outweighedits revenues (Table 4), which can be explained by the low energy prices worldwide.In the last 5 years, the national debt has increased by 4.7% and reached 13.6% of GDP. At the end of 2018, Russia's national debt amounted to RUB 10954 billion, including the internal debt of RUB 7308 billion andforeign debt ofUSD 50002 million.

As compared to 2017, the foreign debt fell, if calculated in a foreign currency, but due to the weakening of the Russian rouble, it increased, if expressed in roubles. Domestic financing predominates in the debt structure (70%).

Table 4: Russia's consolidated budget deficit /surplus, 2011-2018

Indicator	**2011**	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**	**2018**
Total budget deficit,RUB billion	1989.7	2015.1	-2426	848	263	-849	-848.7	-2819.5
Total budget deficit, % of GDP	6	4.9	-6.3	-1.4	0.4	-1.2	-1.3	-3.5

Source: Data of the Ministry of Finance of the Russian Federation – Structure of the Foreign Debt of the Russian Federation, 2019

Table 5: Russia's national debt structure, 2014-2018

Indicator	**2014**		**2018**		**Increment, % of GDP**
	Debt burden, % of GDP	**Debt structure, %**	**Debt burden, % of GDP**	**Debt structure, %**	
Internal debt	7.0	78	9.1	66.9	2.1
Foreign debt	1.9	22	4.5	33.1	2.6
Total	8.9	100	13.6	100	4.7

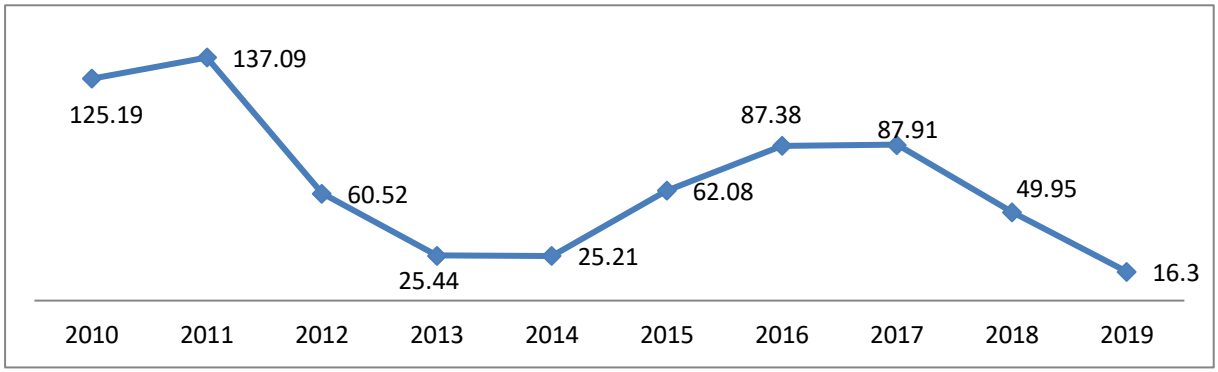
Source: Data of the Ministry of Finance of the Russian Federation – Structure of the Foreign Debt of the Russian Federation, 2019

Taken the chronic budget deficit from 2013 to 2018, the Government had to finance deficit from the Reserve Fund and the National Welfare Fund, and borrow on the regional and municipal levels.The key instrument of keeping the budget deficit from growing in 2017-2018 wasthe intentional depreciation of the rouble.

5. THE RESERVE FUND AND THE NATIONAL WELFARE FUND

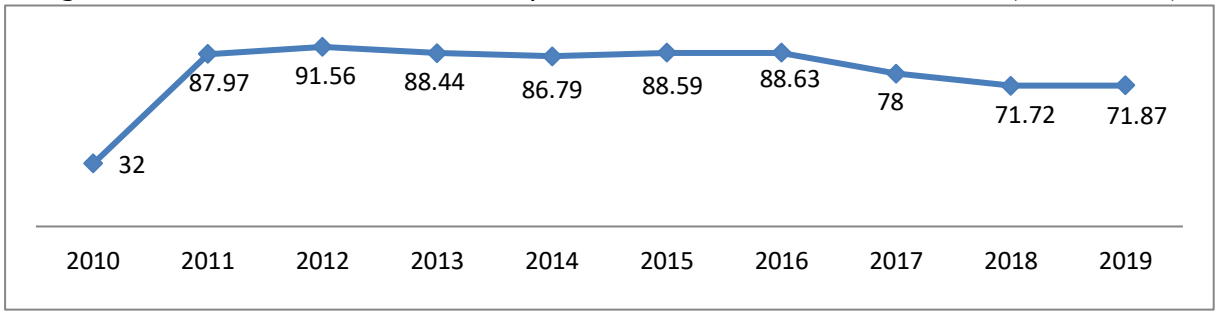
Russia's two basic sovereign wealth funds are the Reserve Fund and the National Welfare Fund.They were created to accumulate budget surplus (primary materials revenues) that stems from high oil prices on the world market. The Reserve Fund represents that part of the public funds that is used for financing budget expenditures and maintaining federal budget balance. The Reserve Fund incorporates oil and gas budget revenues that are accounted and managed separately. The Budget Code of the Russian Federation prescribes the maximum size of the Reserve Fund, namely 10% of forecasted GDP.When this limit is achieved, those oil and gas budget revenues that are still available after the oil and gas transfer is covered, will flow into the National Welfare Fund. The National Welfare Fund is that part of the public funds that is used for supporting the national pension system by co-financing the voluntary pension savings component and achieving the balance of the Pension Fund budget. From 2013 to 2016, the oil and gas budget revenues were used neither for financing the oil and gas transfer nor forthe Reserve Fund and the National Welfare Fund generation, but served thefinancial provision of the federal government expenditures. As a result, the Reserve Fund was annually replenished by the Government, depending on the world oil market conditions. Despite a boom in oil prices in 2014, the oil and gas transfer was no longer executed. Currently, the oil and gas budget revenues that will be integrated into the Reserve Fund are defined as the difference between the oil and gas revenues, calculated on the basis of the projected oil pricefor a corresponding fiscal year and the oil and gas revenues estimated on the basis of the marker price. Since the Reserve Fund assets were used to finance the budget deficit, the Fund decreased by 63.6% from 2011to 2018 (Figure 1).

Figure 1: The Reserve Fundof the Russian Federation, 2010-2019(USD billion)



The National Wealth Fund assets were used to co-finance voluntary pension savings of the Russian citizens and dropped by 18.5% (Figure 2).

Figure 2: The National Wealth Fund of the Russian Federation, 2010-2019 (USD billion)



The present authors believe that the accumulation of assets of Russia's sovereign wealth funds is not the most effective way of handling surpluses due to a low return on investment of these assets, given the rising inflation. As they are structured and managed now, the sovereign wealth funds are not involved into the internal economic policy and do not address the main internal economic challenges. In Russia with its «undercapitalised» economy with theextreme deterioration of the capital assets of the Russian businesses (48.2% in 2017), it would only be logical to allocate the assets of Russia's sovereign wealth funds to purchasing of capital assets. Surprisingly enough, the equipment wear coefficient is even higher in the industries that produce most of the assets of the Reserve Fund: 51,1% in the oil and gas sector. Withdrawing a part of the export revenues from the raw materials exporters and investing them abroad in the least profitable forms backfires as the lack of funds to securethe reproduction of these revenues.It is essential to review and reconsider the ways of allocating the assets of Russia's sovereign wealth funds and put an emphasis on developing financial instruments that allow the use of the assets in question for long-term investments and infrastructure projects. Thus, the present authors believe that the Reserve Fund as the «safety cushion» is only a short-term and provisional instrument of financing budget expenditures, and can only maintain the current level of budget expenditures at the time of a new crisis in the medium-term economic cycle. However, the current budget strategy cannot help achieve balance between increasing social expenditures and decreasing budget income base.

6. CONCLUSION

One of the key peculiarities of Russia's fiscal policy in the target period is its anti-crisis character. However, the main goals of Russia's economic policy in some aspects differ from those in the developed countries: Russia is, first and foremost, concerned with the "fight against inflation" and maintaining budget balance.

The present economic crisis in Russia has both negative and positive effects: It has revealed the fact that the economic model based on raw materials does not have a bright future. Thus, there arises a need of the radical transformation ofthe fiscal policy to make it more socially oriented and to facilitate innovative development. Currently, Russia's fiscal policy provides solutions to a number of vital issues that the country faces, but does not foster long-term sustainable economic growth. Neither does it open new financial possibilities toproduce public benefits in the future.It is obvious that the scope of the 'countercyclical' fiscal policy pursued by the Government depends on the scale of additional revenues accumulated by the budget under favourable business conditions. However, even if resource rent is collected completely to add up to the budget or the Reserve Fund assets, it cannot guarantee stability in the budget expenditures in the medium- and long-term perspective due to the tax base inthe oil and gas sector being used up. The current budget policy cannot help achieve and maintain the balance of the future budget revenues and expenditures: The revenue base has a tendency to decline over the long term, since it largely depends on the oil and gas sector, that, in its turn, will be affected by the depletion of mineral resources in the next 10-15 years. The present level of the budget expenditures does not support the development of the oil and gas sector so that it could make up for the shortfall in the oil and gas budget revenues. It would only be logical to increase the Government's investments in economy and the social sector, and infrastructure projects.It is also important to activate automatic stabilisers, which are not completely used due to Russia's flat tax rates and decreasing social transfers.

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SPATIAL DEVELOPMENT OF TERRITORIES BASED ON A SYSTEM OF KEY PERFORMANCE INDICATORS

Vafa Huseynova Arif
Azerbaijan State University of Economics (UNEC),
AZ-1001, İstiqlaliyyat str.6, Baku, Azerbaijan
vafa_huseynova@unec.edu.az

Marina Vladyka
Belgorod National Research University, Russia
vladyka@bsu.edu.ru

Viktor Zakharov
Belgorod National Research University, Russia
zakharov@bsu.edu.ru

Elena Gorbunova
Belgorod National Research University, Russia
gorbunova_e@bsu.edu.ru

ABSTRACT
Global competition, competition for markets, and globalization have led to the postulation of meaningful characteristics of national economies based on their macro-efficiency. The relevance of the work is due to the fact that the study of key performance indicators at various levels of industry, regional and national markets contributes to the further development of the country at the international level. Multi-criteria of features, functions and principles of key performance indicators that provide relatively stable competitive advantages and the development of which is a strategic priority, and the resulting synergistic effect may exceed the losses from some lag in other areas of activity. A retrospective and informative content review highlighted the comparative advantages and risks of such a system and its future prospects for the successful development of regions. Also, the theoretical and methodological basis of the study was the fundamental provisions of a number of scientific areas – the theory of world, national and regional competitiveness, the concept of regional archetypes, spatial development, and the General theory of system indicators. The paper uses analytical information from public reports, financial and economic indicators, and foreign statistical data, as well as methods for analyzing the dynamics of socio-economic indicators, comparisons, groupings, and tabular and graphical data visualization techniques. The results of the study can be used by state and local authorities to determine the effective spatial development of territories.
Keywords: *key performance indicators, effects, priorities, strategy, spatial effects, development*

1. INTRODUCTION

The current situation of the economic crisis (or panda-economic crisis) in which the whole world lives is a time of hard trials. But for those who know how to ask themselves the right questions, it is also a time of new opportunities. In the near future, the development of society will require other management technologies and indicators that characterize and reveal the state's activity in the new reality. The tasks of increasing the efficiency and effectiveness of management technologies and tools with the help of "Key Performance Indicators" (hereinafter referred to as KPI) are on the agenda (even at the governmental level). An analytical tour of a large number of scientific publications in economic and related disciplines over the past few years shows that scientists around the world are now actively studying and discussing the use

of key performance indicators as a tool to regulate economic and social development, not only at the regional level, but also at the national level. The application of performance measurement systems based on the application of KPI indicators is addressed in the works of R.S. Kaplan, M. Kenerly, C. Clark, C. Cross, R. Lynch, B. Muskel, P. Morris, D.P. Norton, E. Neeley, P. Senge, S. Wilright, R. Hayes and many other scientists. These areas are currently relevant because states are developing under ambiguous and unequal conditions (P. Drucker, E. Grove, C. Kelly). Further development and deepening of theoretical and practical aspects of the research directions is of great importance. R. Aron, J. Bell, J. Galbraith, W. Deidzard, K. Kerr, A. Marshall, W. Rostow, J. Stiglitz, O. Toffler constitute the methodological basis for conceptualizing the development of socio-economic relations in a post-industrial society. The concepts of the "triple helix" and social contract are being developed by J.K. Bertrand, B. Clark, D.A. Kirby, M.H. Irinen-Alestalo, F.S. Parayyad, W.I. Pelthol, T.N. Hernandez, a group led by H. Etzkovitz. The main idea of the KPI is that it can be used to unambiguously and meaningfully assess the performance and effectiveness of any level of activity, including the national one as a whole. The system of indicators makes it possible to reflect the whole spectrum of processes taking place in a state with the help of figures. It is designed to warn of possible problems, both current and long-term. In the majority of modern works KPI is considered as part of the system of balanced indicators of R. Kaplan and D. Norton [8, 9, 10]. However, the inventor of the system for evaluating the achievement of results of the strategy through KPI is a German economist P. Drucker, who more than half a century ago introduced into management practice the concept of "management by objectives" - the concept of management based on the assumption of potential "fruits" of functioning and planning the sequence of their achievement. According to P. Drucker, the definition of KPI should be applied only when the proposed indicators are clearly related to the strategic goal and are created on the basis of its content [3]. However, the use of the concept in literary sources does not always correspond to its initial meaning. Key performance indicators are indicators of the functioning of the State that help to achieve strategic and tactical (operational) goals. With the help of KPI you can plan, as well as monitor the effectiveness and efficiency of the company at various levels of management. Over the last decade, as the market economy develops, the management of domestic enterprises has been increasingly focused on strategic management. Accordingly, the role of the strategic component in management is increasing [10]. At the same time, there is a problem of choosing the most significant indicators, which can really serve as indicators of both current and, first of all, future success of the company, as "efficiency metrics" in the terminology of the Russian economist D. Bougrov [2]. Key Performance Indicators (KPI) concept is used for such indicators in English literature, which is most often translated as "key performance indicators" in Russian literature.

2. KEY PERFORMANCE INDICATORS

For strategic management, the implementation of KPI is important. Key Performance Indicator is a key performance indicator. A key performance indicator system should be consistent with the following main objectives: measure performance in relation to meeting key customer needs; provide clarity on strategic objectives; focus on key processes and critical indicators; signal improvements in performance; identify critical factors requiring attention; provide a clear basis for identifying the achievement of results and appropriate rewards. The KPI system is a tool for measuring objectives. The indicators used to manage and evaluate activities should be clearly linked to the objectives, i.e. formed on the basis of their content. The public management system based on KPI enables the achievement of strategic goals, helping managers to effectively manage available resources in key areas of activity based on information on economic and activity information.

Table 1: Classification of key performance indicators

Financial indicators measure the financial performance of the State (levels) (unit, employee).	**Non-financial** indicators measure the non-financial performance of government (levels)
Quantitative indicators assess the quantitative results of the state's activity (levels) objectively using numbers in certain units (e.g., %, monetary units, tons, kilometers, etc.). To measure quantitative indicators, metric scales are used.	**Qualitative indicators** assess the qualitative results of state activities (levels) subjectively using judgments (e.g. "very bad", "bad", "good", etc.) and scores (e.g. 1, 2, 3, 4, etc.). Nominal and ordinal scales are used to measure qualitative indicators.
Operational indicators measure the achievement of the State's operational objectives.	**Strategic indicators** assess the achievement of strategic goals of the state.
Lagging indicators measure time-bound and irreversible state performance.	**The leading indicators** assess the current and still reversible results of the state's activity.
The performance indicators assess the results obtained by the state (useful and side effects, resource and time consumption) without their relative mutual comparison. They are indicators of the effect or cost of resources.	**Performance indicators** measure the resulting benefit in relation to the resources or time spent. It is a relative useful effect in one sense or another, received per unit of costs of this or that resource.
Absolute indicators measure the results obtained in absolute terms (denomination) without comparing them with anything (past indicators, total values, resource and time consumption).	**Relative indicators** measure the results obtained in relative terms (coefficients, indices) compared to anything or indicators of previous periods, total values, resource costs and time.
Functional indicators measure the performance of regular government functions.	**Project indicators** assess the implementation of national or other state projects (budget compliance, time, quality of project stages and works).

**[https://www.cfin.ru/management/controlling/kpi_choice.shtml]*

The multicriteria of signs and principles of KPI providing rather steady competitive advantages of the countries which development is strategically priority purposes are revealed, and the received synergistic effect can exceed losses from some lag of other directions of activity of the state. In our opinion, the key indicators of the state are the combination of industrial, energy, production, innovation, financial, infrastructural, scientific and technical activity results, technologies and intellectual resources, which lead to changes in the economy that generate income and to changes in the social sphere in terms of quality of life. At the same time, we define the key indicators of the state as the aggregate set of new knowledge, directions, innovative resources and processes that ensure the functioning (survival) of the state in the short term and development in the long term; they are "invisible" to other countries and are difficult to reproduce, because they should be more than the effects of a particular sector or country; unique to the country itself; important in international strategic decisions, valuable from a commercial and market point of view and development.

3. SOME PERFORMANCE INDICATORS IN THE DEVELOPMENT OF ECONOMIES AROUND THE WORLD

In the case of the state, these indicators should be viewed more as a strategic management tool in the formation and implementation of strategic goals. As a management tool, which allows to project strategic goals to the level of operational management, it is a format of description of

activities with the help of a set of key indicators for each strategic perspective of the state. It allows to do so simultaneously:

- to link the strategic goals with the operational actions, which allow to realize the state strategy;
- to take into account nonnfinancial indicators (along with financial indicators), which is necessary to assess the performance of the university, associated with intangible assets and information;
- to maintain a balance between strategic and operational management levels, past and future results, internal and external aspects of activity;
- respond in a timely manner to inappropriate changes in processes by differentiating between indicators that measure achievement and those that reflect the processes to achieve those results.

An important methodological characteristic of this system, in our opinion, is the possibility of its imposition on the activities of the subject at any level, including the national one, taking into account modern combinations of its parameters, expansion of perspective projections and adjustment of hierarchies. Table 2 shows the dynamics of indicators of development of macroeconomics of Azerbaijan in the period 2014-2018.

Table 2: Dynamics of key macroeconomic indicators of Azerbaijan for 2014-2018

№	Indicator name	Years					Rejection 2014/2018	
		2014	2015	2016	2017	2018	Difference	%
1.	Number of population, thousand people	9593,0	9705,6	9810,0	9898,1	9981,5	388,5	104,0
2.	Gross domestic product, million manat	59014,1	54380,0	60425,2	70337,8	79797,3	20783,2	135,2
3.	Income of population, million manat	39472,2	41744,8	45395,1	49187,9	53688,6	14216,4	136,0
4.	Fixed assets, million manat	110677,9	124008,4	169120,3	182788,5	193491,0	82813,1	174,8
5.	Investment in fixed capital, million manat	21890,6	20057,4	22706,4	24462,5	25877,0	3986,4	118,2
6.	Average monthly nominal accrued salary, manat	444,5	466,9	499,8	528,5	544,6	100,1	122,5
7.	Government budget revenues, million manat	18400,6	17498,0	17505,7	16516,7	22508,9	4108,3	122,3
8.	State budget expenditures, million manat	18709,0	17784,5	17751,3	17594,5	22731,6	4022,6	121,5
9.	State budget deficit/surplus, million manat	-308,4	-286,5	-245,6	-1077,8	-222,7	85,7	72,2
10.	Savings of population in banks, million manat	7188,4	9473,9	7448,7	7561,2	8375,4	1187,0	116,5
11.	Balanced financial result (profit minus loss) of organizations' activity, million manat	10430,5	-222,5	-1363,4	1684,6	6051,1	-4379,4	58,0

**[The State Statistical Committee of the Republic of Azerbaijan. (2020). Retrieved 23.03.2020 from https://www.stat.gov.az/?lang=en]*

State budget - a financial document containing the total income and expenditures of the country. It consists of two parts: revenue and expenditure. State revenues consist of tax revenues - property taxes, personal income taxes, turnover taxes such as value added tax (VAT), excise taxes and other fees, corporate income taxes, as well as fines, penalties and other payments. Government expenditures consist of social programs, state apparatus payments, defense expenditures and other items [24]. In 2014-2018, state budget revenues increased by 22.3% and expenditures by 21.5%. The state budget deficit / surplus, on the contrary, decreased by 27.8% and by the end of 2018 the budget deficit amounted to 222.7 million manat. Population and gross domestic product increased by 4.0% and 35.2% respectively. Balanced financial result (profit minus loss) of organizations' activity by the end of 2018 decreased almost 2 times compared to 2014. However, from 2016 it increased by AZN 7414.5 million. This indicates a low rate of economic growth in Azerbaijan. Money income of the population includes payments for labor of all categories of the population, pensions, allowances, scholarships and other social transfers, proceeds from the sale of agricultural products, income from property in the form of interest on deposits, securities, dividends, income of persons engaged in entrepreneurial activities, as well as insurance benefits, loans, income from the sale of foreign currency and other income [6]. This indicator increased by 36.0% during 2015-2018, which indicates the normalization of the financial sector of the country. The indicator of fixed assets increased in 2018 by 74.8% compared to 2014. Such increase is mainly connected with the growth of investments in fixed assets (by 18.2%). Average monthly nominal accrued salary also increased its index by 22.5%, which could affect the growth of the salary fund. The increase in savings in banks by 16.5% indicates an increase in the financial literacy of the population and confidence in commercial banks. Table 3 shows the dynamics of Russia's macroeconomic development in the period 2014-2018.

Table 3: Dynamics of key macroeconomic indicators of Russia for 2014-2018

№	RF, macroindicator	Years					Rejection 2014/2018	
		2014	2015	2016	2017	2018	Difference	%
1.	Number of population, thousand people	146267,0	146545,0	146804,0	146880,0	146781,0	514,0	100,4
2.	Gross Domestic Product, billion rubles	79030,0	83087,4	85616,1	91843,2	104335,0	25305,0	132,0
3.	Industrial Production Index, %	101,3	99,2	102,2	102,1	102,9	1,6	101,6
4.	Fixed assets, million rubles	147429656,0	160725261,0	183403693,0	194649464,0	210940524,0	63510868,0	143,1
5.	Investment in fixed capital, million rubles	13902645,0	13897188,0	14748847,0	16027302,0	17595028,0	3692383,0	126,6
6.	Volume of innovative goods, works, services, million rubles	3579923,8	3843428,7	4364321,7	4166998,7	4516276,4	936352,6	126,2
7.	Average labor productivity, in % of the previous year	-	98,9	100,2	101,9	102,3	-	-
8.	Average monthly nominal accrued salary, rub.	32495,0	34030,0	36709,0	39167,0	43724,0	11229,0	134,6
9.	Balanced Financial Results (Profit less Loss) of Organizations' Activities, mln.	4346793,0	7502736,0	12801581,0	9036848,0	12400336,0	8053543,0	285,3

**[https://www.gks.ru/free_doc/new_site/business/invest/met-inv-fed.pdf]*

Based on the data presented in Table 1, it can be concluded that the population of the Russian Federation has increased by 0.4 per cent over the last five years and GDP growth by 32 per

cent. One of the factors of GDP growth is inflation: in 2018 it was 4.2 per cent, and in 2014 it was 11.4 per cent [19]. Production index is a relative indicator characterizing changes in production scale in comparable periods. Index of production is used in the analysis of dynamics of physical volume of production [1]. During this period it increased by 1.6%. Labor productivity characterizes the productivity of work, which is measured by the amount of work (production, services) made in a unit of time. By the end of 2018, this indicator reached its maximum value and increased by 3.4%. This indicates an overall increase in the country's production. Fixed assets make up the most important part of Russia's national wealth. Fixed assets are manufactured assets that are to be used repeatedly or permanently for a long period of time, but not less than one year, for production of goods, provision of market and non-market services, for management needs or for provision to other organizations for a fee in temporary possession and use or for temporary use. Fixed assets include buildings, structures, machinery and equipment (workers, power and information), vehicles, working and productive livestock, perennial plantings, and other types of fixed assets [5]. This indicator increased by 43.0% between 2015 and 2018, which is characterized by an increase in production capacity. In official statistical accounting investments in fixed assets represent expenses for construction, reconstruction (including expansion and modernization) of objects that lead to increase in their initial cost, acquisition of machines, equipment, vehicles, production and economic inventory, accounting of which is performed in the order established for accounting investments in non-current assets, investments in intellectual property objects; cultivated biological resources. Investments in fixed assets include expenses for creation and acquisition of new fixed assets, as well as imported assets, which are made at the expense of all sources of financing, including budget funds on a refundable and non-refundable basis, loans, technical and humanitarian assistance, exchange contracts [17]. In the last five years, the figure has increased by 26.6%. The Science section contains statistical information on the main indicators characterizing the state and level of development of Russia's scientific potential. It provides information on the number of organizations engaged in scientific research and development, number and composition of employed personnel, training of scientific personnel, expenditures on civil science from the federal budget, internal expenditures on research and development [23]. The volume of innovative goods, works and services increased by 26.2% in 2018 compared to 2014. This indicates the innovative development of the country. Average monthly nominal accrued salary of employees is calculated monthly based on the results of continuous and sample statistical observations made with different periodicity, on the basis of information received from organizations of all types of economic activities and all forms of ownership, and is determined by dividing the fund of accrued salary of employees by the average number of employees and the number of months in the reporting period. The payroll includes amounts of wages and salaries accrued to employees in monetary and non-monetary forms (including personal income tax and other deductions in accordance with Russian legislation) for worked and non-worked hours, compensation payments related to working hours and working conditions, additional payments and allowances, bonuses, lump-sum incentives, as well as payments for food and accommodation, which are of a systematic nature [14]. The average monthly nominal accrued salary increased by 34.6% in 2018 as compared to 2014. Balanced financial result (profit minus loss) - the final financial result identified on the basis of accounting of all business operations of organizations is the sum of balanced financial result (profit (+), loss (-)) from the sale of goods, products (works, services), fixed assets, other property of organizations and other income reduced by the sum of other expenses. This indicator has more than doubled over the period 2014-2018, which indicates the effectiveness of the state. We consider it mandatory to introduce social indicators of the quality of life of the population such as housing, health care, education, transport and communications, culture and sports, recreation and tourism, etc.

4. CONCLUSION

The research made it possible to clarify the interpretation of the term KPI in terms of government activities. Key indicators of the state is a combination of industrial, energy production, innovation, financial, infrastructure, the results of scientific and technological activities, technologies and intellectual resources, which lead to changes in the economy that generate income and to changes in the social sphere in terms of quality of life (housing, health, education, access to the Internet, culture, tourism). At the same time, the key indicators of the state are defined by us as a complex of new knowledge, directions, innovative resources and processes, which ensures functioning (survival) of the state in the short term and development in the long term; they are "invisible" for other countries and difficult to reproduce, as they should be more than the effects of a single sector or country; unique for the country itself; important in making international strategically important decisions, valuable from a commercial and market point of view and development. In addition, the lower hierarchical level of key performance indicators is the system of financial and non-financial indicators, which are indicators of performance in achieving the strategic objectives of the state, allowing tactical management based on developed intermediate operational indicators. The KPI system should be applied only when the proposed indicators are clearly linked to the strategic goal and are formed on the basis of its content. We consider it expedient to use KPI for operational management by constructing intermediate operational indicators based on the key strategic indicator (KPI itself), calculated for the current period of time. The use of KPI and indicators developed on their basis of intermediate goals and objectives of the state allows, on the one hand, to track progress towards a strategic goal, on the other hand, it is a tool for tactical management and timely corrective decisions on the way to achieve strategic objectives.

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HOW TO COMMUNICATE A PRICE TO THE CUSTOMERS

Zdenka Vidrova
University of Zilina
Univerzitna 8215/1, 010 26, Zilina, Slovakia
zdenka.vidrova@fpedas.uniza.sk

Lubica Gajanova
University of Zilina
Univerzitna 8215/1, 010 26, Zilina, Slovakia
lubica.gajanova@fpedas.uniza.sk

ABSTRACT

Right and effective price communication is very powerful tool for persuading customers to buy products and services. Companies are able to set the human minds of their customers through suitable strategy in price communication in a such way that customers will consider the price as fair and advantageous. Subsequently they will decide to buy product or service from that company and they can become regular and loyal customers. In this paper we focus on some rules how company should communicate new prices to the market. Then we provide a guidance for improving company´s price communication the prices to customers and describe some tools for effective price communication. In this article are also many arguments gaining from various researches, which provide us information about customer´s knowledge about prices. We found out that many customers do not know the real price of products and services, and therefore they are willing pay more. So it is important what price strategy and psychology a company choose to persuade its customers buy products or services and that prices are set up right. Company should not forget to communicate in fairly way and set the prices according to economic value of products and services. Economic value can be described as a measure of the benefit from a good or service to an economic agent. The economic value should not be confused with market value, which is the minimum amount a consumer will pay for a good or service. Thus, economic value is often greater than the market value.

Keywords: *communicating fairness, marketing, price, price communication, price strategy*

1. INTRODUCTION

50 % of customers are willing to pay more. Companies should grasp this information and take advantage of the opportunity to convince them with better price communication. Michal Jezek, CEO in company Karsa Technologies, on his pricing blog says that an enterprise should not look at pricing as just numbers but as a psychological game. Human mind is a sophisticated machine, but there is the right tool for every mechanism. It is only up to company, to choose right tool and how it will communicate prices to its customers (Jezek, 2015). Neuromarketing is related to the perception of a particular marketing communication by the human mind. The findings of recent years indicate that a significant proportion of consumer purchase decisions is made on the basis of emotions evoked by a particular communication means. It is the new tool to better understand consumer behavior (Nadanyiova, 2017). It is already fact, that buyers do not have an exact overview of what the prices should be. One of evidence is the following study. Professor Peter R. Dickson from Florida International University and professor Alan G. Sawyer from University of Florida have investigated buyers' knowledge of price. Researchers were pretending to be stock takers and they stood with clipboards in supermarket. At the moment buyer placed an item in a cart, a researcher asked him about price. Less than half of buyers answered exactly. Most of them underestimated the price of the product and more than 20 % had no idea of the true price (Dickson and Sawyer, 1990).

True about customer´s bad knowledge about prices is also documented since 1972 by a mainstay of CBS´s daytime programming, game show The Price Is Right. This program is built on different types of situations, in which competitors have to guess the price of packaged goods, cars, appliances and other retail products. Contestants often guessed item prices 50% lower than their real price. Result: Customers´ information about the market is so far from real state that it hardly deserves to be called knowledge at all (Anderson and Simester, 2003). These studies show that most buyers do not know the real price. Therefore, it is very important how the company communicates the price to its customers. In most cases, it depends on what psychology the business uses to persuasive the buyer places the product in a shopping cart. If the customer wants to make an informed purchase decision, it is not enough to take the price tag into account. He must also know the prices of other items, prices in other stores and prices might be in the future (Krizanova et al., 2014). The customers expect their organization to meet their ultimate demands. They anticipate the organization performance to reach a certain acceptable level corresponding to the image, products quality, delivery dates and price-to-quality ratio (Krylov, 2019). Customers in the market have many options to meet their needs and can choose from a wide range of goods and services. Loyal customers are greatest purpose and ambition of each company (Kliestikova et al., 2018). The objectives of the following paper are as follows:

- to provide many arguments gaining from various researches, which provide us information about customer´s knowledge about prices,
- to give the companies some guidance on how to communicate prices fairly,
- to describe some tools for effective price communication.

The presented paper is divided into 4 main parts – Introduction, Methodology, Results and Conclusion. In Methodology section, the research methodology and scientific methods are described. Chapter Results is divided into 3 subchapters - Communicating new prices to the market; Guidance for improving company´s price communication and Effective tools to communicate prices to customers. Chapter Conclusion summarizes the most important findings of the authors.

2. METHODOLOGY

This chapter is devoted to the description of the scientific methods that the authors used to create the paper. The authors used the following scientific methods: meta-analysis and synthesis. Meta-analysis is a scientific method that summarizes data from several sub-independent studies. The aim is to identify and quantify the prevailing trends or to identify the causes of the different conclusions of the work. We used the scientific method of synthesis to find out the links between these earmarked elements, contradictions, their interconnections, and then we could reproduce the phenomenon under investigation with its essential features and relationships. The synthesis of knowledge consisted of joining individual parts into wholes - we combined them into individual subchapters in main chapter 3 Results. The literature was collected by using various sources, the main part was created by research papers from scientific databases Web of Science and Scopus. We identified such papers using the keywords “price”, “price communication”, “price strategy”, “communicating fairness” and "marketing". The results of the paper were supported by many studies carried out by well-known experts and authors operating in this field.

3. RESULTS

This section is divided by following subheadings – 3.1 Communicating new prices to the market; 3.2 Guidance for improving company´s price communication and 3.3 Effective tools to communicate prices to customers. Subchapter 3.1 is about communicating new prices to the

market, so how to act when prices rising for various reasons. In subchapter 3.2 the authors introduce concrete tips for improving price communication, that is how should sales representatives behave on meetings with customers. Finally, in subchapter 3.3, the authors recommend some effective tools to communicate prices, which are frequently used and are very popular and common marketing techniques, for example sale sign; number 9 at the end and others.

3.1. Communicating new prices to the market

When is company setting a new price level or increasing its prices, it should be careful in communicating the rationale for the change, because there is potentially an issue of "fairness". One of the most powerful factors influencing price sensitivity is how to customers perceive fairness from the side of company (Hollowell et al., 2019). Companies can choose from different approaches to communicating fairness. Just as there are different approaches to communicating fairness, there are different reasons for price changes. The first reason of increasing prices can be rising raw materials costs. In this case, customers are worried about whether the seller is raising prices reasonably and whether treat equally to all customers, particularly competitors. The first step in that situations to preserve communicating fairly - company should announce such a change by letter, email or press release to all customers simultaneously and explains why price increases are necessary. Company can use sentence, for example "Energy prices have increased 24 percent; energy accounts for 10 percent of the price you pay, so prices must increase by 2,4 percent" and be able to provide evidence. One option is to consider indexing prices to objectively measure raw material costs, such as a published commodity price index. If customers, also competitors assume that prices will decrease after cost reduction, they better accept price increases. Because of indices can be adjusted weekly or monthly depending on the frequency of raw material price changes, indexed pricing is especially useful in times of significant price spikes (Nagle and Müller, 2018). Second, company should not be opportunistic by attempting to gain market share by compromising on the price increase. To waive a 5 percent increase for customers willing to give the company 20 percent more volume can be tempting, particularly in industries with excess capacity (Nagle and Müller, 2018). But such an action may well be short-sighted if company´s competitors cannot afford to lose volume any more than company can. Although being opportunistic may lead to a short-term volume increase, it will surely invoke a competitive response and send a clear message to customers that the rationale for the price increase was not legitimate. In addition, it is needed to caution against waiving all or part of price increases for largest customers. Not only is the impact of the price increase diminished, but the diminished impact compounds over the course of several increases (Nagle and Müller, 2018). On the other hand, companies can consider non-price mechanisms to "raise" prices and through this way to lessen the customer impact. In case a sluggish economy or increases of input costs, suppliers often turn to less visible mechanisms such as adding a new "fuel recovery" charge to bills for services or reducing package sizes for consumer products. These changes are often barely perceptible to consumers and the familiar price point that consumers are accustomed to remains intact. These mechanisms were used by yogurt maker in attempt to absorb increasing costs. Yogurt maker recently decreased its package size, but its sales soar. The reason was that the manufacturer emphasized the now lower calorie count per single-serve package and diet-conscious consumers viewed this as a benefit. On this example we can see a power of right-selected words from the side of producer, which influenced customer´s purchase decisions and his mind. That's how psychology works (Nagle and Müller, 2018). Another mechanism to mitigate the effect of price increases is to use a lower-priced brand (in groceries it is often a "house brand"), to provide other alternative for price-sensitive customers and there is a risk of either changing suppliers or reducing the quantity purchased.

Other tactic is to motivate buyers to adopt low-cost behaviors such as online purchasing (common among airlines who waived reservation charges online while cutting payments to travel agents) or encouraging a shift to "off peak" purchase (common among health clubs and cruise lines) to improve capacity utilization. Finally, in some cases, companies can switch product formulation - for example when cotton prices rose, some of clothing manufactures adjusted the fiber content (rather use cheaper synthetic materials as more expensive cotton) as a way to manage the cost increase (Mihardjo et al., 2019). Communicating fairness is also necessary in such situation, when company discovers its justification to increase prices for some products. This reason is legitimate after comparison prices of its products and services with their economic value. Goal of company should be to reconcile these two parameters. In some cases, this step would mean higher prices, in others lower prices (Meilhan, 2019). The company should use the right price communication - customers must not to feel that price increases are being forced on them. One opportunity is to provide customers some options, how they can adapt to the new level of prices. A special segment of customers are large companies, who can defend the price change. One of option for such type of customers is to "earn" lower prices by various ways, for example, signing longer-term supply agreements; committing to full-truckload shipments or other activities that can lower costs. In cases, where there is industry over-capacity, company should be careful. Competitors will likely retaliate to recapture any lost share. Alternatively, company can be prepared to make two offers - one of them would be at higher prices, but of course with higher added value and for more price sensitive customers, one offer would stay at old price level, of course with lower economic value (Krizanova et al., 2013). It is not important which approach the company adopts, critical point is that customers should pay for the value they receive. Company provides them choices for how that happens, the perception of fairness increases and is highly probable the price change will be successful. However, it is possible, fair price communication can have undesirable effects. We present an example from practice. One well-known manufacturer of medical devices increased prices about a 40 percent for one of its key products. This increase was timely and carefully communicated to customers. The company thought it well and fairly, however it forgot on the fact that its prices were not raising annually along with industry practice, but suddenly by 40 percent. It was a tactical mistake from the side of producer, so company announced customers three months in advance of the increase to allow them to prepare for the new prices. To ensure further fair communication, company explained in letters for customers that the increased price will be still lower than prices of other medical devices on the market. Not surprisingly, some customers bought the product in advance at a lower price. But, giving them that option to mitigate the immediate effect of the change made the company´s decision seem fair and reasonable, while also making it more difficult for the firm´s competitor to exploit the increase to gain share. Sales representatives explained on individual meetings with important customers, that prior to the price increase, the product was not generating sufficient returns to fund continued research and development (R&D). This was the important information for doctors and hospitals, who relied on the company as technology leader, to continually incorporate new technology. To reinforce the inherent fairness of the price change, they committed to invest much of the additional profit in R&D that would benefit customers in the form of new products (Nagle and Müller, 2018). Setting market-relevant prices and then their fairly communicating requires a combination of both art and science. There exist many useful tools and analytics available to marketers. Finally, price setting usually comes down to using informed judgment to find a price that balances strategic goals, costs, customer value, and potential competitive responses (Nagle and Müller, 2018).

3.2. Guidance for improving company´s price communication

It is very important, if sales representatives support and stand behind the prices of products, despite of they are overpriced or underpriced. Customers will know this attitude. If sales representatives think the prices are unrealistic, customers will sense it and use this attitude as leverage for better discounts and rebates (Anderson and Simester, 2003). Warren Buffet, billionaire investor, claims following: "Your ability to raise prices without losing sales to a competitor means you have a very good business." Therefore, it is necessary to join sales team into the whole process for the success of the price increase. These following steps could be useful to effective price communication to help to company increase its prices in the future without some dramatic actions, for example customer attrition. The key factor for building trust within any relationship is transparency, so creating as much openness with customers as possible way. Before increasing prices company should inform clients about this fact as soon it can. This allows them to plan and adapt their budgets swiftly, with minimal impact to their bottom lines. Practicing up-front price communication proves trustworthiness and strengthens positive relationships between customers and sales team, also company (Nadanyiova, 2014). Success of price increase starts long before the dreaded initial conversation with customers. In every conversation company should emphasize the value of products or services and how can customers benefit from them. Other things, which company should stress are customer service, on-time delivery, dedication to the highest quality, and new and improved product features. On the other hand, many companies constantly make product tweaks to improve customer satisfaction but forget to actually communicate these with customers. During communication, it is important to avoid mentions of commodity or material costs. To build upon this point, company should make an effort to really get to know its customers and build an authentic and personal relationship with them (Anderson and Simester, 2003). In last two points, the authors introduce concrete tips for personal communicating with customers. Firstly, sales representatives must convince customers to stick around and move forward at a higher cost to them. The whole conversation must be realized using the right tone and style. It should start with gratitude by thanking customers for their business and ongoing relationship with company. The second step - to shift to relaying information about the price change by speaking slowly and calmly. A steady and careful explanation expresses confidence in company's decisions. Whatever happens, company should not apologize for the price increase. That immediately signals price weakness and an opportunity for customers to negotiate. Sometimes, sales representatives react to questions they're unprepared for by rambling or answering with the first thing that comes to their mind - they should first think, then talk. Listening is important aspect, because customers want to be heard too. Pauses, hesitations and heavy sighs all communicate different things and provide different levels of context. For example, a sales representatives' heavy sigh following a list of questions from a customer signals, "I'm annoyed I have to give such a long explanation." A short pause communicates thoughtfulness and an attempt to provide an accurate answer while a long one reveals the lack of a good answer at all (Anderson and Simester, 2003). While some sales relationships are built over phone calls, many still benefit from face-to-face customer relationships. Successful price increases for these customers heavily rely on nonverbal communication, doubling the responsibility of sales team. It is valuable to focus on body language conveying signs of trust, also to maintain eye contact, avoid visual distractions, and give the customer full attention. Important are other additional elements too, for example smiling, being positive and maintaining confident facial expressions (Anderson and Simester, 2003).

3.3. Effective tools to communicate prices to customers

The authors will introduce the most common pricing cues retailers use, which are common marketing techniques. If they are used appropriately, they can be effective tools for building

trust with customers and convincing them to buy products and services. However, if they are used inappropriately, these pricing cues may breach customers' trust, reduce brand equity, and give rise to lawsuits. Nowadays, when market environment is more and more globalized, brand value building and managing is a significant challenge for managers. Despite the brand value is "powerful weapon" for marketing managers, it can easily turn against to them (Gocłowska et al., 2019). Companies should be careful, because by means of a strong brand, the manufacturer can establish strong and positive relationships with their customers (Kljucnikov et al., 2019). The brand itself is one of the most important components of corporate intangible wealth; companies protect them and pay huge attention to forming them (Valaskova et al., 2018). The price is very important for the perception of brand value (Krizanova and Majerova, 2013). The most popular of the pricing cues retailers use is the sale sign. It is usually placed somewhere near the discounted item. Anderson and Simester made some tests with several mail-order catalogs, which document following: using the word "sale" beside a price (without actually varying the price) can increase demand by more than 50 %. Placing a sale sign on an item costs the retailer virtually nothing. Customers trust sale signs, because they are accurate most of the time. Admittedly, retailers do not always use such signs truthfully, but cases, where sale signs are placed on non-discounted items, are infrequent. And besides, customers are not that easily fooled (Anderson and Simester, 2003). Another common pricing cue is using a 9 at the end of a price to denote a bargain. This pricing tactic is so common, so we can think that customers would ignore it. But response to this pricing cue is remarkable. In general, human would expect demand for an item to go down as the price goes up. But the opposite is true. In study by Anderson and Simester, researchers were able to increase demand by a third by raising the price of a dress from $34 to $39. By comparison, changing the price from $34 to $44 yielded no difference in demand. Similar research did Rutgers University professor Robert Schindler and then-Wharton graduate student Thomas Kibarian in 1996, when mailed to customers two versions of a women's clothing catalog. One version had prices that ended in 00 cents and the second version included prices that ended in 99 cents. The professors found that customers who received the second version were more likely to place an order. As a result, the clothing company increased its revenue by 8% (Anderson and Simester, 2003; Schindler and Kibarian, 1996). For most items, customers do not have accurate price points they can recall at a moment's notice. But every customer probably knows some benchmark prices, typically on items he buys frequently. These price points are prices for signpost items. Research suggests that customers use the prices of signpost items to form an overall impression of a store's prices. That impression then guides their purchase of other items for which they have less price knowledge. For instance, a customer looking to purchase a new tennis racket might first check the store's price on a can of tennis balls. If the balls are less than $2, the customer will assume the tennis rackets will also be low priced. If the balls are closer to $4, the customer will walk out of the store without any tennis gear and he believes that the bargains are elsewhere (Anderson and Simester, 2003). So far, authors have focused on pricing cues that consumers rely on and that are reliable. Far less clear is the reliability of another cue, known as price matching. It's a tactic used widely in retail markets, where stores that sell, for example, electronics, hardware, and groceries promise to meet or beat any competitor's price. Tweeter, a New England retailer of consumer electronics, takes the promise one step further: It self-enforces its price-matching policy. If a competitor advertises a lower price, Tweeter refunds the difference to any customers who paid a higher price at Tweeter in the previous 30 days (Hollowell et al., 2019). After a large-scale study of prices at five North Carolina supermarkets, University of Houston professor James Hess and University of California at Davis professor Eitan Gerstner concluded that the effects of price-matching policies are twofold. First, they reduce the level of price dispersion in the market, so that all retailers tend to have similar prices on items that are common across stores.

Second, they appear to lead to higher prices overall. Indeed, some pricing experts argue that price-matching policies are not really targeted at customers; rather, they represent an explicit warning to competitors: “If you cut your prices, we will, too.” (Hess and Gerstner, 1991). To maximize the effectiveness of pricing cues, retailers should implement them systematically. Ongoing measurement should be an essential part of any retailer’s use of pricing cues. In fact, measurements should begin even before a pricing cue strategy is implemented to help determine which items should receive the cues and how many should be used. Following implementation, testing should focus on monitoring the cues’ effectiveness (Durica and Svabova, 2015).

4. CONCLUSION

Human mind is a sophisticated mechanism that can be influenced by the right psychology and strategy. Therefore, businesses can also influence the purchasing behavior of the customer (consumer) by correct approach to price communication. These conclusions document many of the research mentioned in this article. They confirm that many customers do not know the true value of a product or service, and up to 50% of them are willing to pay more. This means that if a company chooses the right communication strategy in the field of pricing and knows how to do it, it can achieve great results in its business and increase its profits (Victor et al., 2019). The basis of price communication is to communicate fairly. The article provides one chapter about communicating new prices to the market, so how to act when prices rising for various reasons. In next section, the authors introduce concrete tips for improving price communication, that is how should sales representatives behave on meetings with customers. Finally, the authors recommend some effective tools to communicate prices and to persuade customers, which are frequently used and are very popular and common marketing techniques, for example sale sign; number 9 at the end and others. The article's conclusions are as follows. Not every customer knows the price of the product or service. If he did not see the price tag, he would probably not guess the price of the product if he does not buy it every day. Therefore, the enterprise has the opportunity to "play" with the mind of its customer. But it must not deceive him and it must play fairly. The company should not be apologizing for the price increase, just to notify customers. And very important note, to think before act. The authors think that a well-set and thoughtful pricing strategy and price communication is the foundation of a company's success, on the contrary, when company underrate these things, it can get into trouble. Of course, the effectiveness of price strategy and price communication must be measured and evaluated on a regular basis. If necessary, these mechanisms can be adapted to the current market situation. It is necessary do not forget the feedback from customers, because they mainly ensure business survival.

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FINANCIAL INNOVATION IN THE CONDITIONS OF DIGITALIZATION OF THE ECONOMY

Ali Abbasov
Azerbaijan State University of Economics (UNEC),
Baku, Istiqlaliyyat str., 6, AZ1001, Azerbaijan

Zahid Mamedov
Azerbaijan State University of Economics (UNEC)
Baku, Istiqlaliyyat str., 6, AZ1001, Azerbaijan
prof.zahid.mamed@gmail.com

Victoria Kovalenko
Odessa National Economic University
Odessa, Preobrazhenskaya str., 8, 65082, Ukraine
kovalenko-6868@ukr.net

ABSTRACT

The study has confirmed that traditional approaches to the provision of banking services and banking business do not satisfy the growing demand and expectations of customers, do not meet the high requirements of efficiency and profitability. In this article the FinTech-companies and FinTech-services as the newest instrument of the market the Fintech of services are defined financial that conforms to relevant requirements of the modern world. In the article investigated modern tendencies are and characteristic features of financial innovations in such classes as radical and socially oriented, banking products and services, channels of service, internal processes. The FinTech companies are systematized and classified by areas of activity and their specialization, a number of their features and potential opportunities in the field of financial services are considered. The role of FinTech-companies and FinTech-technologies in the modernization of the financial services market is disclosed, the current world trends in the development of the FinTech sphere, as well as the prospects for their use, are investigated. There are identified the challenges and threats of the banking business, which are caused by the spread of digitalization of the economy and affect the emergence of financial innovations. It is concluded that the current stage of digitalization of the economy has determined the trends and directions of development of the banking sector. Banks should concentrate all their potential on the implementation of such tasks as:

- *Identification of priority digital initiatives and the establishment of their clear coordination with the corporate strategy for the development of banks;*
- *Digital initiatives should be reflected in key performance indicators before and after the introduction of financial innovation;*
- *Definition of the dichotomy of traditional and digital corporate culture;*
- *Formation of an external partnership with FinTech companies capable of generating innovative solutions.*

Keywords: *Innovation, Financial innovation, Digitalization of the economy, Financial services sector, Banks, FinTech companies*

1. INTRODUCTION

National economies' orientation on digital trends requires the use of latest innovative technologies in the financial sector. The financial market‘s development at the present stage is associated with the latest information technologies. This is especially noticeable in the financial market, where innovations in information are introduced and used due to the capabilities and

needs of financial institutions. The basic principles of introducing financial innovation (digitalization) in financial institutions are as follows: accessibility; special purpose; growth point; medias variety; openness and cooperation; standardization; trust and security. Now the issue of information technologies' use became very relevant and important for the further economic development. Governments are trying to create the most favorable conditions for the production of innovations in various fields. This generally contributes to the construction of a new type of economy – the digital one. The current stage of economy's digitalization has determined the trends and directions of financial institutions' development, therefore they should concentrate all their potential in determining the priorities of digital initiatives and establishing their clear coordination in the corporate strategy for the development of financial institutions; mapping digital initiatives in key performance indicators.

2. FINANCIAL INNOVATIONS' DEVELOPMENT OF NON-BANK FINANCIAL INSTITUTIONS

Ensuring a sufficient level of national economies' competitiveness as a prerequisite for increasing its position in the global sphere actualizes the necessity of an in-depth approach to the problems of innovative development. As noted in the EU Digital Order, the global financial crisis of 2008 led to the loss of a significant part of the gains made over the years of economic and social progress and demonstrated the structural weaknesses of national economies. To ensure sustainable growth in the future, it is necessary to develop a complex of measures that would create prerequisites for long-term transformations caused by the development of the digital economy (Kovalenko, 2020). During the crisis, the popularity of financial intermediaries is reduced due to problems associated with the specifics of this form of activity. In the US Congress, an amendment was made several tries to provide the restoration of Glass-Steagall Act, which prohibits the unification of diverse financial structures [9]. The development of national economic systems in recent years is closely linked with leadership in research and development, the emergence of new knowledge, the development of high-tech production and the creation of mass innovative products (Table 1).

Country	Rating by the Innovative Performance Index								
	2010	2012	2013	2014	2015	2016	2017	2018	2019
Ukraine	54	61	71	63	64	56	50	43	47
Russia	59	63	62	49	48	43	45	46	46
Azerbaijan	112	111	105	101	93	85	82	82	84
China	36	36	35	29	29	25	22	17	14
USA	6	5	5	6	5	4	4	6	3
Germany	17	16	15	13	12	10	9	9	9
Poland	52	51	49	45	46	39	38	39	39
India	70	71	66	76	81	66	60	57	52
Japan	18	18	22	21	19	16	14	13	15
Switzerland	1	1	1	1	1	1	1	1	1
Luxembourg	10	11	12	9	9	12	12	15	18

Table 1: Dynamics of the rating for some countries according to the Global Innovation Index in 2010-2019
(Source: The Global Innovation Index, 2019)

Switzerland takes the leading place in the world in the Global Innovation Index, which characterizes the creation of favorable conditions for innovative performance. At the same time, a rating increase is observed in the analyzed countries.

2.1. Theoretical basis for financial innovations' development

The use of new financial products, instruments and technologies helps to increase the income of financial institutions, enhance their competitiveness in the market, improve their image and increase the level of trust on the part of non-financial corporations and households. Most scientists associate the development of para-banking institutions with the advent and implementation of financial innovations. The weakening of bank-centricity of the financial sector due to an increase in the share and role of non-banking financial institutions is an independent systemic innovation that stimulates an the level of return on financial resources increase in the national economy as a whole (Mishchenko, 2010). The most acceptable concept of "financial innovation" is the following one: "the result of a creative search for a new approach to solving problems in the financial sector, which is realized through the creation and diffusion of new financial products, services, instruments, technologies, processes and organizational forms focused on the effective management of financial resources and risks, ensuring financial stability and competitiveness in the face of variability, uncertainty and information asymmetry of the economic environment" (Pantielieieva, 2014). The spread of innovations in the financial market is associated with the concept of "diffusion of innovations", the main forms of which in non-banking financial institutions are: movement, adaptation, integration, construction of financial innovations, and, if necessary, creation of new financial institutions and innovations. The development of financial innovations is associated with transformations of the financial market itself (Fig. 1).

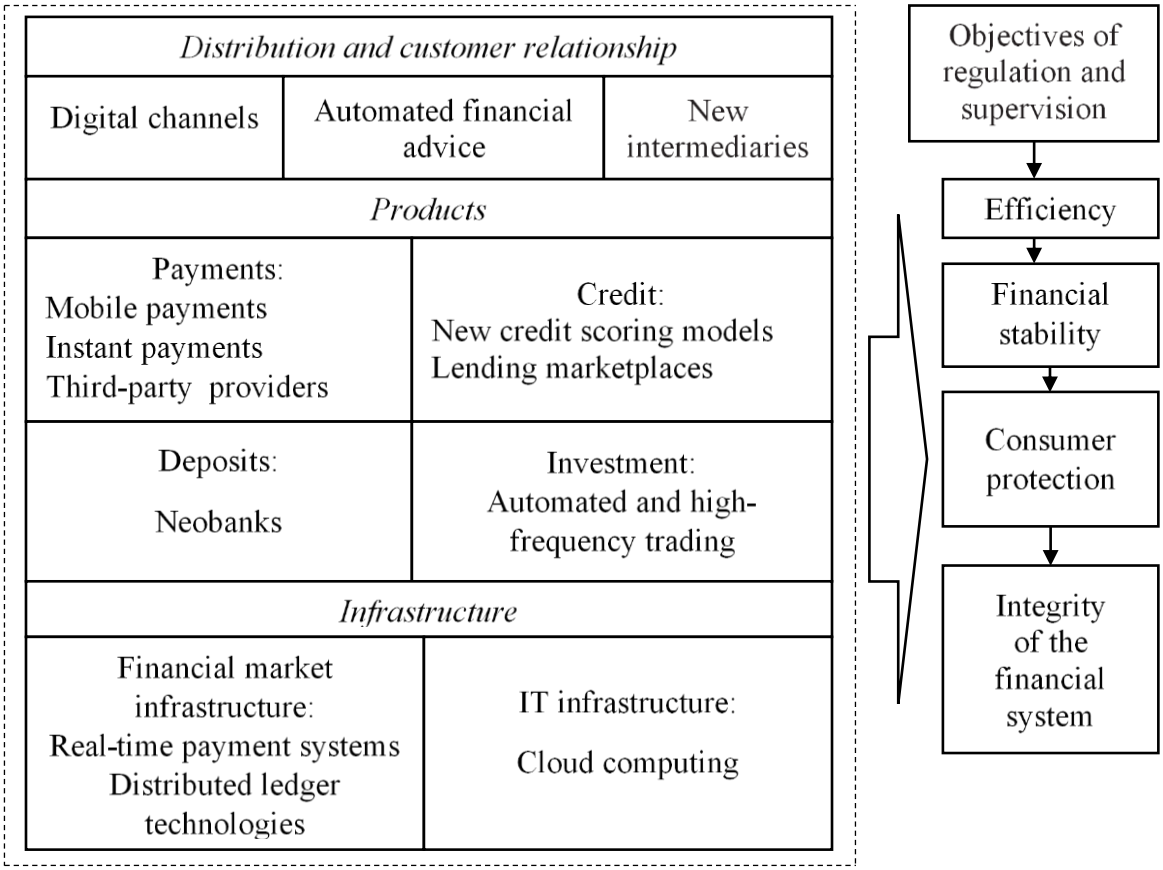

Figure 1: Transformations in the financial sector
(Source: González-Páramo, José Manuel, 2018)

The current classification of financial innovations in non-banking financial institutions is presented in Table 2.

Sign	The object of financial innovation	Instruments
Financial markets	Money market	Loans, deposits, certificates of deposit, short-term bonds
	Capital market	Stocks, bonds, investment certificates
	Derivatives markets	Derivatives
	Currency market	Foreign currency, loans and deposits, bonds
	Gold market	Gold, investment coins, “gold” deposits
	State finance	Government securities, government loans, public-private partnerships
Financial institutions	Financial institutions	New financial institutions, financial transactions, technologies, organizational and management methods
	Financial market regulators	New methods of regulation and supervision of financial institutions
	Laws, rules, customs, national characteristics	Legislative and regulatory framework for taking into account rules, customs, national characteristics
Financial instruments	Securities, loans, deposits, derivatives, structured products, hybrid instruments	Stocks, bonds, investment certificates, securities derivatives, credit notes, securitized bonds, project finance, subordinated debt, factoring
Financial operations and services	Separate operations and services that provide financial institutions	Loans, deposits, insurance and retirement benefits, underwriting, IPOs, leasing, building financing certificates, guarantees
Financial technology	Online service technologies customers	E-trading, payment cards, e-money, P2P-crediting
	Payment technologies	Payment cards, electronic money
	Risk management technologies	Derivatives, guarantees, letters of credit, securitization, scoring, risk hedging
	Laying and support technologies contracts	Financial engineering, project financing, mezzanine financing

Table 2: Modern classification of financial innovations in the financial sector (Source: compiled by the authors)

The growth in demand for financial services determines the use of new technical solutions, technologies and means of providing traditional services by non-banking financial institutions, as well as the development of new services and products that maximally meet the urgent needs of consumers, creating an innovative environment and an appropriate structure of the non-banking financial services market (Kovalenko, 2020). The basic principles of introducing financial innovations (digitalization) in non-banking financial institutions are as follows:

- Accessibility – ensure equal access for every citizen to the services, information and knowledge provided on the basis of information and communication technologies.
- Purpose – aimed at creating benefits (profits) in various aspects of everyday life.

- Growth point – mechanism (platform) of economic growth due to increased efficiency and increased productivity from the use of digital technologies.
- Medias variety – contribute to the development of the information society, the media, the "creative" environment and the "creative" market.
- Openness and cooperation – focused on international, European and regional cooperation for the global integration of the e-commerce market and services, banking and exchange activities, cooperation and interaction in regional markets.
- Standardization – standards increase competition, reduce costs and cost of production, guarantee compatibility, maintain quality, and increase country's GDP.
- Trust and security – building trust, including information security, cybersecurity, protecting the confidentiality of personal information, privacy and rights of ICT users, is a prerequisite for the simultaneous development and security of financial innovations in non-banking financial institutions.

2.2. FinTech development trends

Despite the numerous achievements of scientists in the field of FinTech development, issues of deepening the theoretical aspects of the development and implementation of new innovative financial technologies in practice, understanding of the processes of their influence on the development of the financial services market remain relevant. The questions of the essential definition of FinTech, the features of its existence in modern conditions of the active development of the information society remain unexplored. FinTech is an innovative way to use technology in the development and delivery of financial services, transforming the banking world through the use of artificial intelligence, Big Data technologies, digital payments (Desai, Kavitha, 2019). The term "FinTech" (sometimes: fintech, or Fintech) is a neologism, derived from the words "finance" and "technology" and describes the combination of modern technologies related to the Internet (for example, cloud technology, mobile Internet) with the financial services industry (for example, lending, transaction banking) (Gomber, Koch, Siering, 2017). Digitalization opens up new channels not only for financial transactions, but also for FinTech companies. New technological systems are implemented on the basis of the following principles:

- availability and speed of work (the Internet as the main place of service);
- scalability and openness (Open-API interfaces);
- distributives (technology of distributed registries);
- customer information's safety and security (validation, encryption and cryptography);
- standardization (tokenization of contract elements), use of cloud repositories for data storage, for analysis – large amounts of information and machine learning methods. The implementation of these principles allows FinTech-companies to provide services independently of banks, creating the basis for increased competition (Table 3).

Considering the transformation of financial services, it should be noted that their range has grown significantly. In particular, FinTech includes:

- payment related products – mobile payments, ecommerce, P2P transfers, alternative payment instruments; blockchain technologies are exceedingly notable, e.g. cryptocurrency;
- financing instruments that represent an alternative to banking institutions in terms of lending – crowdfunding, factoring and in terms of investment business – asset management tools – private finance management, robo-trading, risk management;
- technologies mediating the provision of financial services – datamining tools, marketplace;

- services associated with RegTech industry regulation (regulatory technologies), aimed at ensuring compliance with supervised regulatory requirements and SupTech (supervisory technologies), which contribute to the implementation of regulatory functions by regulators (Travkina, Molokanov, 2019).

<table>
<tr><th colspan="2">Technologies</th><th colspan="5">Financial services</th></tr>
<tr><th>Foundations</th><th>Innovations</th><th>Pay</th><th>Save</th><th>Borrow</th><th>Manage</th><th>Get advice</th></tr>
<tr><td rowspan="5">Artifactial intelligence, Big Data</td><td rowspan="3">Machine Learning</td><td></td><td colspan="3">Investment advice</td></tr>
<tr><td></td><td></td><td colspan="2">Credit decisions</td></tr>
<tr><td></td><td></td><td></td><td colspan="2">Fraud Detection</td></tr>
<tr><td rowspan="2">Predictive analytics</td><td colspan="5">RegTech, SupTech, InsureTech</td></tr>
<tr><td></td><td colspan="4">Asset trading</td></tr>
<tr><td rowspan="4">Distributed computing</td><td rowspan="4">Distributed ledger</td><td colspan="2">Settle payments</td><td></td><td></td><td></td></tr>
<tr><td colspan="2">B2B services</td><td></td><td></td><td></td></tr>
<tr><td colspan="4">Back-office</td><td></td></tr>
<tr><td colspan="3">Digital currencies</td><td></td><td></td></tr>
<tr><td rowspan="2">Cryptography</td><td>Smart contracts</td><td colspan="3">Automatic transactions</td><td></td><td></td></tr>
<tr><td>Biometrics</td><td colspan="5">Identity protection</td></tr>
<tr><td rowspan="4">Internet</td><td rowspan="3">APIs</td><td colspan="5">Dashboards</td></tr>
<tr><td>Digdital Wallets</td><td></td><td></td><td></td><td></td></tr>
<tr><td></td><td colspan="2">P2P, Microcredits</td><td>Factoring</td><td></td></tr>
<tr><td>Mobile access</td><td></td><td colspan="3">Crowd-funding</td><td></td></tr>
</table>

Table 3: Technologies, transforming financial services
(Source: Travkina, Molokanov, 2019)

The TOP 10 leading FinTech companies in 2019 include: “Ant Financial” (China), “Grab” (Singapore), “JD Digits” (China), “GoJek” (Indonesia), “Paytm” (India), “Du Xiaoman Financial” (China), “Compass” (United States), “Ola” (India), “Opendur” (United States), “OkNort” (United Kingdom) (KPMG, 2019).

In 2019, the following nominees were noted in the field of introducing financial innovations in the financial services market:

1. The largest financial institution for the introduction of financial innovation – 2019 was a historic year for Citi Ventures (USA), demonstrating innovative achievements in the field of venture investment and product development. Portfolio Company Citi Ventures HighRadius becomes the first unicorn startup in 2020 with volumes of $125 million.
2. Breakthrough innovations in the field of financial services, namely, artificial intelligence – Ping An Group (China), the company has developed an interview system based on artificial intelligence. This solution can be used to recruit candidates for entry-level positions, as well as for leadership positions that require complex skills.
3. An innovative solution in the field of financial services – JUMO Platform (South Africa), offered traditionally hard-to-reach customers a list of instant, affordable, high-quality borrowing options using a mobile phone. Its affordable financial services market is interface-independent and uses technology widely spread in every market.
4. The best use of advanced technologies in products and services – OneConnect Financial Technology Co., Ltd (China), FiMAX blockchain trade finance network – blockchain solutions aimed at the organic combination of various parties in trade finance.
5. Touchpoint Innovation (RBC, Canada) – DRIVE, mobile and web application, allows Canadian car owners to keep abreast of car maintenance.

6. Innovative incubator – Citi Ventures, D10X (USA) – a global program that encourages internal entrepreneurship by allowing Citi employees to create, test and launch new solutions that are exponentially better for their customers.
7. RegTech Innovation (TSYS, USA) – an instrument for assessing fraud and risk management, which includes innovative capabilities of machine learning in real time to provide advantages in the fight against fraud in transactions.
8. Innovations in marketing (Caixa Bank SA, Spain) – the approach is focused on quick and interactive tests aimed at optimizing user interaction and digital sales (Kovalenko, 2020).

3. FINTECH AND BANKING BUSINESS: ADVANTAGES AND THREATS

The FinTech industry has evolved from the initial stage to the stage at which it is able to determine user expectations. FinTech service providers do not look like startups, but more like companies with professional management, broad operational capabilities, a comprehensive set of products and an international presence. Many of these companies went through several rounds of fundraising, expanded staff, created corporate departments such as human resources, accounting and legal, and went far beyond their global regional markets. The intensity of development of FinTech is primarily caused by the growth of the Internet around the world, as well as digitalization processes, covering almost all spheres of human life, including the financial sector (Fig. 2).

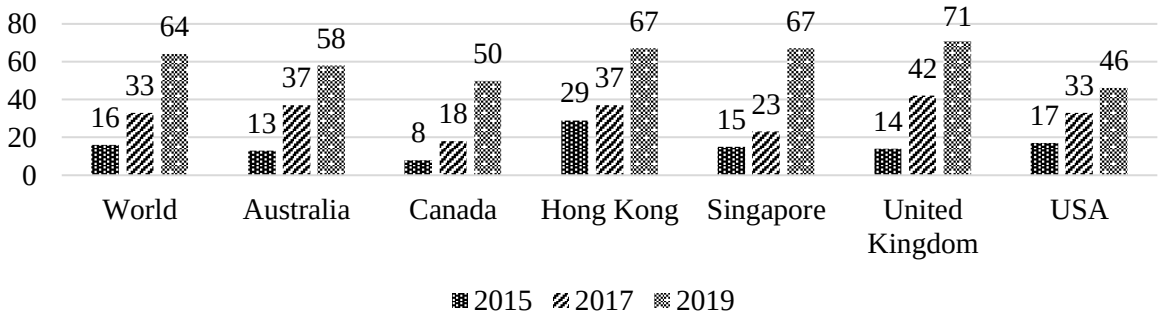

Figure 2: Penetration rate comparison FinTech in markets in 2015-2019, %
(Source: compiled by the authors, KPMG, 2019)

The modern development of FinTech raises many questions about the further development of the banking industry, in particular, in Azerbaijan and Ukraine. Thus, the scientific works of Azerbaijani economists focuses attention on the digitalization and e-transformation of the financial industry and the banking system in the framework of the network economy (Abbasov, Mamedov, 2004; Abbasov, Mamedov, 2007; Kerimov, Babayev, Kerimova, 2018), studying the digital banking model in the modern economic paradigm (Mamedov, 2019; Abbasov, Mamedov, Aliev, 2019), the imperatives of activating the innovative component of foreign economic banking (Murshudli, 2013) and the development of international banking business (Murshudli, 2018; Murshudli, 2018a) in the context of financial globalization. The team of Ukrainian authors of the scientific article (Zveryakov, Kovalenko, Sheludko, Sharah, 2019) determine that, under the conditions of further development of FinTech, the key to banking business models may be the discovery of innovation – applications that allow other companies to participate in the customer value chain. This will facilitate the adaptation of banks to market conditions in which the regulator itself stimulates competition from other market entities, for example, in the payment services market. Banks can benefit a lot from open APIs, as it is possible to integrate third-party services – within their own platform. Banks can become a source of innovation – "FinTech enablers" – and take on innovative services previously provided by other companies – links in the value chain.

Thus, a cooperation strategy, not just competition, can bring many benefits to banks. These types of system platforms for innovative one-stop-shop customer service are already in use by banks. FinTech companies can also expand their part of the market through cooperation with banks, the formation of a new approach to the client, innovative use of infrastructure (Cloud Computing) and a database (Big Data). Key players in the digital banking platform market are Appway, CREALOGIX, Temenos (Switzerland); Backbase (Netherlands); ebanklT, Finastra, ieDigital (United Kingdom); EdgeVerve, Intellect Design Arena, TCS (India); ETRONIKA (Lithuania); Fidor, SAP (Germany), Fiserv, Kony, Technisys, BNY Mellon, Oracle (USA); Halcom (Slovenia); NETinfo (Cyprus); N.F. Innova (Austria), SAB, Sopra, Worldline (France), Tagit (Singapore). With the development of technology and the emergence of new business models of the FinTech industry, completely new players, which are not directly related to the financial sector, will arise. Financial companies that have taken a wait-and-see attitude to understand which technology will win and become widespread risk losing their market position. According to PWC, more than 80% of banks in the world lose their income due to the development of the functionality of FinTech companies. However, in conditions of mass technologicalization, retro-banks or insurance companies can occupy a certain niche: their services will be in demand by conservative customers. The model of non-banks is becoming popular – these are “full-fledged” banks with a traditional set of services (opening accounts, lending, deposits, etc.), but, as a rule, without a network of physical branches; for the sale of products and the provision of services using special mobile applications, sites, accounts on social networks. The convenience of a new generation bank lies in its simple interface, powerful remote support service and understandable rates. Based on the foregoing, it is possible to summarize the opportunities and threats that FinTech developing brings to the banking business (Table 4).

Areas of influence	Treats	Opportunities
Consumer sector	confidentiality and data security; lack of continuity in banking processes; unacceptable marketing practices	high-specialized banking services' provision; transaction costs' reduce; banking processes' accelerating
Banks and the banking system	strategic risks and profitability risks; increasing the relationship between financial parties; high operational risk; third parties management risk; compliance risk includes the failure of consumer protection and data protection regulation; terrorism financing risk, money laundering risk; liquidity risk and banks' financing sources volatility risk	improvement and more effective realization of banking processes; innovative use of data for marketing and risk management purposes; potential positive impact on financial stability due to increased competition; RegTech
Effective sign: banks' implementation of innovative Big Data analysis approaches – super data arrays of unstructured information, which is a source of client analytics and forecasting, allows to establish a new standard of multichannel service and multidimensional information profile of a client on the basis of revealed behavioral patterns, prevent customer migration, within the client-oriented paradigm, ensure cross-sales growth of banking products and services, minimize credit risks, identify fraudulent transactions, increase loyalty and trust		

Table 4: Risks and advantages for banking sector arising from FinTech
(Source: compiled by the authors)

Financial technologies affect the banking mainly through changes in the market structure: they reduce barriers of entry to the market and increase its spatial coverage. The strength of this influence depends on the appearance of the same innovations, but also on the spread of these innovations in the market. The banking services market is also affected by competition from non-banking financial institutions, including FinTech companies. They have financial assets, i.e. property obligations of other organizations, and meet the same or similar needs as banks (Shmuratko, Sheludko, 2019). Thus, banks operate under conditions of enhanced competition, and in order to maintain a competitive advantage, it is necessary to offer services that compete with insurance companies, investment funds or other para-bank institutions, as well as with the rapidly growing FinTech sector. If initially Fintech was an alternative and a threat to traditional banking, now the introduction of these innovations in the banking market is so significant that banks began to conquer the situation and compete with Fintech companies. Because of their financial strength, banks acquire that entities, which is preserving and further increasing the attractiveness of financial technologies for market subjects.

4. CONCLUSION

The current stage of digitalization of the economy has determined the trends and directions of development of non-bank financial institutions, so they must concentrate its full potential, namely: defining the priorities of digital initiatives and establishing a clear consistency of them in the corporate strategy of financial institution development; displaying digital initiatives in key performance indicators as well as in assessing business value growth before and after the introduction of financial innovation. Analysis of the effectiveness of financial innovation implementation should be based on an assessment of the results obtained in terms of their impact on the level of competitiveness, financial stability, profitability and reputation of a non-bank financial institution. From the point of view of evaluating the effectiveness of financial innovation for consumers, it is necessary to analyze the conformity of the results of its use to the requirements and needs, which are acceptability of financial innovation for its quality, availability and costs. Coherence of organizational and planned measures for introduction of financial innovations should help to increase the level of innovation and performance of the non-banking financial sector. The growing demand from banks for improved customer service, the introduction of cloud platforms to provide greater scalability, and the introduction of smartphones and tablets will drive the growth of the digital banking platform market. The main factor limiting the growth of the market is the complexity of integrating digital banking platforms with legacy systems.

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ON THE POSSIBILITY OF INCREASING THE ROLE OF EDB AND CENTRAL BANKS OF EAEU COUNTRIES IN THE STIMULATION OF INTEGRATION PROCESSES IN THE UNION TERRITORY

Zohrab Ibragimov
Azerbaijan State University of Economics,
Baku, Istiqlaliyyat str., 6, AZ1001, Azerbaijan
z.ibrahimov@unec.edu.az

Elena Linkevich
Kuban State University,
Krasnodar,Stavropolsk aya str., 149, 350040, Russia
alins@list.ru

ABSTRACT

The creation of the clearing system of the Eurasian Development Bank (EDB) should be used as a means of deepening integration in the Eurasian Economic Union (EAEU). The system of mutual settlements in the currencies of the Member States will ensure increased cooperation in the monetary and financial sphere. In the future, a supranational currency should be introduced into the payment and clearing system as a means of cashless payments. The issuer of supranational currency should be the EDB, and emissions will be limited to trade between the EAEU countries. The exchange of national currencies for supranational should be carried out within the framework of the clearing system. Over time, balances will accumulate in the accounts of net exporters, while net importers will have arrears in supranational currency. When forming surpluses of trade balances in supranational currency, the central banks of member countries must provide interest-free lending to the EDB in national currencies (for exchange). One of the strategic objectives of the EDB is the financing of integration projects. Therefore, from the funds accumulated in the accounts of countries with a positive trade balance, it is rational to issue loans for business projects that stimulate integration processes in the EAEU while ensuring equalization of trade balances, that is, that increase exports or reduce imports in countries with a chronic trade deficit. Priority for obtaining loans should be given to companies of countries of net exporters, however, the possibility of lending to companies of other union states should also be provided (if funds remain unclaimed residents of countries of net exporters for a specified period). Interest rates on such loans should be significantly lower than market rates. The proposed credit system will expand the regulatory capabilities of the EDB in the field of promoting integration and reducing trade imbalances in the EAEU.

Keywords: *Integration into the EAEU, Investment projects, Lending, Settlement and clearing system*

1. INTRODUCTION

Under the currency integration refers to the process of coordination of monetary policy and the formation of a supranational mechanism of currency regulation, as well as the creation of interstate monetary and financial organizations. Being an integral component of economic integration, currency intration creates the prerequisites for increasing trade flows, expanding economic ties, promotes industrial specialization and complementarity of the economies of the participating countries, and in the long term leads to synchronization of business cycles (Frankel, Rose, 1998). The economies of scale that arise in the process of growth of trade turnover and integration of national economies, it promotes specialization and enlargement of production, which leads to lower costs (Corden, 1973).

Therefore, the stimulation of the processes of currency integration in the EAEU is currently especially important. The main body for coordination of integration relations in the Eurasian Economic Union is the Eurasian Economic Commission (ECE), which, with the help of the Eurasian Development Bank, provides intensive support for projects that deepen economic ties within the framework of the association. However, to stimulate integration processes in the EAEU, a significant expansion of the powers of existing supranational organizations is necessary, as well as the creation of new regulatory structures. Moreover, as for any regional integration association, the formation of a unified system of financial institutions as the basis for a future monetary union is of particular importance (Mussa, 1997). The Eurasian Central Bank, whose establishment is scheduled for 2025, could become the successor organization of the EDB. The Eurasian Development Bank, in addition to investing, is already carrying out settlement and clearing operations. The presence of the necessary infrastructure for cross-border payments in the national currencies of the EAEU member countries can greatly simplify the creation and introduction of the Eurasian supranational currency. Successful coordination of financial policy also involves the active participation of the central banks of the Union countries. The regulatory activities of central banks should be aimed at creating favorable conditions for settlements between the countries of the union, weakening the influence of the US dollar on trade in the EAEU, preventing the buildup of imbalances in the economies of the member countries of the Eurasian Union, as well as providing loans and attracting investment resources for the implementation of projects aimed at deepening integration within the association. To stimulate integration processes in the EAEU, it is necessary to introduce effective measures of currency regulation, determined taking into account theoretical developments, international experience, the specifics of the development of national economies and monetary and financial relations that have developed within the framework of the association.

2. ABOUT THE POSSIBILITY OF FORMING AN EFFECTIVE MUTUAL CALCULATION SYSTEM BASED ON EDB INFRASTRUCTURE

Given the specifics of the integration processes in the EAEU, we believe that in the near future within the framework of the union it is necessary to create an effective system of mutual settlements. Currently, there is no international structure coordinating the monetary, financial and investment policies of the central banks of the union members, capable of issuing a supranational unit of account, and also actively influencing the dynamics of the exchange rates of currencies of the countries of the EAEU countries. Therefore, the creation of the EAEU settlement and payment system is advisable within the framework of the Eurasian Development Bank. At the same time, at the preparatory stage for deepening monetary and financial integration in the EAEU, the coordination of the activities of the central banks of the Union countries will become especially important.

2.1. Key Features of the EDB Settlement and Payment System

The creation of the EDB settlement and payment system should be a preparatory stage for deepening currency integration in the EAEU. An effective system of mutual settlements will ensure the formation of conditions for deeper cooperation in the monetary and financial sphere. In the system of servicing cross-border transfers between countries of the union, it is necessary to switch to a supranational currency. The issuer of supranational currency should become EDB, and the volume of emissions is limited to trade within the framework of the settlement and payment system. When building a new settlement and payment system with the composition of the main elements should include:

1. A supranational unit of account, which is supposed to be used as the currency of contracts and means of payment within the framework of the EAEU settlement and payment system,

and hereinafter also as the basis for exchange rate formation.

2. National currencies of member countries, which will be exchanged for a supranational settlement unit currency when performing settlement operations.
3. National currencies of third countries necessary to create a single reserve pool, the funds of which will be used during interventions to reduce the volatility of exchange rates of EAEU members.

Settlements within the EAEU payment and settlement system should be carried out according to a scheme close to that used in the framework of international currency clearing. The transfer of the national currency to a supranational unit of account should be carried out through interaction with the official representatives of the central banks of the EAEU countries. Accordingly, for this it is necessary to ensure the functioning of a wide network of representative offices. The exchange of currencies of the participating countries for a supranational unit of account should be carried out according to a carefully developed algorithm. It is rational to use a mechanism in which counterparties who want to receive a certain amount of supranational money to fulfill obligations under international transactions will submit applications through software to specially formed organizations controlled by the central banks of the EAEU countries. Approved application forms should include the reflection of all necessary information about the activities of counterparties. This will allow authorized specialists of the central banks of the EAEU member countries to timely verify the authenticity of the data provided by economic entities. In order to reduce the risk of taking into account "fake" transactions and reduce fraudulent transactions using a supranational unit of account, control procedures must be extended to both sides of the foreign trade contract specified in the application. Organization of control will be carried out by central banks. The creation of a supranational currency to service foreign trade transactions in the EAEU will not require significant financial costs, but at the same time it will significantly reduce the volume of funds denominated in the currencies of third countries. The released resources in foreign currencies can be used for settlements with countries outside the union, as well as for building up the foreign exchange reserves necessary for interventions to stabilize the exchange rates of national currencies of EAEU member countries (Butorina, 2005). In addition, for countries of any integration association that use a collective currency while preserving national money, savings in foreign exchange reserves are possible when trading outside the common market. To do this, it is enough to create a common pool and pay off obligations to third countries through offsets (Kafka, 1969). When switching to a new settlement system, it is optimal to set national currency rates to a supranational currency in accordance with their market values in relation to the US dollar. The appropriateness of the initial introduction as a guideline of the US dollar is due, firstly, to the fact that market quotes can be used to determine their rates (currencies of the EAEU countries are freely converted into US dollars). Secondly, comparative statistics on the performance of EAEU member countries in official sources are published in US dollars. Thirdly, the US dollar will be easier to exclude from calculations within the union, replacing the supranational currency. In the future, currency quotes will change under the influence of supply and demand. On the exchange rate formation of the EAEU countries, the effect of the state of trade balances within the union is insignificant. For many years, the Russian Federation has been the only net exporter to the EAEU (Table 1).

Table following on the next page

Table 1: Trade Indicators of EAEU Member Countries for the Period from 2012 to 2019

Indicator / Years	2012	2013	2014	2015	2016	2017	2018	2019
Armenia								
Export to EAEU countries, mln. USD	n/d	n/d	n/d	256	392	571	688	761
Import from EAEU countries, mln. USD	n/d	n/d	n/d	989	1063	1314	1441	1691
Belarus								
Export to EAEU countries, mln. USD	17116	17708	16061	11008	11255	13651	13932	14549
Import from EAEU countries, mln. USD	27671	22989	22280	17208	15381	19716	22760	22172
Kazakhstan								
Export to EAEU countries, mln. USD	6229	5934	6450	5120	3918	5262	6046	6317
Import from EAEU countries, mln. USD	17659	18670	14581	11212	9863	12518	14097	14979
Kyrgyzstan								
Export to EAEU countries, mln. USD	n/d	n/d	n/d	410	447	541	641	621
Import from EAEU countries, mln. USD	n/d	n/d	n/d	2065	1626	1864	2161	2016
Russia								
Export to EAEU countries, mln. USD	44511	40878	36000	28821	26804	34685	38953	38786
Import from EAEU countries, mln. USD	22446	22713	21570	14181	14494	18401	19272	20217

(Source: Foreign and Mutual Trade in Goods of the ECE)

At the same time, the exchange rate of the Russian ruble against the currencies of other EAEU countries often decreased over the period under review (Table 2).

Table 2: Average annual exchange rates of the Armenian Dram, Belarusian Ruble, Kazakh Tenge and Kyrgyz Som to Russian Ruble for the period from 2012 to 2019.

Indicators	2012	2013	2014	2015	2016	2017	2018	2019
Average rate of the Armenian Dram to Russian Ruble	13,27	12,44	8,15	6,62	7,88	8,40	6,97	7,77
Average exchange rate of the Belarusian ruble to the Russian ruble	282,00	280,50	214,50	255,33	0,032*	0,034*	0,031*	0,034*
Average rate of the Kazakh tenge to Russian ruble	4,96	4,69	3,17	4,65	5,54	5,76	5,48	6,17
Average exchange rate of the Kyrgyz Som to the Russian Ruble	1,55	1,51	1,06	1,05	1,14	1,20	1,00	1,13

**Given the denomination of the Belarusian ruble of July 1, 2016*
(Source: Monetary Statistics)

The countries of the Eurasian Economic Union are currently not ready for such forms of currency cooperation as the fixed exchange rate regime. Nevertheless, the priority direction of the policy of the central banks of the EAEU countries should be to ensure equilibrium-stable dynamics of their currencies against the supranational currency issued by the EDB. Compliance with this condition is important for the subsequent transition to the next form of currency integration - the regime of mutual fixation of exchange rates and joint swimming in relation to the currencies of third countries. The introduction of a supranational unit of account will ensure an improvement in the terms of trade within the integration association. When conducting foreign trade transactions in the EAEU, entrepreneurs will stop using various national currencies, the use of which complicates trade relations.

2.2. The role of the mutual settlement system in expanding the EDB lending program to stimulate integration processes

Creating an effective system of mutual settlements is not enough to stimulate mutual trade and integration processes in the economies of the EAEU countries. The management of integration processes presupposes, first of all, the development and implementation of a large-scale program aimed at developing mutually complementary branches of real production, establishing and expanding trade relations, approximating the development levels of national economies of countries and the life of the population. To create the conditions for the active development of economic relations, the interpenetration of capital and the complementarity of the economies of the EAEU countries, a program is needed that was developed by the EEC in conjunction with the EDB and government regulatory agencies. One of the priority areas of EDB regulatory activity should be the provision of credit and investment funds for projects aimed at stimulating integration processes within the EAEU. Accordingly, financial resources are needed. Therefore, credit and investment policies aimed at expanding economic ties within the union, as well as at achieving a level of convergence sufficient for the transition to a higher level of integration development, will be of particular importance in regulatory activities. The accounts of countries with a positive trade balance will accumulate funds denominated in the supranational currency of the EAEU. When forming a surplus in the trade balance, expressed in supranational currency, the central banks of member countries must provide interest-free lending to the settlement and payment system in national currencies. Funds accumulated in the accounts of net exporting countries (nominated in supra-national currency) should be actively used in the lending system. Moreover, the issuance of loans using a supranational unit of account should be carried out mainly for the implementation of projects aimed at stimulating economic integration in the EAEU. The possibility of using funds accumulated in the accounts of the EAEU member countries will significantly expand the activities of the EDB in the main areas. Judging by the statistics presented in table 1, for 2019 alone, the trade surplus of the Russian Federation within the EAEU amounted to 18.5 billion dollars. USA. Additional funds temporarily held by the bank will provide an opportunity to implement a larger-scale lending program. At present, Russia is the only country whose export within the EAEU has traditionally exceeded imports. Therefore, it should be borne in mind that during trade operations, the balance of the Russian Federation will accumulate the balance, and the rest of the countries of the Union will have arrears. Therefore, for lending to projects aimed at stimulating integration and improving the level of economic development in the Eurasian Union, the national currencies of countries with a negative trade balance can be used. These funds will also accumulate in the accounts of the payment and settlement system. However, the use of such savings for lending should be approached with extreme caution, since when they are reduced to critical sizes, the EDB will be forced to resort to borrowing funds denominated in national currencies from issuing countries.

It seems optimal to invest credit in real production, whose products will be in demand in the markets of the countries of the Eurasian Union. In the medium term, such investments should ensure an increase in intra-union exports (or reduction in imports) of countries with negative trade balances. At present, Russia is the only country whose export within the EAEU has traditionally exceeded imports. Therefore, it should be borne in mind that during trade operations, the balance of the Russian Federation will accumulate the balance, and the rest of the countries of the Union will have arrears. Therefore, for lending to projects aimed at stimulating integration and improving the level of economic development in the Eurasian Union, the national currencies of countries with a negative trade balance can be used. These funds will also accumulate in the accounts of the payment and settlement system. However, the use of such savings for lending should be approached with extreme caution, since when they are reduced to critical sizes, the EDB will be forced to resort to borrowing funds denominated in national currencies from issuing countries. It seems optimal to invest credit in real production, whose products will be in demand in the markets of the countries of the Eurasian Union. In the medium term, such investments should ensure an increase in intra-union exports (or reduction in imports) of countries with negative trade balances. Granting loans to investing companies of net exporting countries should be carried out at an interest rate significantly lower than the average loan rate in the state (ideally, below the key rate). This measure should ensure the attraction of capital to projects stimulating the processes of integration and convergence in the EAEU. In addition, the possibility of lending from funds accumulated in the accounts of countries with a positive trade balance should be provided to resident companies of other union states. The right to receive such loans should be granted provided that funds in supranational currency remain unclaimed residents of the country within the specified period. At the same time, interest rates on loans provided to non-resident companies should be the same as for resident companies. Of course, it should be borne in mind that the withdrawal of capital for lending to projects from the accounts of countries with a surplus in the trade balance can lead to a significant reduction in funds in these accounts. In the event of a subsequent shortage of funds denominated in supranational currency, for settlements, an additional issue will have to be credited to the account in an amount not exceeding the balance of the trade balance (excluding funds provided for lending). Accordingly, further withdrawal of funds from this account for lending should be suspended until the total amount debited in the supranational currency is completely debited. In the future, after repayment of loans, additionally issued funds will be subject to withdrawal (sterilization). The credit system should ensure not only deeper integration in the Eurasian Union, but also a reduction in trade imbalance in the EAEU. At the same time, the targeted orientation of issued loans does not pose a threat of increasing debt obligations and requirements between the countries of the union. Moreover, our proposed methodology, which limits the volume of borrowing, will ensure the stability and effectiveness of the lending system itself. The proposed credit and investment policy will not only stimulate integration processes in the EAEU, but will also provide an opportunity for more active development of the economies of member countries, while orienting export production to the EAEU domestic market.

3. ROLE OF EDB AND CENTRAL BANKS OF EAEU COUNTRIES IN THE CURRENCY-FINANCIAL AND ECONOMIC RELATIONS REGULATION PROGRAM

Management of integration processes involves the development and implementation of a large-scale program aimed at the development of mutually complementary branches of real production, the establishment and expansion of trade relations, and the approximation of the levels of development of national economies of countries and people's lives. One of the most important tasks to be solved through the regulatory activities of the central banks of the EAEU

countries is the expansion of investments in the real economic sector, subject to the conditions for accelerating integration processes. The central banks of the countries of the Eurasian Union should independently determine the forms of providing capital to their companies, in accordance with the objectives of internal monetary policy and the state of national economies. If monetary policy is aimed at limiting the growth of the M2 monetary aggregate (or compression) in the country's economy, the supranational unit of account can be exchanged for national currencies, subject to further investment in the economies of other countries of the union. If the financial policy of the Central Bank is aimed at increasing the money supply, in supranational currency it is advisable to provide loans. A regulatory policy in the field of investment lending should ensure not only the stimulation of investment in national economies, but also the stability of the payment and settlement system. Therefore, the volume of loans in the payment and settlement system of the EDB should be determined taking into account the size of the surplus of the trade balance of the net exporter country within the EAEU, as well as the state of accounts of other member countries. It should also be borne in mind that with a significant reduction in surpluses and deficits of trade balances within the EAEU, credit resources will also significantly decrease. Accordingly, a set of additional measures is needed to ensure raising funds for investment in projects that stimulate the processes of further integration in the economies of the Union states. We believe that the lack of credit can be compensated for by an additional issue of a supranational currency unit and by attracting loans from the central banks of the EAEU member countries (both in national currency units and in the currencies of third countries). The funds raised should be used strictly for the implementation of projects that ensure the deepening of economic integration in the EAEU. At the same time, interest on loans should be minimal. The large-scale application of these measures will become expedient only when a relative balance of trade balances (within the union) of the EAEU member countries is achieved. Accordingly, in such circumstances, EU members will be ready to move to closer cooperation, corresponding to a new level of integration relations.

4. CONCLUSION

The formation of the EAEU currency union is currently gaining particular importance. The instability of the global financial system reduces confidence in the US dollar and reduces its sphere of influence. Some states are attempting to create mechanisms for conducting foreign economic transactions in other currencies. The instability of international financial relations creates the conditions for the formation of a multipolar currency order. The formation of currency zones indicates a high degree of convergence of national economies. At the same time, the influence of monetary unions on the processes of economic integration cannot be underestimated. The currency association creates favorable conditions for trade relations, the movement of capital and labor. Therefore, the formation of a monetary union within the framework of the EAEU is one of the paramount tasks that must be solved in the context of the transformation of the global financial system. The monetary and economic union will have a greater impact on the world stage than individual EAEU countries. In addition, it is easier for regional associations than individual countries to withstand crises in conditions of instability in the global economic system. As early as 1973, R. Mundell, exploring the “supply and demand shocks,” came to the conclusion that it is easier to resist them within the framework of regional associations that ensure unhindered movement of goods, means of production, labor, and financial resources between countries (Mundell, 1973). Given the lack of powers of supranational regulatory structures, the coordination of the actions of the central banks of the countries of the regional association is of particular importance. For the effective functioning of the economic union, a new procedure is required, providing for a coherent policy in the field of mutual settlements, exchange rate formation, lending, development of partnership in

monetary and financial matters. It is necessary to significantly expand the functions of the EDB, and then create a successor organization – the Eurasian Central Bank, which, together with the central banks of the member countries of the Union, will determine the main directions of the monetary, financial and investment policies pursued in the EAEU, as well as regulate the issue of a supranational unit of account . Only with the help of an integrated system of currency regulation is it possible to achieve the stability of the financial sphere of a regional economic association.

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HUMAN RESOURCES AS AN AREA FOR ENTERPRISE INNOVATION

Zuzana Rosnerova
University of Zilina, Faculty of Operation and Economics of Transport and Communications, Department of Economics, Univerzitna 1, 010 26 Zilina, Slovak Republic
zuzana.rosnerova@fpedas.uniza.sk

Boris Kollar
University of Zilina, Faculty of Operation and Economics of Transport and Communications, Department of Economics, Univerzitna 1, 010 26 Zilina, Slovak Republic
boris.kollar@fpedas.uniza.sk

ABSTRACT
Human resources in the company are a very important resource on which virtually all activities carried out in the company depend, whether it is decision-making, setting goals, choosing strategies, managing the transformation process, producing goods and services, or evaluating the results achieved. As a person is present at every stage of the business, great emphasis is placed on the personality requirements, qualifications, abilities and skills of people. However, it is important to keep in mind the constantly changing market environment, which businesses must constantly monitor and adapt to, in particular in order to maintain a stable market position and to maintain a competitive position. We work with the hypothesis that a changing business environment encourages businesses to innovate not only technologically, but also has to make changes to the workforce, that is, employees, because the business results depend to a large extent from them. In terms of the current market situation, the skills and abilities of people are not always sufficient from a business perspective. In that case, the company must approach the training of employees. The training of employees can take place in different ways, depending first and foremost on the nature of the work being carried out, and the choice of the appropriate form of training for specific workers also depends on this. The article deals with the analysis of forms that companies can apply in training their employees. Each form has its own specifics, advantages and disadvantages, so businesses have to consider which form will be applied to employees and on this basis draw up a training plan for employees. The aim of the article is to analyze possible forms of employee training and to evaluate the reasons why companies need to undertake additional training for them. We have also analyzed the situation on the European market in terms of interest in completing studies in people aged 18-24.
Keywords: *innovation of human resources, staff training, sharing knowledge*

1. INTRODUCTION

The demands of today's advancing economies on a global scale undoubtedly affect business activities. In order to survive on the market and withstand competition, companies must constantly make changes in their business - innovation. Innovations are a positive incentive to improve business performance and is a means of changing business financial performance (Durana, et al., 2020). On the other hand, the sustainability of innovations in manufacturing processes, which is also linked to the workforce also comes to the fore (Ludbrook, et al., 2019). These changes also directly affect human resources, which have an irreplaceable role for businesses. As stated in publication by Hraskova and Bartosova, in the current market environment it is important to approach changes in terms of emergence (Hraskova and Bartosova, 2014). People are the ones who fulfill the company's goals and therefore the company should not forget its employees in a changing market environment and should pay high attention to it.

With the advancing era, which are now highly digitized and technologically advanced, corporate also personnel must walk. Therefore, an enterprise should take care of its employees and provide them with various training programs so that employees can also "go with the times" and not lag behind with regard to their skills and abilities. According to Churilova, et al., the development of human potential is also influenced by the interconnection of social and economic indicators (Churilova, et al., 2019). As long as the company cares about its employees and does their utmost in terms of their professional progression, we are talking about, that the company is trying to innovate its human resources. When innovating human resources, it is also necessary to look at the management style that is preferred in the organization (Zabolotniaia, et. Al., 2019). Employee training may be either internal training or the enterprise may undertake external training for its employees. The article is devoted to the analysis of ways of education of employees, which are currently available to companies. The article also mentions cases where it is better for the company to use internal training, what are its advantages and in which cases it is justified to use external training of employees. We consider it important that businesses pay close attention to their employees, because without people, the business would not be an enterprise and would not be able to function without them. Therefore, it is very important to value human labor and to give the bearers of this productive factor truly careful care and to make people progress and educate in the work process. Because if a person likes his job and feels satisfied with his well-done job, then the quality of his performance will be of a high standard and will also bring success to the enterprise itself. In this case, the labor productivity of employees will increase. The issue of labor productivity growth is also addressed by Popoola, et al. (Popoola, et al., 2019).

2. THEORETICAL ASPECTS OF EXAMINED ISSUE

Human resources can be said to be a creative element in every single organization. It is people who design the products to be produced, decide on the services to be provided, deal with quality control, develop business strategies, implement them in practice, allocate funds and in general, all activities that are in the enterprise they are directly connected with humans (Milkovich, Bourdreau, 1991). We can say that human resources are a very important resource for companies, on which the prosperity and the whole functioning of the company on the market often depend. Human resources are not only a specific part of a business, but on the contrary, they are present in every business process and are the driving force for the interaction of the business with its surroundings (Armstrong, 2015). When innovation is generally introduced, many are challenged by technological change, which is tied to the introduction of new technology into the business process. But it is essential to work with resource innovations in today's economies. Author Derevianko looks at innovation as the most important variables in terms of sustainability in his publication (Derevianko, 2019). All human potential is created not only by the number and structure of employees in the company, but also by education, culture, interpersonal relationships, ability to work with other people, etc. If a company purposefully creates the conditions for the development of human potential and places great emphasis on it, then the company can work with the assumption that this careful building will bring it a market advantage, which can ultimately bring a competitive advantage (Kachanakova et al., 2007) .

2.1. Tasks of personnel management

To the foreground in company are getting the management of human resources. The primary task of this management should be to continually develop the working abilities of company employees, which is based on the following assumptions:

- Businesses should ensure that there is a dynamic match between the number and structure of jobs and the number and structure of employees. This means that the right person should be placed in the right job that is in line with his or her abilities.

It is very important that if the job requirements change, the employee should also be able to adapt to these requirements.

- The company should be able to make optimal use of the workforce and optimally use the work skills of its employees, ie qualifications.
- An important factor is building teams in the company and developing mutual cooperation among employees.
- Focus of the company on personal and social development of its employees, especially their working abilities and social characteristics. If the company works to develop the workforce of its employees and care to meet the material and immaterial needs of its employees, it will ensure a pleasant working climate in the workplace, as employees can thus feel self-satisfaction and progress in the workplace (Armstrong, 2015 and Koubek, 1998).

The last of these points is focused primarily on the person of the employee, which I would highlight from all points. Because if the company really takes into account the subjective feeling of employees, there is a good chance that satisfied employees will benefit the company in the form of quality work. The company should not forget that are the people who are the articles on which the resulting success of the company in the market depends and therefore the top managers or business owners should appreciate their workforce because without it the business goals and visions would not be fulfilled. But on the other hand, it should not be forgotten that the environment in which the company operates is dynamic, ie. that is constantly changing. If a company wants to be in a stable position on the market, when it will be able to compete with its rivals, the changing environment, must be realized measures for achievement to required status. These factors also affect the area of human resources management, where the company has to make certain changes in relation to its employees. We say the company is making innovations in human resources. Innovations are the activities through which an enterprise undertakes to raise the level of its personnel and develop skills of its employees. The main reasons for human resource innovation are as follows:

- the changing external environment of the enterprise,
- changing the commercial policy of competing undertakings,
- entry of a new business into the sector,
- changing customer requirements in relation to the product or service offered,
- development of information technology.

All these factors have an impact on the workforce and are a determinant of the company's success in the future. Often, these factors are a precondition for retraining and educating employees in order to be able to “go with the times” and adapt their skills and abilities to the new demands that are “pushed” from the outside to the company. In order for the company to be able to adapt to the new requirements of the market environment, it is necessary to focus on human resources through various tools to help employees take their abilities and skills to a higher level.

2.2. Education cycle – its inputs and phases

The training cycle represents the course of employee training and and it is a process that is accompanied by the following elements:

- Learning cycle inputs: they are represented by the employees themselves who have completed the training.
- The course of the cycle: this is an act of education through which employees acquire new skills and abilities for their profession. It includes all the steps that are taken to convert inputs into outputs; courses, seminars, trainings, etc.

- Outputs: are represented by an increase in the target, that is, by acquiring new work skills for employees, which is reflected in a better quality of work performance, resp. in higher labor productivity and improving the competitiveness of the company.
- Feedback: This involves conducting a review and evaluation of the benefits that have been achieved after training. At this stage it is appropriate to address the questions: What effect have we achieved? In the case of deviations from the desired state, the question should be addressed: How can learning outcomes be further improved? (Marques and Jirasek, 2004)

The educational cycle could be divided into the following parts: The first impetus is to find out the need for training, why it is necessary to carry out training for employees in the company. The next stage is to specify the training plan, which contains individual points of training. At this phase we can also talk about creating a workforce project. Regarding the optimization of the project portfolio, this issue is discussed in more detail by Kral et al. in his publication (Kral, et al., 2019). The following stage is represented by the actual course, the implementation of education (by a specific course or by the retraining). The last stage is to evaluate the results and determine the effectiveness of the exchange rate and its benefits for the company itself.

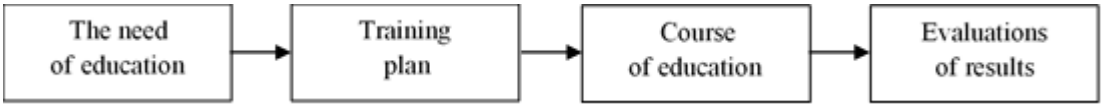

Figure 1: The phases of educational cycle
(Source: self-processing)

3. ANALYSIS OF FORMS OF INCREASING THE LEVEL OF HUMAN RESOURCES

When an enterprise finds itself in a situation that requires an increase in the level of human resources, it must have a precisely specified target, which the company wants to achieve on the market. On that basis, he knows what he needs to do in the area of human resources so that his employees are able to achieve the goals that the company has specified. The possibility of training the company employees, which will help them to increase their qualifications, comes to the forefront. There are several ways in which an enterprise can raise the level of its staff through education. Employee training is preceded by the identification of needs in which the company determines why employees are to be educated. When the need is specified, training programs are created. When choosing a training program, the company must ensure the conditions that are suitable for the training of employees, it must also define the content of training and evaluate and decide how the training of employees will take place and who will ensure its implementation. The setting of a budget for increasing the level of human resources is also an inevitable question. Aspects of financial decision-making are also discussed in the article by Valaskova et al., who attach great importance to the so-called fuzzy logic in financial decision-making (Valaskova, et al., 2019).

3.1. Internal staff training

This type of employee training takes place directly in the company and is considered the most effective form of employee training. This type of training is especially preferred in those cases where a company needs to train a large number of workers and if we were to provide external training for workers, it would undoubtedly be very costly, especially because of travel costs or accommodation. Internal training is justified especially when the working level of employees is relatively low in terms of skills and knowledge. These trainings are intended primarily for workers who work in operational and in positions with lower labor intensity. If we take into account eg. the work of the operator and control at the textile business, there would be internal training certainly on the spot.

Otherwise, if an enterprise needs to increase the performance level of employees working in managerial positions, or develop the skills of employees needed for workflow, internal training should be conducted by the enterprise itself, which needs these changes to improve the business itself. It is then advantageous if the training is carried out within teams and directly in the company, in the given corporate atmosphere with which the workers are get grow together and work in it during the performance of their work. As a specific example of internal training, we can mention the following: a company needs to train middle management and the most appropriate form of training would be the internal training of its employees. The following figure shows the basic characteristics of internal staff training.

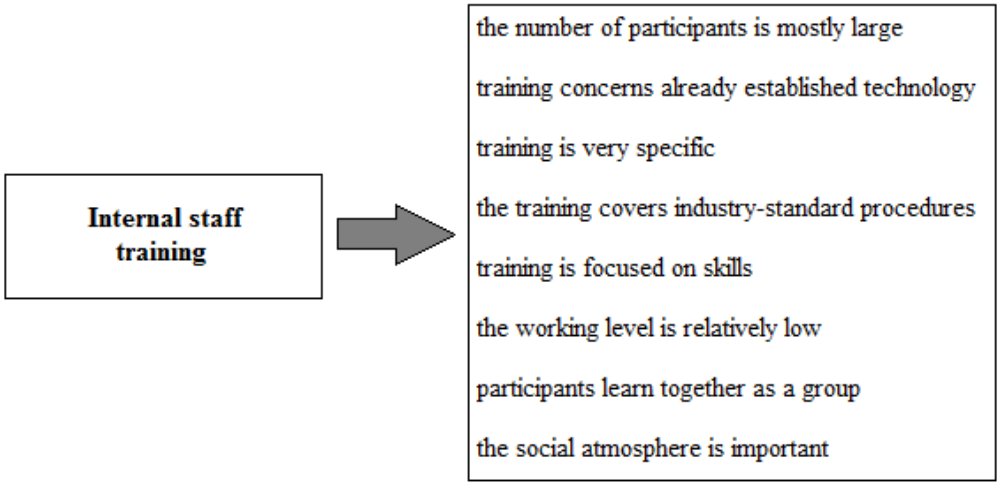

Figure 2: The basic characteristics of internal staff training
(Source: self-processing)

3.2. External staff training

This type of training is appropriate when it is required to acquire specific knowledge from specific workers, but we do not include skills. Indeed, they are used in specific cases where, without training, there is a risk of very high costs due to improper use. These trainings are also used for new technology, a high level of work. Examples include the following: oil refineries, chemical production or electricity production. When it comes to new technology with which it has experience and is understood only by a limited group of people, it is justified to provide external training. The main disadvantage of this type of education is that it is usually too costly and therefore only applies in selected cases. A good reason for this training is when the number of participants is low, the time allocated for training is short and the working level of staff is high. Such training also brings added value, because when a trained worker returns to the workplace, he or she can share his/ her knowledge with his/ her colleagues and too with the work team. The prerequisite for external training is that the employee achieves a high work performance in employment. The following figure shows the basic characteristics of external staff training.

Figure following on the next page

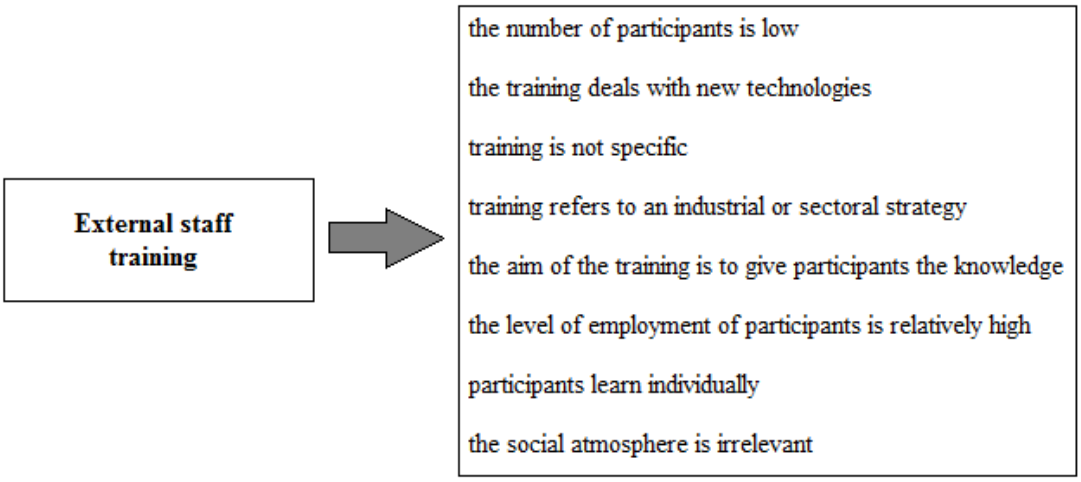

Figure 3: The basic characteristics of external staff training
(Source: self-processing)

3.3. On-the job training and off-the job training

Training is differentiated according to where it takes place. On-the-job training is conducted directly in the workplace and vice versa, off-the-job training is conducted outside the workplace. On-the-job training is realizied during that, as workers properly perform their job describtion. In this way, workers do not lose time and are directly trained during their working hours. Workers should be made aware of the content of the training as soon as the training plan has been drawn up. Participants' performance is then re-evaluated and workers are informed of the progress they are making. The most used on-the-job techniques include orientation in the workplace, instructional training, practice, internship or rotation of the worker in various positions. The form in which on-the-job training is carried out is that the worker rotates through multiple positions in his / her workplace or becomes part of work teams with specific skills. Another big advantage from the corporate point of view is that it creates value from the first day the employee is educated. Although this does not represent a high financial burden from a financial point of view, it can still carry a risk. This risk is associated with the fact that a worker who is in the process of education can cause eg. technical damage to machinery and equipment, may produce poor quality products or may interfere with the work of other employees. On the other hand, there are also several advantages, e.g. the new worker has the opportunity to test new techniques and procedures in a safe and controlled environment of the training center, and any errors are not loss to the enterprise. The most widely used off-the-job training techniques are various lectures, special studies, instructional films, television conferences and discussions, as well as role-playing or simulation and laboratory testing.

3.4. Coaching

This method of employee training presupposes long-term planned stimulation and direction of the trained employee to the required performance through existing work opportunities, resp. modified. This means that the whole process is based on an agreement between the employee and the coach in the work environment and proceeds according to the pre-agreed tasks. The employee is evaluated at regular intervals when the employee submits his activity report to his supervisor. This report serves as a basis for discussing employee achievements and planning future activities for the future, and in this way employee training can continue over time (Whitmore J., 2009 and McManus P., 2006). Coaching brings with it many benefits that relate both to the person being coached and, on the other site there are benefits for the business as a result of coaching. The advantages of this type of education are shown in the following table.

Benefits of coaching	
A) FOR THE COMPANY	B) FOR THE EMPLOYEE
Improved performance and productivity Staff development Improved learning Improved relationships Improved quality of life for individuals More time for the manager More creative ideas Better use of people, skills, and resources Faster and more effective emergency response Greater flexibility and adaptability to change More motivated staff Culture change A life skill	Maximizing their individual strengths Overcoming personal challenges/obstacles Achieving new skills and competencies to become more effective Preparing for new work roles or responsibilities Improvement in managing themselves (e.g. better time management) Clarifying and working toward goals Increasing their job satisfaction and motivation

Table 1: The benefits of employee coaching for the company and for the employee (Source: self-processing)

3.5. Outdoor training

This type of education takes the form of outdoor training through various activities, tasks or games. This kind of training helps greatly in team building, strategy development, crisis management or personal development. Outdoor training is not a traditional form of education and, of course, differs from internal training in the workplace. The main feature of these trainings is that managers participate directly with their employees in trainings. We see a great advantage in breaking down communication barriers and building friendly relationships between employees and managers. These trainings have been developed to build a team spirit in the workplace. In this type of training there are physical activities such as camping, climbing, cycling, trekking or strategy games, and it is obvious that there is a strengthening of mutual working relationships. Outdoor trainings often result in the ability to solve problems, develop teamwork, increase employee self-confidence, risk-taking and communication development, and there is a large increase in mutual trust between business managers and employees. We consider a financial burden a disadvantage of outdoor training, because outdoor training is undoubtedly one of the expensive forms of education (Mbaskool).

3.6. Sharing knowledge

Knowledge is one of the basic pillars of the company's competitive advantage. The bearers of cognitions and knowledge are human resources that create, archive and use their knowledge to carry out their work tasks. However, it is not possible to identify individual knowledge with the knowledge of an organization, also an enterprise. Unfortunately, as pointed out by Gee-Woo et al., in practice, knowledge sharing within an enterprise is, unfortunately, the exception rather than the normal rule. On the contrary, individual collection of knowledge and too much caution and even distrust of knowledge from other people are de facto natural human tendencies (Gee-Woo et al., 2005). The actual sharing of information in practice consist in, that an individual is willing to share with his colleagues his / her knowledge, which he / she has generated. Sharing of information can be realized by direct form, ie by mutual communication between workers, or indirect form, which is realized by archiving knowledge. As we said earlier, knowledge bearers are individuals, and in order to be willing to share their knowledge in a business, they need to have favorable conditions created by the business to motivate workers to share knowledge with colleagues. The attitude of individuals to information sharing is determined mainly by two factors. The first factor is reciprocity; that a worker who shares information with others believes that he, too, will draw information from other colleagues, so this is the “I for you, you for me” principle.

The second factor is the personal standard, the standard of knowledge sharing. An organizational environment that promotes knowledge sharing with respect to innovativeness or fairness has a decisive impact on shaping personal information sharing standards. If information sharing is to take place, the company needs to create a favorable atmosphere that will encourage employees to trust the company itself. Knowledge sharing is not possible unless the worker has confidence in the company or vice versa, if the company does not trust the worker.

3.7. A prognosis for employee education based on the evolution of the future workforce's interest in studying

Statistics from European Union describe, than only one out of ten young people in the EU have completed at most a lower secondary education and are not in further education and training. Information about early leavers from education and training (as % of the population in age 18 - 24) in year 2018, shows next graph (Eurostat). In 2013 the average situation in the EU was 11.9% and in 2018 this indicator was 10.6%. From the above it is clear that in 2018 the situation improved slightly compared to 2013. The worst situation was recorded in 2018 in the countries of Romania, Malta and Spain, where up to 15% of people aged 18-24 years, decided prematurely to leave education. I consider this to be a shortcoming for the European labor market, because this indicates a problem for companies in the future because of the need for staff retraining. Many times we meet whit it, that employees do their work because they have to do it and generally do not enjoy their work. Firstly, because people lose interest in studying and do not think about what will happen in the future and whether they will not have to undergo training because for the job they do not have education or training or sufficient qualification. Certainly, it would be appropriate if this indicator was minimized. Of course, the best result would be 0%, but the probability of such a result is unrealistic.We would also look at the development of this indicator in the future and find out to what extent the interest in completing the study has changed in people who represent a "new" workforce for the European market. The authors Belas and Sopkova dealt with the issue of business education in terms of the size of the company and the time of its operation on the market (Belas and Sopkova, 2016).

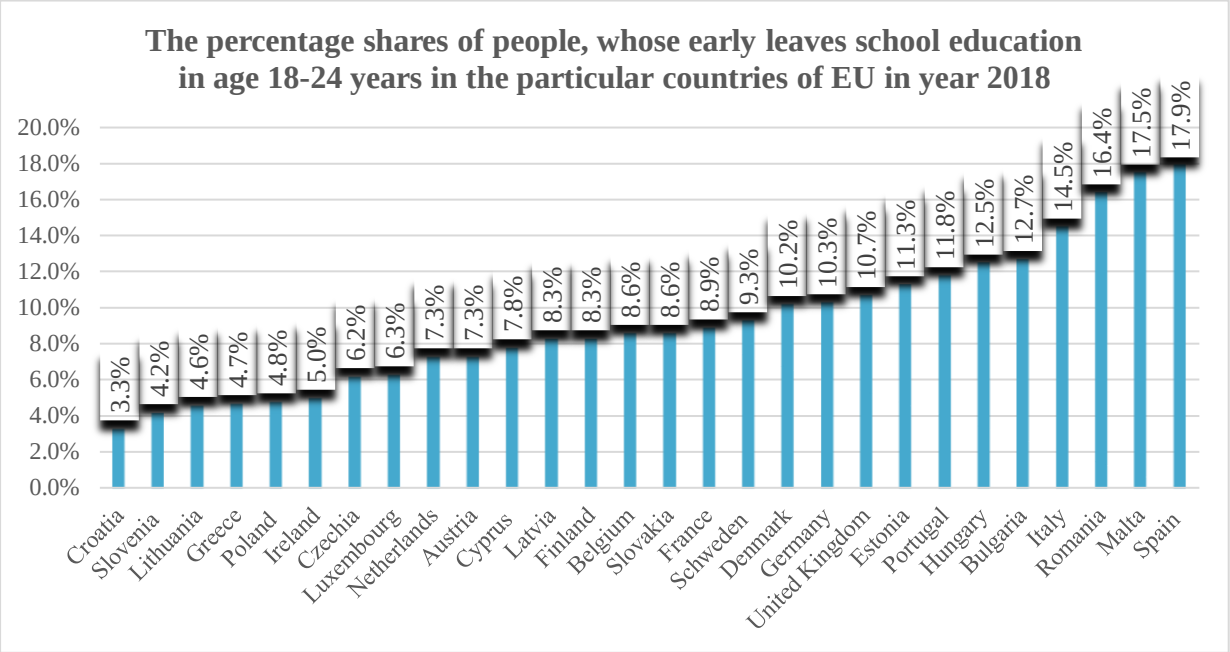

Figure 4: The percentage shares of people, whose early leaves school education in age 18-24 years in the particular countries of EU in year 2018
(Source: self-processing, according to Eurostat)

4. DISCUSSION AND CONCLUSION

The concept of education is increasingly appearing in the conditions of the business environment and their personnel departments. The need for education has become a very important element in terms of building the skills of people working in companies, especially in positions of executives, ie managers, who through training building people's working skills. This is related to the structural changes that are taking place in the economy and the related redistribution of the workforce. At present, companies cannot assume that their skills requirements will be fully satisfied, so many businesses emphasize the skills training of their employees as soon as they start working. In general, if a company wants to be competitive, it needs a real human development. Requirements for the level of knowledge are constantly changing and the worker must constantly deepen his knowledge. If education is in line with business goals, it is a unique use of the human factor to increase business competitiveness. In practice, we often encounter reasons why workers cannot be educated. The most common arguments are lack of time, and financial factor, where for companies may seem to educate workers too expensive. The financial point of view, training of employees should not be seen as a burden on businesses. On the contrary, in this case, it is more an investment that when the company invested in employee training, it returns for the company in the form of increased competitiveness or better fulfillment of business goals, improving the quality of work and the like. By the training of employees incoming to develop new professional and social skills. Professional skills include knowledge of work and relate to the specific job description of the employee. In the case of social skills, this is a way of conducting and acting towards others. We could include here the way of communication, leadership style or personnel management and so on. Training and employee development are two closely related concepts. Training usually includes clearly defined business objectives, employee development is focused on less specific, general areas. Training is planned in the short term, while development is planned in the long term. In individual companies, the relationship between the two activities may be different, they may be joint or separate. Against this background, we can see that employee training is an innovation that is undoubtedly necessary for the company's future growth and thus ensuring the company's survival in the target market, despite the dynamically evolving conditions in the current economic environment. This means that the company is able to react flexibly and to deal with changed conditions and thus resist pressure from other competitors in the particular market.

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THE INNOVATIONS ROLE IN FACILITATING REGIONAL DEVELOPMENT

Olga Nosova
V.N. Karazin Kharkiv National University
Myronosytska St, 61002 Kharkiv, Ukraine
olgano59@gmail.com

Tetiana Nosova
V.N. Karazin Kharkiv National University, Karazin Business School
Myronosytska St, 61002 Kharkiv, Ukraine
tasya.n@gmail.com

Natiq Qurbanov
Azerbaijan State University of Economics (UNEC)
Baku, Istiqlaliyyat str.6, AZ1001, Azerbaijan
natik1952@hotmail.com

Damirov Yashar
Azerbaijan State University of Economics (UNEC)
Baku, Istiqlaliyyat str.6, AZ1001, Azerbaijan
yashardph@gmail.com

ABSTRACT
The paper analyses the impact of innovations on facilitating regional development in Ukraine. The main goal is estimation of the innovations' role in regional economy. Applying Schumpeter approach to dynamic economic growth, we consider the special policy for regional equalizations based on decreasing asymmetric innovative development in regions. Substantiated the development and implementation policy taking into account the innovative component for each individual regions. The adoption and application of innovation policy measures proposed for inequalities smoothing and competitiveness increase in Ukraine's regions. The improvement and overcoming regional disproportions through equalization gross regional product per capita in regions proposed. The strategy of coordination activities, financing and attracting investment in regions analyzed. The hierarchial cluster analysis proposed for assessment regional innovative inequalities. The special regional policy based on the hierarchial cluster estimation's results suggested for decreasing imbalances, and stimulating innovations' inflow in regions.
Keywords: *Development, Innovations, Innovative component, Innovation policy*

1. INTRODUCTION

The aim of paper is devoted to the analysis of the innovations' role in facilitating regional development. The main goal is the definition of the causes of regional disparities', and estimation of the role of innovative policy for regional disbalances and inequalities smoothing. Innovation policy in regions vary in countries. Some scientists define its crucial role of innovation for regional strategy. Another group of scientists emphasizes the role of innovations for economic growth based on regional territorial advantages. Schumpeter approach to the technological accumulation and creative destruction is the basic in the theory of dynamic economic growth explaining the nature of innovations. The concepts of technological accumulation and creative destruction are fundamental in theory J. Schumpeter. The author distinguishes investments in Research and Development (R&D) from other investments in two

kinds of capital, including physical and human capital. Metcalfe and Ramlogan (2006) consider innovation as a process of generation the growth of knowledge connecting investment, demand, and structural transformation. Technical progress and the competitive process carried out inseparably, moreover adaptive evolutionary process coordinated by diverse market structures, changing patterns of economic behavior. Kingston (2017) examines capitalism using the concept of property rights. He explains the historical development of economic cycles of capitalism through the changes of property's forms, especially intellectual property rights. The author emphasizes the creative innovations have been captured by group of people who wanted mostly to benefit from them. The reduction of the wealth generalization and inequality growth contradict the modern capitalist system progress. Antonelli (2017) applies the Schumpeterian creative response by implementing the tools of complexity economics. The consequent introduction of innovations may knock firms further out of equilibrium and cause positive changes in the system's properties that feed the introduction of further innovations and vice versa. The path dependent loop of interactions between the system properties and individual actions of firms ascertain relationships among knowledge, innovation, technological advancement and economic growth. Almudi & Fatas-Villafranco (2019) apply the Neo-Schumpeterian concept of sectoral systems of innovation to refiect on the uneven sectoral patterns, amd analyse the interection between technological factors, income growth, and distinct income elasticities of sectoral demand. They highlight the multisectoral modeling results that economic growth depends on sectoral innovation, and demand –side fundamentals. Aghion et al. (2001) address the product market competition and imitation good and prove a positive effect on growth, The model points to complementary roles for competition (antitrust) policy and patent policy.The application Schumpeterian model for human capital accumulation determines a country's capacity to absorb knowledge and provide its diffusion. After increasing a country's absorption capacity, it starts to be not imitator, but an innovator who create new knowledge itself. In the literature review, we aanalyse the regional innovative approaches, and consider the innovation system's and innovation policy's forms and methods. Entrepreneurs' innovations studied as a factor in the long-term company's growth. The destruction of old company values is the basis for its further modernization. Innovative activity determination based on economic assessment, continuous technological and product rivalry of old with new ones that use to replace them. In the other part, we estimate cluster model of the dependence of regional classification on the macroeconomic parameters and innovation indicators in regions in Ukraine. We apply hierarchical cluster analysis for 24 Ukrainian regions in 2017, and emphasize the factors influencing the existing disproportions between the economic sectors, and asymmetric innovative development. The improvement and overcoming regional disproportions through equalization gross regional product per capita in regions proposed. We define the basic problems of regional development are the lack of capital investments, old capital assets, and high share of unprofitable enterprises, enterprise's indebtedness, low innovations' level, and insufficient infrastructure level hamper economic upswing. The assessment of Ukrainian competitiveness shows the markets concentration at national level and inadequate finance and human capital distribution in regions. The competition demonstrates weakness of some regions. Concentration has a negative and highly significant effect on labor productivity growth. The financial shortage causes the reduction of the quantity of enterprises applied the innovations. Applying Schumpeter approach to dynamic economic growth, we propose suggestions for regional equalizations gross regional capital per capita.

2. LITERATURE REVIEW

Most scientists identify the company's innovative activities as the main component of economic growth. Using innovation allows you to adapt to the constant changes in the external

environment. Chaminade et al (2018, p.79) examine the innovation system related to economic, social and environmental sustainable development. Authors consider innovative policy in regions based on theoretical study of national innovation systems in globalization, the legal environment, and regional policies supporting innovations. Edler &Fagerberg, J. (2017) focus their research on the definition innovation policy, theoretical rationales. They consider the innovation policy mechanism, and introduce the model that designed to identify, analyze and deepen our understanding of innovation policy, and its application mechanism. Edler et al (2016) attempt to understand the logic and effects of innovations. The scientists present meta-evaluations for 16 key forms of innovation policy instruments and their complex analysis. They underline the role of policymakers who are making the tough decisions about the future of competitiveness and innovations. Granstrand (2018) reviews the connections between R&D, various patents, different kinds of innovations, entrepreneurship and effects on growth rate. The author concludes proposals for spreading entrepreneurship, innovativeness as a generator for industrial growth in Europe. Schomberg and Hankins (2018) develop concept of reasonable innovation, and explore the prospects for its further implementation in emerging markets. The authors consider the impacts of investigation through reconnecting science and innovations using the same standards opposite other existed public policies. They argue that responsible innovation needs to be sensitive to local, regional and specific cultural contexts. The discussion on shared values may well lead to a variety of different requirements for good innovations (Schomberg & Hankins, 2018, p. 6). Fagerberg (2018, p. 16) ascertains that various national factors influenced firms' abilities to benefit from own technological capabilities. National and firm level capabilities interact in the process of development. Edler &Fagerberg, J. (2017) focus their research on the definition innovative policy, and theoretical rationales. They consider the innovative policy mechanism, how it designed, implemented, and governed. Eriksson et al (2010) apply Strategic Niche Management (SNM) approach that designed to facilitate the introduction and diffusion of new technologies through setting up protected experimental settings (niches) in which actors learn about the design, user needs, cultural and political acceptability, and offers suggestions for regional policy. Polverari (2018, p.10) points out the current paradigm, open innovation, that considers innovation as an open process that takes place in 'innovation ecosystems', 'in which companies, public research institutions, financial institutions and government bodies interact through the exchange of skills, information and ideas. The author proposes to exploit synergies between innovations in general and in regions. First, by pulling financial resources from both kinds of policies to fund the same programs, schemes or projects, and second, strategic alignment. Pyka et al (2019) introduce an agent-based model that provides a virtual simulation environment for ex-ante evaluation of policy intervention in regional innovation systems. Their findings show that regional learning and knowledge exchange processes tend to be accompanied by pronounced non-linarites. Different policy interventions may affect each other in complex and often-unexpected ways has far-reaching implications for policymakers. Bogliacino et al. (2016) proves that without complementary investments, it will not be possible fully benefit from the advantages of information communication technologies (ICT) capital for productivity growth. Understanding national innovation system, we define regional policy. Implementation mechanism supports the idea of interdependence and direct effects of innovations into economic sectors, improved synergies in regions, and internationalization of firms increasing cooperation at the international markets (Nosova, 2017, p. 117). The utilization of the existing approaches` results suggests its usage for proposing innovative economic policy for supporting innovations as a component of regional policy.

2.1. The regional innovation policy approaches

The Ukraine's policy has a priority tasks reflecting solution uneven development of regions, restructuring of rural areas, and nature restoration. Adoption special mechanism for innovative programs implementation is critical that increase productivity and Gross Regional Product (GRP) per capita in regions. Capello et al (2011, p. 305) discover regional policy as competition among global players, combining richest, central regions and poor periphery ones in countries. The prospects for priorities and directions of innovative development requires increase positions in the international division of labor in a specific region, and focuses on investment in R&D, learning process and innovations. Innovation policies is a complex of measures directed to promote technology development, creating attractive business climate for economic progress. Gonsalez-Lopez & Asheim (2020) provide empirical results of interdependence regions and innovation policies. They propose the strategies and define the role of European Union institutions responsible for promotion diffusion innovation. The Ministry of Regional Development, Construction, Housing and Communal Services in Ukraine fulfills functions of coordination and regulation, scientific and methodological support of activities in regions. The adoption of the strategy of development of the innovative activity sphere for 2030 in Ukraine defines the aim, structural elements of national innovation ecosystem. The strategy's implementation will ensure the interaction between all elements, and accelerate economic growth. The regulatory acts adoption create legal base for coordination and cooperation regional integration process. Innovative strategy aims to concentrate business resources on new breakthrough technologies providing competitiveness increase, innovative updating fixed capital, R&D expenditures increase, and state partnership. In order to facilitate Ukraine's development it should be noted that defining and taking advantages of the specific region, determining basic spheres of investment, and inclusion innovation components in regional policy are basic policy directions for ensuring, and accelerating economic growth. The new law 'On innovation activity of technological parks'; has to determine the forms of public-private partnership (PPP) in the innovation sphere (clusters, technological platforms, start-ups). The deep literature analysis confirms our understanding of interdependence innovation, strategy, political and innovation institutions, responsible for forecasting economic, scientific, technical and informational functions. The study of various scientific works gives an empirical evidence that spreading innovations enhance advancement technologies and economic growth. Polverari (2018, p. 12) presents models of innovation process which focus on linear models, interactive models, network models, open innovations models. The globalization and advancements in the informational technologies result in spreading innovation process. Different actors in firms, companies, public research institutions, financial institutions and government bodies interact, exploit, and transmit new ideas and knowledge from local, state, and national to world level. Barjak (2001) uses cluster analysis to construct regional models for East Germany and Poland using economic indicators. Author receives empirical results that the most capable regions are those with or near the largest agglomerations in both countries. Besides high income, low unemployment and population gains from migration, these regions have comparatively large stocks of qualified labor and participate in technical progress. The author suggests two regional types: rural regions peripheral to the agglomerations and old industrialized regions. The innovative policy in regions based on theoretical study of national innovation systems, and regional policies supports the policy makers who are making the tough decisions about the future of competitiveness and innovations, and empirical works considering the linkages between R&D, patents, innovations, entrepreneurship and growth. Sukhanova (2015, p.98) proposes the complex innovative model. She includes territorial innovative clusters in it. Such model reflects the connection socio-economic structures of regions with global economy. The stages of knowledge generation to its transfer, diffusion and commercialization demonstrates new knowledge creation.

The interaction between elements of innovative system stimulate the circulation information and accelerate new knowledge creation. The innovative development in Ukrainian regions continues to be constrained by high innovative costs, lack of state financing, absence of business partners, low demand for innovative products, absence of information for technologies and qualified personal. Assessment of the integral index for small business development in the region demonstrated that in 2010 seven regions in Ukraine had the lowest values comparing the national average level. In 2017, only six regions had an index below average, and only three regions had the value higher the national level 10 %. It confirms the asymmetry deepening, differentiated impact of small business at the regional level. In 2017, 14% of enterprises in total economy were located in the capital city Kiev, employing 24% of the workforce. Also, 11% of all individual enterprises were in Kiev, and 25% of all legal entities. The latter employed 30% of the workforce and generated 40% of the turnover in the total economy of Ukraine (OECD, 2018). The major part of number of enterprises by legal form inludes and concentrates in Kharkiv, Dnipropetrovsk and Odesa regions. The small business indicators' evaluation at the regional level shows widening inbalances in economic development that strengthens the predominant effect, and demonstrates differential character for regions.

3. MODEL SPECIFICATION

We apply general scientific and special methods of cognition: structural-logical method – to build the general structure of the research. Content analysis and bibliographic search applied to study of innovation policy in regions based on theoretical study of national innovation systems and regional policies supporting innovations, the role of policy makers who are making the tough decisions about the future of competitiveness and innovations, and empirical works considering the linkages between R&D, innovations, entrepreneurship and growth. Comparative analysis used to study and compare forms and methods of innovation development in Ukraine. We use hierarchical cluster analysis for comparing the regions of Ukraine in terms of innovative development. Economic and statistical methods use to assess the level of innovative development in Ukraine’s regions. Graphic method used to visualize estimation calculation results. The application of graph analysis of data of GDP and index of economic freedom for Ukraine 1991-2017 illustrates economic activity decrease in unpredictable world conjuncture, and regional economic and social disparities increase. Scientific generalization justifies the results of investigation, make conclusions, and propose policy recommendations. We analyze the results of hierarchical cluster analysis for Ukrainian regions for 2017. The data of State Statistics Service of Ukraine used for assessment Gross Regional Product from variables defining regional development for 24 Ukrainian regions (Regions of Ukraine, 2019). Hierarchical cluster analysis identifies and organizes data object structures into clusters. It identifies homogenous groups of cases of unknown groups of estimation. Considering the regional innovation development, we apply hierarchical clustering analysis of Gross Regional Product (GRP) from the employment, industrial production index, fixed capital investment index, the number of organizations, conducting scientific research, total value of innovation costs per one thousand employed workers and foreign direct investment (FDI). The hierarchical clustering analysis uses the SPSS Statistics program. The application Ward's method calculates the simple Euclidean distances from each case in a cluster to the mean of all variables. We assume that GRP is associated with total industrial production in Ukraine’s regions. The employment defines labor in the region. Industrial production index, fixed capital, investment index determine regional capital. The number of organizations, conducting scientific research, total value of innovate costs per one thousand employed workers and FDI in region denote total factor productivity.

3.1. Research Hypothesis

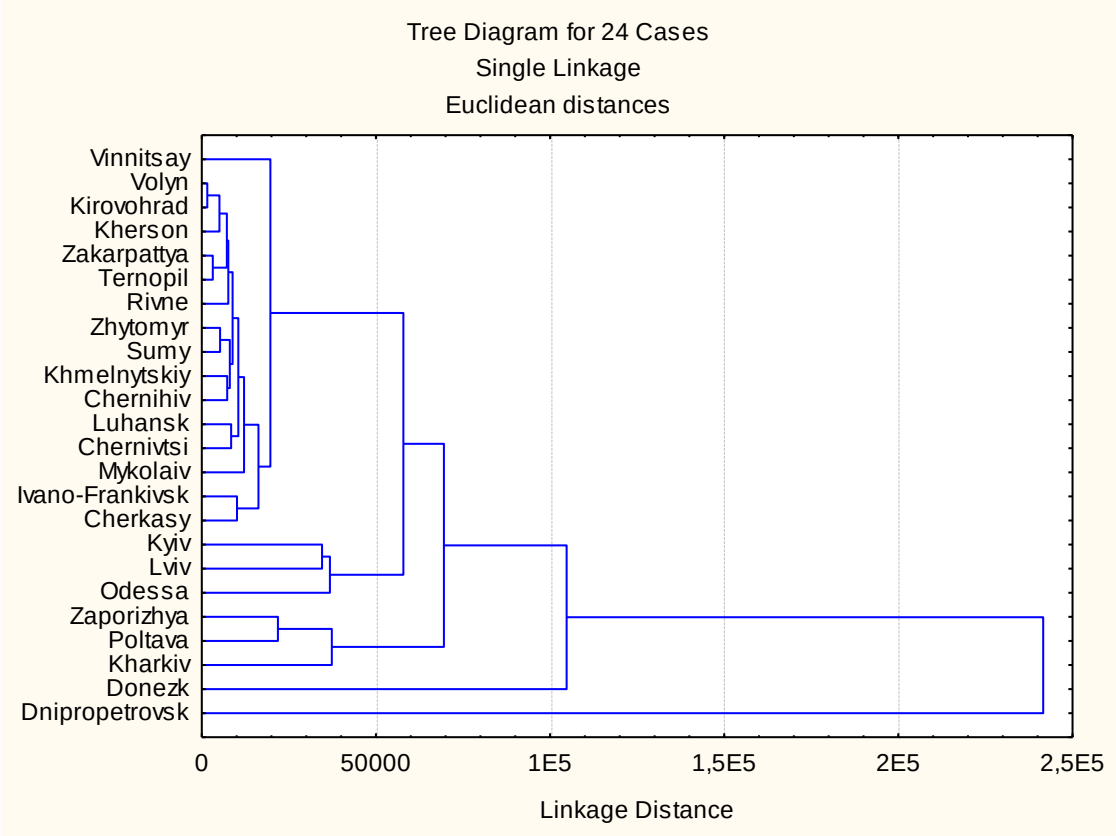
We test the following hypothesis: the dependence of regional cluster classification on the macroeconomic parameters and innovation indicators in regions in Ukraine. We assess calculated distances between the most developed regions and the least undeveloped regions in hierarchical clustering. We estimate the single linkage criteria, showing the distance between the closest neighboring points. The estimation results outline that the Kyiv distinguished from other regions. Capital Kyiv considered outlier from other Ukrainian regions for all estimated periods with the biggest share of GRP. The strong specialization by regions producing specific kinds of heavy industry products caused division between highly industrialized developed regions with high urbanization and 'less developed' rural regions with agrarian orientation in the Ukraine. The centralized industrial organization and the inefficient regional structure formation resulted in the disproportionate regional division in the former Soviet Union. Growth in incomes during the decade before the crisis was largely driven by favorable prices for commodity exports (particularly steel and chemicals) rather than much-needed improvements in productivity and competitiveness (OECD, 2013). Consistent delays in implementing structural reforms and recurrent political instability left the economy stuck in transition and overly exposed to external shocks. The external position also strengthened, with the current account deficit falling from 9.2% of GDP in 2013 to 3.6% in 2016. Gross reserves remain low, but have doubled to USD 15 billion. Low demand and liquidity problems remained the major impediments for business development for Ukrainian industrial enterprises in 2013. Other important barriers to development were excessive taxation (which includes tax rates and tax administration) and unfavorable regulatory climate. Enterprise managers assessed investment climate in 2013 as unfavorable. The share of the enterprises that considered the year 2013 to be "unfavorable for the purchase of equipment", the indicator that measures investment environment, increased by 13.9 % to 71% in 2013. According to the results of the survey conducted in the 1st quarter of 2014, among major obstacles that hampered investment activity of companies in 2013 were insufficient income value (45.5%), unstable political situation (34%), and high cost of capital (28.7%) ((Innovation support measures currently in place in Ukraine, 2017).

3.2. Modeling hierarchical cluster analysis results

The Gross Regional Product estimation interdependence is from variables of the average monthly salary (UAH), consumer price index (%), the volume of industrial production sales (goods and services) (mln UAH), fixed capital investment in real prices (bln USD), total area of residential buildings acceted in operation (thousand square meters), exports goods (mln USD), imports goods (mln USD) strengthens the dependence of regional cluster classification on the macroeconomic factors' combination in Ukrainian regions. The present structure does not consider the geographical location, the economic endowment, and regional specificity. The graphical analysis of the line of the significant coefficients Ward's method proves the basic three clusters determination. The three clusters differ in particular in regarding to the levels of industrial development and scientific potential. It should be noted the increase of heterogeneity with every step of econometric analysis. A hierarchical clustering model of 24 regions graphically represented at the dendrogram of regional cluster c classification on the input factors of production combination in regions for 2017. Classification on the macroeconomic factors' combination in regions demonstrates that each region has various distributions. Hierarchical cluster analysis usage for 24 Ukrainian regions in 2017 demonstrates the existing significant differences in the level of economic, scientific potentials, and confirms the low convergence among four clusters. The sufficient economic and technical endowment inheritance creates opportunities to exploit potentials and to improve position in cluster 2 for the rest regions.

The estimation results demonstrate the predominance of Dnipropetrovsk, Donezk, Kharkiv, Poltava and Zaporizhya regions in analysis comparing to other regions, and indicate their significant role in regional development. The first cluster shows relatively higher than average level of economic estimation in comparison with two others (See Figure 1). It distinguishes via the biggest industrial production concentration, the attraction of the significant financial flows of capital, the highest innovation capacity within regions, and more than average per capita income in comparison to Ukraine. The real GDP index, the industrial production index decreases comparing to 2016. Inflation (consumer price index), public debt, unemployment rate increases in 2017. The net inflow of foreign capital made up 2,3 billion USD in Ukraine.

Figure 1: Dendrogram of regional cluster classification on the macroeconomic indicators in regions

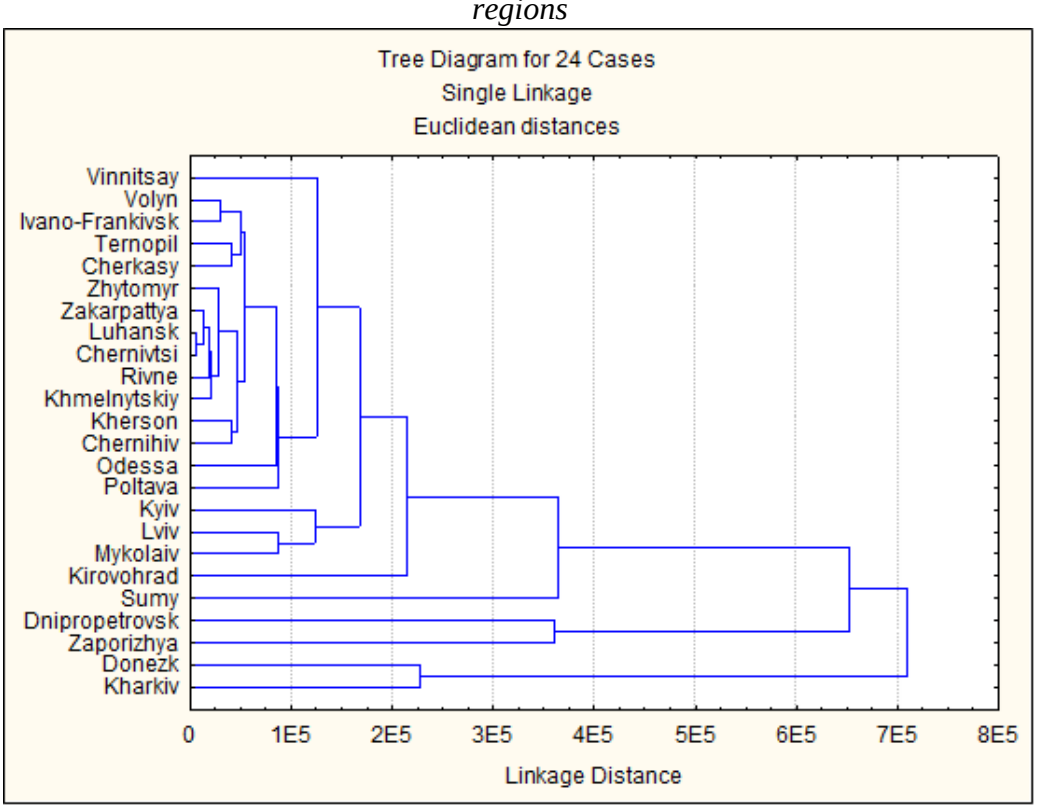


Source: Authors' estimations

The first cluster has the biggest industrial production concentration, more than average per capita income, and attracts the significant financial flows of capital in Ukraine. Kharkiv, Dnepropetrovsk and Donetsk regions show the best performing capital, labor, R&D capacities in the country. The cluster 2 includes the main regions Kyiv, Lviv, Odesa, Luhansk, Ivano-Frankivsk, Cherkasy, Chernivtsi and Mykolaiv. The third and the fouth clusters involves the rest regions, some of which are specialized on agrarian production. Cluster mobility shows the low spread in economic development between regions. The regional content of the second cluster and the third and the fouth clusters indicate unstable and changeable for all estimation periods for 2017. The industrial, scientific potentials of these regions are significantly low in comparison to the first cluster. The second cluster and the third and the fouth cluster include some regions, which are specialized in agrarian production, and has low industrial capacities. The cluster mobility shows the low spread in economic development between regions. For more in-depth analysis regional differences we continue our estimation applying the data for

innovation development. We test the following hypothesis: the dependence of regional cluster classification on the innovation parametors in regions in Ukraine. We assess dependence GRP from the number of employment engaged in R&D (quantity), the number of enterprises implementing innovations (quantity), the innovation costs of industrial enterprises engaged in innovation activity (thousand UAH), the volume of innovation products sales (quantity), costs of technological innovations, new technological products (goods and service) (quantity), the number of applied new technological products in enterprise's production (quantity) in Ukrainian 24 regions in 2017. The estimation results could be seen in the figure 2.

Figure 2: Dendrogram of regional cluster classification on the innovation indicators in regions



Source: Authors' estimations

The estimation results reflect a more clustered arrangement of regions based on the innovation indicators. Dendrogram is different from the previous diagram of macroeconomic parameters for 24 regions. The assessment results of innovation indicators demonstrates the predominance of Kharkiv and Donezk region in the first cluster. This regions have the highest innovation capacity compare to other items in the cluster classification. Zaporizhya, Dnipropetrovsk, Sumy, Kirovohrad, Mykolaiv refer to the second cluster. Lviv, Kyiv, Odesa, Chernihiv, Kherson occupy the third cluster position. The rest of regions form the fourth cluster with low innovation potential. The share of industrial enterprises that introduced innovative products amounted to 10.5% during 2012 - 2014; innovation processes - 11.3%, organizational innovations - 2.3%, marketing innovations - 2.9% (State Statistic Service Ukraine, 2014). This tendency indicates an unfavorable situation in the R&D financing in regions, and results in the low efficiency of innovative activity. Following it one can mention a decrease in the share of realized innovative products in the total volume of industrial production in Ukraine that makes up 3 % in 2017. The analysis of the distribution of total funding innovation activity by sources in Ukraine illustrates the predominance of the own funds that make up 84.5 %, the state and the local budgets are 3.5 %, the domestic investors' funds - 3 %, foreign investors' funds - 1.2 %,

loans – 6,5 %, funds from other sources equal 1.3 % in 2017 (Scientific and Innovative Activity of Ukraine, 2018, p.91). The insufficient financing reduces efficient development, leads to the of high-tech products and technologies imports' dependence in regions. The modeling results prove a necessity to apply effective regional policy at the state level for innovative development. Strategic tasks of the regional policy in Ukraine are increasing the regional competitiveness and strengthening their resource potential; ensuring the development of human resources; determination of spheres innovative breakthrough, development for inter-regional cooperation, and creation of favourable business conditions for regional prosperity. Further estimations tree of unification Ukrainian regions in the clusters by the method of single communication using features of logarithmic scale demonstrate domination the predominance of industrial regions. The variables number of enterprises that introduced innovations, costs of technological innovations, new technological products, low waste; resource-saving, waste free processes applied for assessment 24 regions in 2017 in Ukraine. The concentration of the bulk R&D resources in Kyiv, Kharkiv, Dnepropetrovsk and Donetsk causes the necessity of financial redistribution and scientific resources among regions for equalization its regional gross product per capita growth. The choice and construction of the model of hierarchical cluster analysis suggest the assessment of the economic variables, estimation of the significant coefficients, and determination some the basic factors of innovation policy. The solution of the specific research task indicates on the problem of availability statistical information, methods of estimation, and receiving results. The increased period of investigation and inclusion additional variables for estimation will provide detailed analysis of regional development in Ukraine. The study results confirm the feasibility of applying this approach to assess regional innovation potential. Providing access to results of hierarchical cluster analysis offers an insightful assessment of innovation policy practice and its evaluation for Ukraine's regions. Following our approach, we consider that regional policy should take into account the innovation component for each individual region. The innovative breakthrough in regional development considers the active state policy, building up administrative capacity at local and regional levels, comprehensive regulatory support of innovative activity, and formation favorable institutional environment. The regional authority's function is to elaborate and realize inter cluster projects, and support of new ideas and experience. The organization attractive innovation policy for innovative cluster development based on coordination activities, financing and attracting investment will stimulate innovations' increase in regions. The aim of the regional authorities is to elaborate, implement inter-cluster innovative projects, and support the exchange of experience and new ideas.

4. CONCLUSION

The obtained results highlight the macroeconomic differences create the basis for asymmetric innovative development at regional level. The assessment of regional indicators taking into account macroeconomic and innovation data confirms the need for a differentiated approach based on the economic and innovative levels. The effective regional policy is the basis for improvement and overcoming regional disproportions through equalization gross regional product per capita. The implementation of regional economic policy provides a need to paying attention regional authorities to the innovative component in it. Clusters' creation in the form of technology parks is an important direction of the strategy for innovative development in the regions. The mechanisms of technology parks implementation consider based on zones with attractive innovation climate. The favorable law legislation, tax exemptions, access to financial sources, availability of office production infrastructure, telecommunications, conditions for comfortable living standards are vivid components of analyzed mechanism. Using the obtained results of hierarchical cluster analysis, it should be noted the crucial role of forms of private public partnership.

The state is responsible for legal initiatives in providing policy for innovative environment formation. Entrepreneurs' state support plays a crucial role in disseminating innovative ideas, and implementing innovative projects.

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INNOVATIVE MANAGEMENT PERSPECTIVE: ABM - ACTIVITY BASED MANAGEMENT

Olga Ponisciakova
University of Zilina
Univerzitna 1, 010 26 Zilina, Slovakia
olga.ponisciakova@fpedas.uniza.sk

ABSTRACT

One of the most important tools of controlling and managerial accounting is activity based costing (ABC). Its basic principle consists in assigning consumed resources to activities, grouping activities into activities and then assigning activities to cost objects. This method of costing has profiled due to the shortcomings of traditional calculation methods, which became more apparent in the 1980s. Therefore, active global market players had to start thinking about developing more accurate and, in particular, more objective calculation procedures, updating performance standards and competing strategies. Globalization has brought many changes in terms of production conditions and business management itself. The most important determinants of these changes are increasing globalization and increasing competitive pressure, substitution of work by automation of production and activities, continuous innovation of performance and technology, great attention to quality and individuality of performance, shortening performance life cycle, increasing service activity, indirect costs as well as customer orientation preference. The interplay of the facts giving rise to changes in the method of calculation has made it necessary to seek coherence between the incurrence of costs and the existence of the business. The closest link is between performance, the implementation of which induces certain activities and consumption of costs. This relationship is ultimately the core idea of ABC. The costs are caused by activities and not by individual performances. Practical use of the ABC method therefore requires detailed knowledge of the factual course of specific activities, procedures and processes within the company. The use of the ABC calculation method requires so-called. activity-based management (ABM). The essence of activity-based management is best illustrated by the application of horizontal management, the creation of process teams and the modernization of the way of motivation. These are the building blocks that are based on the positive historical experience of management with applied are an emphasis on the priorities of activity-based management. Referring to the importance and benefits of ABC and ABM with respect to identifying the rate of use of progressive management in particular in the conditions of the Slovak Republic - Zilina region is the main subject of the paper.

Keywords: *ABC, ABM, Calculation, Management, Methods*

1. INTRODUCTION

The business environment is changing year by year. There is not only an increase in supply that largely exceeds demand, but also globalization of the competitive environment." (Krizanova, et.al., 2019) Under the unstable conditions of today's world, academics and management practitioners continually strive to create, model or define, on the basis of practical shaping, new ways to improve business management and, in particular adapt to demanding environments. It is the fact, as Durana et.all (2020) wrote:„ Researchers worldwide have paid great attention to identifying and exploiting the main drivers of innovation management, which has led to many research articles that have adopted different approaches and identified several factors that are related to innovation." According to Bartosova and Kral (2016): „Each rated entity is unique in its own way; what appears to be the optimum in case of one enterprise, may be under the conditions of another one inconvenient because of its specific financial objectives, business

strategy, development stage, etc..” Brabenec (2010) also claims, that : „ The purpose is to conduct joint research and development, to produce or acquire assets or rights, or to share services, with the ultimate consequence of reducing costs or increasing sales.” Flexibility in this context is appropriate, as a dogmatic, tradition-based approach already fits few institutions. Modern and innovative methods of management include ABM - Acitiviy Based Management. As Kurmanov, et.al.(2019) recalls: „ In the scientific literature, various studies are conducted for input resources to analyze the effectiveness of the innovation sphere.”, because: „Innovation is a complex and wide concept”. (Domi, et.al., 2019) Alani et.al. (2019) says, that „ Product innovation has been considered one of the main drivers of value creation, the prerequisite for market success, and often for business survival, particularly in high-tech industries”. Kijek et.al.(2019) adds: „ Since the ability to create and absorb innovation is considered as a crucial factor of economic development...“ This type of management can be defined as a discipline oriented to managing activities as a key factor in improving customer value and raising profile through this value. The historical origin of ABM can be found in the Classical School of Management, which includes Theory of Administrative Management. Its pioneer was H. Fayol, who was best known for his publication of the Principles of General Business Administration. According to Fayol, enterprises carry out six basic types of activities: technical, commercial, financial, protective, accounting and management. Management can then be defined as a group of five elements, which includes anticipation, organization, command, coordination and control. In particular, General Motors management contributed to the development of the theory of administrative management, in which management according to Fayol's activities was applied before and after World War II (Belás et.al., 2016). A number of definitions characterizing this concept can be found in the literature on activity-based management. These include the assertion that ABM focuses on continuous improvement in customer satisfaction and therefore business profit through activity-based management. It works over ABC as the main source of information for ABC and consists of:

1) Analysis of activities (Process Management)
   This hierarchical description of activities allows:
   - Analyze, stimulate, measure performance and improve business processes;
   - Standardize working practices and develop uniform guidelines;
   - Reduce "communication losses" and optimize material, resource and information flows;
   - Identify critical processes, costs and factors affecting their course.

2) Activity Based Costing
   The philosophy is to allocate resources first to activities and then to products. Using ABC process analysis, the activities and costs associated with them are mapped. The costs are then accurately allocated to activities, and then from activities to products and customers, depending on how they participate. This step is very important because costs are key variables, as Mitacek (2015) confirms that: „Cost management is a specific area not only of management accounting but mainly from the comprehensive management control. This step is followed by a specific method used within ABM, called ABC - activity cost management. It is also pointed out by Niasati, Fazaeli, Hamidi and Viaynchi (2019) who claim that: „This method is a new and more effective cost system.“ ABC benefit is also the fact, that: „Extracting expenditures in an organization based on ABC Activity-based costing) is one of the important ways to access the correct financial information“ (Alizadeh et.al., 2015).

3) Balanced Scorecard
   The evaluation of objectives most often includes four basic types of perspectives:
   - Financial (how to look at the values of the company);
   - Customer (the question of looking at the customers of the company);

- Procedural (the question of which processes in the company can be successful for the strategy and therefore which of them the company should focus on);
- Innovative (the question of how an enterprise is able to make the changes and improvements that are essential for a prospective-minded enterprise to continue its existence).

Other definitions of ABM may be included, for example:

- ABM is a systematic and structured approach to analyzing, improving control and process management with target product and service quality;
- ABM represents the identification and management of coherent flows of activities within and between organizations in achieving the chosen business strategy;
- ABM is an approach that presents a comprehensive methodology for process improvement and error prevention at all business levels;
- ABM creates a system for managing business-related resources that connects an organization with its suppliers and customers;
- ABM is a group of tools and methods for improving business process performance;
- Love and LI have further defined ABM as an "elixir" to improve the overall business performance through improved process performance. Zaire defines ABM as a structured approach to the analysis and continuous improvement of core business processes and activities. Another understanding is presented by Kreschner, according to which ABM is the method used to acquire, define, distribute, implement and improve best practices. For best practices, the author considers best practices taken from other businesses.

All definitions have a common feature and that is the orientation on the action, more precisely, course of activities. One deals in more detail with principles, the other deals with methods, but most definitions emphasize the content of management processes. (Meyers, et.all, 2019) Thus, ABM is a systematic identification, visualization, measurement, evaluation and continuous improvement of business processes using methods and principles based on a process approach. Allows you to monitor more effectively. In this case, an enterprise system is an open and dynamic system that consists of activities as essential elements. Its subsystems form processes that arise from logical-sequential joining of individual activities. The links and their level between the individual elements of the system (but also the elements of the system and the subsystem that represents the surroundings of the company) represent process performance indicators linked to the given process attributes. These attributes provide clues for transforming the company's strategy into performance indicators.

2. METHODS

In order to approach Activity Based Management, it was necessary to base information and analysis on relevant literature and other available sources. The acquired knowledge concerning the development, formation and basic characteristics of ABM was subsequently synthesized and used in the inquiry method used in the survey of the use of ABM in the Žilina region. The required output could be realized by applying methods of analysis, synthesis and abstraction using a logical-deductive approach together with the application of specific mathematical procedures.

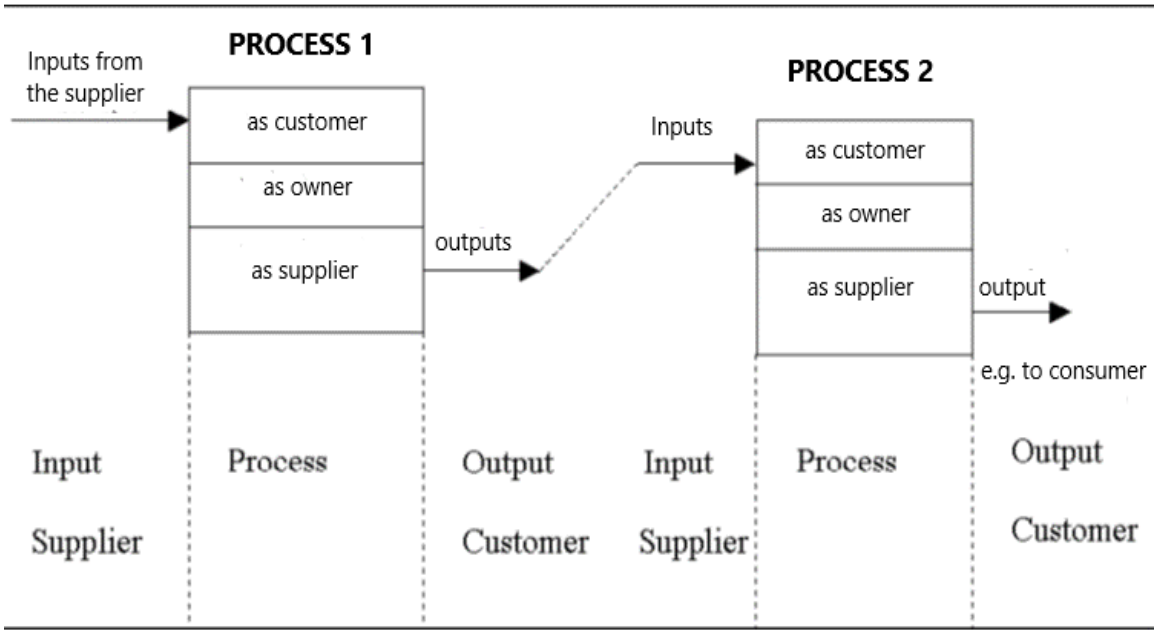
3. THE ESSENCE OF ABM

The essence of activity-based management is best illustrated by the application of horizontal management, the creation of process teams and the modernization of motivation. These are building elements that are based on the positive historical experience of management and are applied with an emphasis on the priorities of activity-based management.

- Horizontal control:
  It is the use of non-hierarchical autonomous organizational units, which are characterized by strong horizontal mutual links. Vertical integration is maintained only for key enterprise-wide strategic and development activities.
- Process teams:
  These are teams with high autonomy, who work on the basis of business in the company (this principle was already formulated by Tomáš Baťa in the thirties of the twentieth century).
- A new way of motivating:
  It is about using collective motivation. This kind of motivation depends on how the process team contributes to customer added value. The measure is the outcome of the process and not the performance of activities. Customer and customer satisfaction is the main criterion of the remuneration for a given process team.

The process approach to business management and the ability to measure and evaluate processes can be seen as the most accurate expression of ABM's essence, or - if we cannot measure, we cannot even manage. Process management becomes a condition for understanding the customer's wishes and expectations. As the world is moving towards globalization, management disciplines are moving towards integration. Process control can be applied in different ways. Customer pressure on the company is also visible in the development of relatively separate management disciplines such as quality management, cost management, controlling. These hitherto independent disciplines are now an integrated system in which process monitoring is a prerequisite for transparent knowledge of the company.

Figure 1: IPO diagrams, C-S, process relations

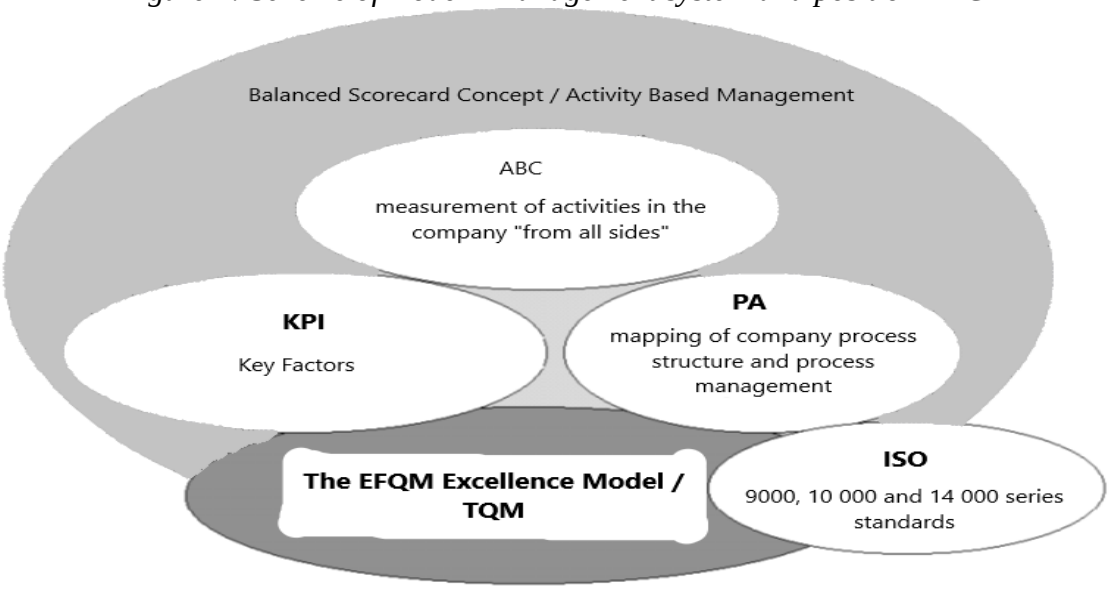


Source: Floreková, et.al., 2001

The element of process management and the necessity to measure processes penetrates into the standards in which it has become a core concept. This also applies to so-called. a major revision of the ISO 9000: 2000 series standards, or one of the important elements of EFQM for excellent business, and is the starting point for modern management. The processes have to be viewed from the customer's point of view, because it induces these processes and thus controls the overall activity of the company (Fig. 1).

In this understanding, the process is:

Figure 2: Scheme of modern management system and position ABC[1]



Source: Ponisciakova and Gogolova, 2017

Any activity that accepts inputs, adds value to the customer by these inputs, and creates outputs for that customer, where the customer can be another internal or external process/organization /customer. The simple understanding of processes as their "owners", each activity combines multiple processes. Inputs, management, control, resources are suppliers of processes. The term "owner" of a process means personal responsibility for the performance or management of the activity. To effectively apply the ABC method, it is necessary to start with: "ABC thinking". This approach to management becomes a real competitive advantage for the company and the ABC method must always be understood as a comprehensive method, which includes all business areas (Fig.2). Top management uses these advanced management methods and management systems in decision making. It is always a matter of methods and approaches, not specific guidelines that can solve the problem, and therefore decision-making and management is ultimately always a human factor.

3.1. Principles of ABM

The principles of activity-based management can be explained through the areas of management that they influence. They may be bound:

1) To work as a principle:
   - Integration and compression - where standalone and previously different work is combined in a horizontal or vertical direction into a single process so that the process team strives to maximize value for the customer, which is its main task;
   - Delinearization - where artificially created continuity of work is replaced by natural continuity and sequence of work that is in accordance with the requirements of teamwork;
   - The most advantageous place of implementation - in this case work is performed where it is most advantageous, it does not take into account organizational boundaries.

[1] ABC Activity based costing - process cost management, KPI Key Performance Indicators - KPI Key Performance Indicators, PA Process Analysis, TQM Total quality management, EFQM European Foundation for Quality Management Excellence Model - Model of business excellence according to the European Society for Quality Management, BSC Balanced Scorecard - balanced performance, ABM Activity Based Management ISO, International Standard Organization

2) To process as a principle:
   - Application of teamwork - it is the realization of processes by high-level process teams;
   - Process focus of motivation - it is a direct link of the motivation of employees in the process team to the result of the process, which is adding value to the customer;
   - Process responsibilities - each process is assigned its owner, the process owner is responsible for the process implementation;
   - Variant perception of the process - variants of the same process are created according to the demands of different markets or inputs;
   - 3S (self-management, self-control and self-organization) - self-management, self-control and in some cases the self-organization of process team members is given a high degree of knowledge and responsibility for their own work.

3) To company as a principle:
   - Flexible process team autonomy - where process teams are flexibly assembled to meet changing customer needs and requirements;
   - Knowledge and information accessibility - it is a systematic removal of knowledge and information barriers and creating information flows inside and outside the company.

An example of ABM implementation is the following simplified process, which is of course still divided into sub-stages and activities:
- Setting up a project team for implementation of process management;
- Hierarchization of all business processes;
- Dentification of process activities and creation of process maps;
- Assigning the strategy's target values with a performance indicator;
- Process benchmarking;
- Process simulation and optimization;
- Own process flow;
- Measuring, evaluating and improving processes.

The practical reflection on the use of ABM benefits was the subject of a questionnaire survey of selected profit and non-profit organizations within the Žilina region. The results show that the problem is the relatively low level of knowledge and knowledge of ABM. Most respondents agreed that did not know ABM at all (65.54%) and the answers about the unwillingness to use ABM prevailed despite the knowledge of this method (25.31%). Only 2.50% of respondents expressed a positive attitude towards the current implementation of the method in the organization and 3.90% said that they know and use the method, but only to a limited extent. The method is often used by only 1.2% of the respondents and 1.55% of them did not comment at all.

4. CONCLUSION

At ABM, an enterprise is perceived as a set of processes that need to be done to deliver end, target products and services. By controlling processes it is possible to influence not only the level of costs and the amount of profit, but also the rate of added value or other attributes of the value creation processes of the company. It is beneficial in providing information for decision-making in many areas, ranging from price to cost management, products and staff. It also provides the opportunity to perceive the operation of the organization procedurally and not fix it only on performance management. However, the fact remains that it may not be ideal and usable universally and for all organizations. It is time-consuming and cost-intensive because it requires first and foremost an understanding of the ABM concept and an overall redistribution

of the organization from defining activities, their variability, identifying drivers - carriers of resource consumption and activity costs. It requires the identification and tracking of many data, which managers can assess as unnecessary or above standard. For the use of the ABM method, a better determinant approach to management and decision-making is a decisive determinant, and it remains up to the managers of the organizations to be willing to take risks and to take into account and be patient with ABM in analyzing the outcomes of this decision.

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RISK FACTORS FOR MALIGNANCY: SOCIAL AND PSYCHOLOGICAL ASPECTS

Diana Tsiring
Tomsk State University, 36 Lenin Ave., Tomsk, Russia
Chelyabinsk State University, 129 Bratiev Kashirinykh st., Chelyabinsk, Russia
L-di@yandex.ru

Yana Sizova
Tomsk State University, 36 Lenin Ave., Tomsk, Russia
Chelyabinsk State University, 129 Bratiev Kashirinykh st., Chelyabinsk, Russia
sizova159@yandex.ru

ABSTRACT
Cancer is a disease that poses a threat to human life and health. Regarding the nature of this disease, it can be assumed that biopsychosocial factors and certain personal characteristics can act as a trigger for the disease, as well as contribute to its progression or the occurrence of a relapse of the disease. There is no clear opinion on the impact of social and psychological factors on the development of cancer. This paper attempts to generalize and systematize the available data on the nature of malignant neoplasms. The main methods of this research are theoretical review and analysis of literary sources, methods of systematization and generalization of the material. In the result of the analysis revealed that the most important psychosocial risk factors in cancer development is the difficulty in expressing negative emotions, feelings of frustration and feeling of powerlessness in the face of hardship, a manifestation of hopelessness as a specific reaction to stressful events, presence of depression, high level of anxiety, the prevalence of external locus of control and low importance of health. It is also important to note the role of stressful life events, low levels of social support, and experiencing the stresses of family relationships in the development of cancer. Understanding the mechanisms of stress events ' impact on the individual's psyche, studying the factors that influence the incidence and survival of patients with cancer diagnosis, will allow us to identify the psychosomatic nature of the disease and show the existence of additional important predictors of survival in patients with malignant neoplasms.
Keywords: *Malignant neoplasm, Psychological factor, Social factor, Survivability*

1. INTRODUCTION

The dynamic pace of life, the increasing processes of globalization and informatization, and the unstable socio-economic situation have an impact on modern man and make special demands on him. In the context of the need for effective resolution of negative events and phenomena, the question of individual stress resistance becomes relevant. Some people in the process of overcoming difficulties are characterized by high efficiency, the ability to organize and regulate their behavior and activities, rational distribution of their own resources, others-a sense of helplessness and inability to change the situation and predict the course of its development. The problem of individual stress tolerance and productive coping with difficult living conditions is particularly acute in situations that pose a threat to human life and health, including cancer. Studies of psychological parameters in patients with oncological diseases of various types and modifications have been carried out for several decades, but the interest in this topic among scientists from all over the world is not only weakening, but increasing. The results of research in recent decades have revealed the negative impact of stressful events on people's health (Avison, Gotlieb, 1994; House, Landis, Umberson, 1998; Lehto et al., 2005; Tarabrina, 2005; Ivashkina, 2010).

In these studies, scientists note that the incidence and survival of individuals with cancer diagnosis are mediated by social and psychological characteristics of the latter. However, scientists have not yet been able to determine the specific social and psychological mechanisms and factors that lead to the development of malignant neoplasms.the results obtained are ambiguous and sometimes contradict each other. Based on the above, it is important and relevant to systematize the data available in science on the problem of determining cancer.

2. METHODOLOGY AND DATA

The purpose of this work is to identify and theoretically substantiate the social and psychological factors of malignancy. Understanding the mechanisms of stress events ' impact on the individual's psyche, studying the factors that influence the incidence and survival of patients with cancer diagnosis, will allow us to identify the psychosomatic nature of the disease and show the existence of additional important predictors of survival in patients with malignant neoplasms. The main methods of this research are theoretical review and analysis of literary sources, methods of systematization and generalization of the material.

3. RESULTS

Today, there are two main points of view on the nature of cancer. According to the first one, there is no psychological determination in the formation and development of a malignant neoplasm, as well as in the patient's survival rate. Proponents of this approach call as the main reasons for the origin and development of a tumor (carcinogenesis) the impact on a person of exogenous and endogenous factors, their interaction (Zaridze, 2005; Belitsky, 2006). The exogenous group of factors includes environmental and lifestyle factors: Smoking, dietary habits, infectious agents, occupational carcinogens, ionizing radiation, ultraviolet radiation, alcohol consumption, air pollution, reproductive factors, low physical activity. The group of endogenous factors consists of genetic, hormonal and immunological factors (Zaridze, 2005; Belitsky, 2006). The second point of view on the nature of malignant neoplasms considers them as psychosomatic pathology (Bernard, 1995; Brown, Levy, Rosberger, Edgar 2003; Meneghetti, 2005). Researchers in the course of empirical testing prove the existence of a relationship between cancer and anxiety, signs of depression, stress, emotional tension and the ability to verbalize their own emotions, the type of response to the disease, features of relationships with others, and more. In addition, within the framework of this approach, the dependence of the survival rate of patients with malignant neoplasms on their psychoemotional state, psychological and personal characteristics, and features of social relationships is noted. In this study, we will consider the psychological and social factors of cancer. Psychological prerequisites for the development of malignant neoplasms are described in the works of P. Revidi, H. J. Eysenck, L. Temoshok, Y. Chida, I. G. Malkina-Pyh, M. G. Ivashkina, K. P. Belitsky, N. V. Tarabrina and others. P. Revidi notes that the appearance of cancer is promoted by a tendency to depressive reactions, restraint in the expression of emotions, expressed feelings of guilt and self-doubt. The author notes that the experience of long-term stress and Psychotrauma can lead to the development of malignant neoplasms in the period from 1 to 15 years (Shchelkova, Usmanova, 2015). According to the research by H. J. Eysenck, the appearance of cancer is associated with such personality features as the suppression of anger, anxiety, anxiety and other emotional reactions, rigidity of attitudes, feelings of despair, depression, and self-sacrifice. In relationships, such people tend to avoid open conflicts, are conformist, have difficulties in defending their point of view, and are patient and helpful. When coping with difficulties, they tend to feel helpless. Eysenck notes that a person with these characteristics is more likely to face the appearance of malignancies, as well as in the case of cancer, a faster death than people with other personal characteristics (Eysenck, 1994). In the work of D. Temoshok, an attempt is made to create an integrative model that takes into account

the psychological and physiological characteristics of a person with cancer and the peculiarities of the process of coping with the disease.in this model, the author tries to smooth out the existing contradictions between the understanding of the nature of cancer. Also, L. Temoshok provides data on factors that determine the formation of malignant tumors. These include feelings of hopelessness and helplessness in stressful situations, difficulties in expressing emotions (Temoshok, 1987). According to Y. Chida and co-authors, psychosocial factors influence the occurrence of malignancy in initially healthy people. Unproductive coping strategies, experiencing negative emotional States, and poor quality of life are not only factors that increase the risk of cancer, but also affect the survival of patients with already diagnosed cancer (Chida, Hamer, Steptoe, 2008). In the study of the psychological profile of cancer patients, a number of personal characteristics characteristic of most people with cancer are noted. These features are also considered as risk factors for the development of malignant neoplasms: the presence of rigid attitudes and stereotypes about health and disease, the dominant position of children in communication, the prevalence of externality of the locus of control, low significance of the value of health (Malkina-Pyh, 2008; Ivashkina, 2010). The study by N. V. Tarabrina and co-authors notes the important role of such social factors as natural disasters, the death of loved ones, accidents, which significantly affect the development of cancer. In addition, the authors note that "stress associated with the birth of children, with the experience of a threat to the life of children or their death, are among the serious factors leading to the development of breast cancer in women" (Zhuravlev, Tarabrina, 2005). Speaking about the family as a social risk factor for cancer development and in the context of cancer patients ' survival, we should mention the results of O. N. Sharova's research. The data obtained by the author indicate that the experience of family life, both positive and negative (divorce, death of one of the spouses), plays a more positive role in the productivity of coping with the situation of cancer than the lack of such experience (Sharova, 2017). However, it is not true to study psychological factors in isolation from others that obviously affect the condition of a patient with this diagnosis. However, the number of studies performed jointly by specialists of various Sciences (physicians, biologists, psychologists, psychotherapists, sociologists, etc.) is extremely small. In addition, the results of research on the influence of psychological factors on the development of cancer are ambiguous. There are studies that show that depression (or rather a feeling of helplessness and hopelessness), combined with a lack of social support when interacting with biological prognostic factors, can affect the course of the disease. However, the question remains as to how this influence is carried out: directly through the immune status or indirectly, through risk-taking behavior / cooperation during treatment. An important condition for a fruitful search for a solution to the problem of the nature of cancer is to combine research in various scientific disciplines that study human health at different levels.

4. CONCLUSION

Summarizing the considered psychological risk factors for the development of malignant neoplasms, we can note as the main ones: difficulties in expressing negative emotions and their verbalization, feelings of helplessness and despair, manifestations of hopelessness as a reaction to stress, the presence of depressive States and an increased level of anxiety. Speaking about the social factors that provoke the appearance and development of cancer, we can note the role of stressful life events, low level of social support, and stresses in family relationships. Thus, we can note that psychosocial factors play an important role in the etiology of cancer. Stress, certain characteristics of the individual and social environment can contribute to the occurrence of cancer. The study of psychosocial risk factors for the development of malignant neoplasms is not only of scientific interest, but also practical, as it allows us to develop rehabilitation psychological programs that improve the quality of life of patients with cancer and increase their survival.

The theoretical review of research on the risk factors of malignant neoplasms will serve as the basis for further empirical study of the personal characteristics of cancer patients in the framework of a systematic study of psychological, medical and social factors of survival of cancer patients living in an industrial metropolis and rural areas.

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THE IMPACT OF COVID-19 CORONAVIRUS ON FINANCIAL MARKETS: A QUALITATIVE APPROACH

Richard Ajayi
University of Central Florida
12744 Pegasus, Orlando, FL, USA
rajayi@bus.ucf.edu

Fuzuli Aliyev
Baku Engineering University
Baku, AZ0101, Azerbaijan
faliyev@beu.edu.az

Teymur Sarkhanov
Sakarya University, Turkey
Azerbaijan State University of Economics (UNEC)
Baku, Istiqlaliyyat str.6, AZ1001, Azerbaijan
teymur.sarkhanov@gmail.com

ABSTRACT

Just after the agreed Phase One trade deal between the US and China, the world is now experiencing a major epidemic of coronavirus infection. The Coronavirus has affected almost all sectors of life, including all sides of the economy and financial markets. It caused sharp decrease in demand and lessened the economic activity. The virus outbreak has become one of the biggest threats to the global economy and financial markets. Modern companies are very connected through economic integration and supply chain. Due to the lockdowns global companies have disruptions in supply, transportation and mainly at selling outputs. These result in decreases in net incomes and even losses at the firms. Stock prices react these procedures rapidly. But not all company stocks react the same way. Thus we separate the impact into two groups. This paper studies impact of Coronavirus on developed and emerging financial markets. Developed financial markets as US, and European markets practice turbulences in stock and bond markets. The central banks of these economies responded cutting interest rates, yet this action didn't stimulate the market continiously. Emerging markets as China, India, Brazil, Mexico, Russia, Indonesia and Turkey suffered harder from the virus as economic inactivity through devaluation in the currencies and increasing unemployment. This paper lists the impacts of the virus on these group country financial markets in a qualitative way. Findings present probable steps to be taken as regulatory authorities and investors to keep financial markets operate efficiently.

Keywords: *Coronavirus, Financial markets, Emerging markets, Developed markets*

1. INTRODUCTION

The world is now experiencing a major epidemic of coronavirus (CoV) infection. A new coronavirus infection epidemic began in Wuhan, Hubei, China, in late 2019, originally called 2019-nCoV and renamed COVID-19 by the World Health Organization on February 11, 2020. The World Health Organization on March 11 declared COVID-19 a pandemic, pointing to the over 118,000 cases of the coronavirus illness in over 110 countries and territories around the world and the sustained risk of further global spread. At late January 2020 Chinese authorities confirmed that the virus had killed 80 people and infected almost 3,000 more. And they warned its spread could accelerate still, what with the millions of people traveling for Lunar New Year celebrations – trips that had also taken the virus abroad.

The outbreak of coronavirus has caused a pandemic of respiratory disease for which vaccines and targeted therapeutics for treatment are unavailable (Wang et al. 2020). The Coronavirus has affected almost all sectors of life, including economy and financial markets. The virus outbreak has become one of the biggest threats to the global economy and financial markets. Even though the novel coronavirus outbreak started in December 2019, financial markets did not react immediately as there was little information on how long it might last, whether China would be able to quickly contain it and prevent it from spreading to other countries, and the risks that such a spread would entail for the global economy. There are some papers in literature studying impact of epidemics and a few specifically COVID on economy and finance. Chen et. al (2007) examine the impact of the SARS outbreak on Taiwanese hotel stock performance. They find Taiwanese hotel stocks show significantly negative cumulative mean abnormal returns, indicating a significant impact of the SARS outbreak on hotel stock performance. Yang et al. (2020) study the impact of the coronavirus outbreak on tourism. Employing DSGE model they find that, as the coronavirus outbreak hinders tourism consumption and health status, welfare declines. To facilitate post-crisis tourism recovery, they propose to subsidize vouchers for residents for tourism consumption. Kim et al. (2020) research the impact of infectious and macroscopic epidemic disease outbreaks on financial performance of the restaurant industry. They find the negative influence of epidemic disease outbreaks on the restaurant industry, and identify firm characteristics serve as risk mitigating factors. Financial markets have reacted to recent unpredictability with large drops, triggering a market wide circuit breaker four times in March. The safeguard pauses trading for 15 minutes in hopes the market will calm. The U.S. Securities and Exchange Commission mandated the creation of market-wide circuit-breakers to prevent a repeat of the Oct. 19, 1987 market crash, in which the Dow plunged 22.6%. Since then, they have only been triggered once in 1997 before the four times this March.

2. IMPACT OF OUTBREAK ON THE DEVELOPED MARKETS

US tech companies rely heavily on China to produce their goods, so it's no surprise to see supply chain disruptions knock off tech giants' balance as Microsoft, Apple, HP and etc. Microsoft's shares fell on February, and so did those of chipmakers Intel and AMD, two of its major suppliers. Then again, late February was the fourth consecutive day of virus-related declines for the whole of the US stock market. And as if to mark the occasion, new data arrived to show US factory orders for big-ticket items (think cars and appliances) falling in January – even before the worst of the virus had emerged. On Monday, 24 February 2020, the Dow Jones Industrial Average and FTSE 100 dropped more than 3% as the coronavirus outbreak spread worsened substantially outside China over the weekend. This follows benchmark indices falling sharply in continental Europe after steep declines across Asia. Developed market indices as DAX, CAC 40 and IBEX 35 each fell by about 4% and the FTSE MIB fell over 5%. There was a large fall in the price of oil and a large increase in the price of gold, to a 7-year high. On 27 February, due to mounting worries about the coronavirus outbreak, various U.S. stock market indices including the NASDAQ-100, the S&P 500 Index, and the Dow Jones Industrial Average posted their sharpest falls since 2008, with the Dow falling 1,191 points, its largest one-day drop since the 2008 financial crisis. On 28 February 2020, stock markets worldwide reported their largest single-week declines since the 2008 financial crisis. Following a second week of turbulence, on 6 March, stock markets worldwide closed down (although the Dow Jones Industrial Average, NASDAQ Composite, and S&P 500 closed up on the week), while the yields on 10-year and 30-year U.S. Treasury securities fell to new record lows under 0.7% and 1.26% respectively. U.S. President Donald Trump signed into law an emergency appropriations and pandemic countermeasures bill including $8.3 billion in government spending. After OPEC and Russia failed to agree on oil production cuts on 5 March and Saudi Arabia and Russia both announced increases in oil production on 7 March, oil prices fell by 25 percent.

Figure 1: S&P500 and FTSE100 index returns

On the morning of 9 March, the S&P 500 fell 7% in four minutes after the exchange opened, triggering a circuit breaker for the first time since the financial crisis of 2007–08 and stopping trading for 15 minutes. At the end of trading, stock markets worldwide saw massive declines (with the STOXX Europe 600 falling to more than 20% below its peak earlier in the year), with the Dow Jones Industrial Average eclipsing the previous one-day decline record on 27 February by falling 2,014 points (or 7.8%). The yield on 10-year and 30-year U.S. Treasury securities hit new record lows, with the 30-year securities falling below 1% for the first time in history. On 12 March, Asia-Pacific stock markets closed down (with the Nikkei 225 of the Tokyo Stock Exchange also falling to more than 20% below its 52-week high), European stock markets closed down 11% (their worst one-day decline in history), while the Dow Jones Industrial Average closed down an additional 10% (eclipsing the one-day record set on 9 March), the NASDAQ Composite was down 9.4%, and the S&P 500 was down 9.5% (with the NASDAQ and S&P 500 also falling to more than 20% below their peaks), and the declines activated the trading curb at the New York Stock Exchange for the second time that week. Oil prices dropped by 8%, while the yields on 10-year and 30-year U.S. Treasury securities increased to 0.86% and 1.45%. On 15 March, the Fed cut its benchmark interest rate by a full percentage point, to a target range of 0 to 0.25%. However, in response, futures on the S&P 500 and crude oil dropped on continued market worries. As soon as the Fed cuts interest rates to zero, everyone in the market panics and thinks that the pandemic will be worse than expected, and begins to withdraw money from the market. On mid-march investors began to withdraw $ 50-60 billion from the so-called money market. This means that these funds need to sell short-term risk-free bills in order to pay their money back to investors. But there are no buyers in the market. These bills are very short-term government and mostly commercial papers of large companies. Companies and pension funds invested in these funds to be very liquid and to sell quickly when needed. But the fact is that now there were no buyers, and the funds could not sell their bills and commercial papers to return the money. To sell too cheaply is to return the money to those investors at a loss. But money market mutual funds should not do that. One of the main problems was that banks could not get these bonds due to the standards set for them (which

were set after 2008). It was against capital rules to buy those securities, which were always a very low risk, but now the risk is increasing, albeit suddenly. Banks' hands were tied to protect their balances in accordance with the rules. The impact extends to real estate funds holding mortgage bonds. The Fed announced on Sunday that it would receive $ 200 billion in mortgage debt. But it was a very small amount. Because these funds also invest in debt, a margin call comes (the demand to sell their assets as the interest rate increases), and as the price of the assets sold falls, the margin call situation re-emerges as a spiral. Thus, many real estate funds become problematic. Then the problem passes to municipal bonds. On March 16, the first day of the week, municipalities can borrow so little from the market that it is perhaps the lowest in 40 years. The closure of schools also affects this, and many city-municipal-schools receive temporary loans from local banks. Meanwhile, brokers and dealers have to think about the situation of their clients experiencing margin call problems and calculate how many will bankruptcy at the end of the day. At the same time, volatility traders are in a very bad position. Due to the virus, both the Chicago Board Options Exchange is closing and the volatility index is rising so much that several large stocks are losing half, sometimes three-quarters of their value in a day. There are also closed funds. The money management department of a large German insurance fund is facing a problem in the options market. Their strategy was to sell short-term crisis insurance and buy long-term crisis insurance. A strategy that has worked well so far no longer works. They lose more than $ 2 billion a week. Compared to the beginning of the year, they suffered a loss of 97 percent. Of course, the lost money belongs to the investors who invest in them. As it is seen, the impact on financial markets is spreading like a domino effect. It is still part of the market, but the impact of dominoes is understandable. Therefore, the Fed had to intervene in the market comprehensively and acted as a buyer in a non-buyer market and as a seller in a non-seller market. At the same time, it helped high-debt companies, which were probably in the form of zombies and had to go bankrupt. But it seems that building confidence in the common market, knowing that the Fed will be criticized, is a much more important factor than bankrupting any bank or fund.

3. THE IMPACT ON THE EMERGING MARKETS

In early March 2020, oil prices were around $ 50, then prices fell to $20 as a result of the low demand brought by the outbreak. Low oil prices have made the economies of oil-exporting countries such as Russia, Qatar, Azerbaijan, and Saudi Arabia fragile, especially where the economy is predominantly oil-dependent. In this context, Coronavirus affects many countries as well as emerging markets. The serious decline in oil caused by the Coronavirus outbreak has turned the world market upside down. This decrease in energy prices may be positive for inflation. Moreover, this situation seems favorable for Turkey because Turkey is dependent on foreign energy. Increase in the Fed's interest that we now had quite a negative impact on Turkey. But after the coronavirus, the Fed cut interest rates. These developments in interest rates, foreign currency debt as a country that is we think it will be positive effects in terms of Turkey. Although the discount on interest rates seems to be positive, it is necessary to avoid risky assets. Due to the Coronavirus, many foreign investors made a $3.4 million outflow in the bond market, according to January-February 2020 data. We have said that the Coronavirus has serious effects on the tourism sector. Turkey also inevitably be affected by this situation. As a country with serious tourism income, it has already begun to give losses in tourism. Also, the decrease in tourism caused Turkish Airlines shares to decrease. This was a negative development. Turkey is not a case other than those affecting the financial markets. Turkey is affected by the situation occurring in the global market at the moment. Both in terms of health in the future in terms of adverse effects that may occur in Turkey's financial markets are waiting for hard times in Turkey. Among emerging markets, in terms of the infection curve, Turkey, Brazil and Russia appear to be most affected, followed by India and Peru.

Having said this, at this point, we think it reasonable to highlight that the death tolls are still low in comparison with the levels experienced in developed countries. With regard to this third outbreak, the good news is that emerging markets and frontier countries can benefit from best practices put in place by countries that have already been affected by the pandemic. On the other hand, the bad news is that most emerging markets do not have well-equipped health care systems to face the kind of severe outbreak seen in the already hard hit countries. That said, with regard to the economic impacts, we do not expect that any country will be spared. The combination of a domestic outbreak and the related lockdown measures implemented to contain it, along with the external shocks arising related to weaker demand from abroad and weaker tourist flows, will push emerging markets into recession, the depth and length of which will mainly depend on infection curve dynamics, lockdown duration, and the availability on a global level (accessible to the poorer countries as well) of treatments for the virus and/or a vaccine. The domestic demand struggle will be amplified in the most open economies, the ones well integrated into the global supply chain, or the commodity exporters, as well as in the small ones highly dependent on touristic flows.

4. CONCLUSION

The Coronavirus has affected almost all sectors of life, including financial markets and general economy. The virus outbreak has become one of the biggest threats to the global economy and financial markets. Even though the novel coronavirus outbreak started in December 2019, financial markets did not react immediately as there was little information on how long it might last, whether China would be able to quickly contain it and prevent it from spreading to other countries, and the risks that such a spread would entail for the global economy. But now it is clear that the impact is contagious and it is very difficult to control. The impact has effect on both developed and emerging markets. After the greatest lockdown ever in the world, countries are preparing reopen the economy under cautious conditions. We hope this openings and vaccine preparations will accelerate the recovery however the global economy will feel the impact longer.

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EASTERN MEDITERRANEAN GAS RESERVES: A RISING CRISIS FOR TURKEY AND REGION

Sayyad Sadri Alibabalu
Sakarya University, Turkey
gizilbera@gmail.com

Teymur Sarkhanov
Azerbaijan State University of Economics (UNEC)
Baku, Istiqlaliyyat str.6, AZ1001, Azerbaijan
Sakarya University, Turkey
teymur.sarkhanov@gmail.com

ABSTRACT

The diplomatic conflict over the Eastern Mediterranean issue began in the 2000s when it was mostly about legal and political issues. However, in the 2010s the Republic of Cyprus, Israel and Egypt explored vast natural gas resources, hence it became a geopolitical and geoeconomic issue. Estimates show that there is 125 trillion cubic feet of natural gas in the region. This amount makes up about 5% of the world's gas resources and is a great asset for countries in the region. The issue escalated when international companies entered the field to explore gas resources, leading to an international geopolitical issue with an economic background. The issue that has complicated this problem is the long-running Cyprus conflict. The geopolitical importance of this issue is that it has very serious implications for the region. The first major issue is the strong opposition bloc including Greece, Egypt, Israel, the EU, the US, and even Russia against Turkey's rights from these sources. The second issue is the European Union's efforts to escape from dependence on Russia's energy resources, relying on Eastern Mediterranean resources. The third issue is the fierce competition between the United States and Russia over the region. From the Turkish perspective, all parties to the conflict are trying to isolate Turkey and deprive it of its economic resources. However, Turkey has tried to get rid of this isolation in any possible way. Turkey's latest move is to sign a maritime border agreement with Libya in November 2019 that appears to be affecting geopolitical equations. The question that arises is what is the main source of this competition? Is it geopolitical or geo-economic? In this study, the authors seek to answer these questions using theories of international economics and geopolitics.

Keywords: *Eastern Mediterranean, Gas reserves, Economic and political crisis*

1. INTRODUCTION

Middle Eastern issues seem to some analysts to be one of the most important issues on the modern international agenda, as they did years ago. Centuries of unresolved conflicts, contradictions, and ethnic intermingling of the interests of global players push the Middle East to accept the Turkish role, the country which trying to win the status of world power, especially nowadays, when Ankara's geopolitical interests in the region are closely intertwined with economic issues. The discovery of the first natural gas field in the Eastern Mediterranean took place in 1999 in Israeli waters. Continuing its exploration activities in the region, Israel discovered the Tamar site, which had approximately 280 billion m3 of reserves in 2009, and the Leviathan field with approximately 600 billion m3 of reserves in 2010. Subsequently, in 2011, the Republic of Cyprus discovered the Aphrodite with a reserve of 129 billion m3 in the south of the island. It also found a natural gas field of approximately 220 billion m³ in Calypso field in 2018. In 2015, Egypt discovered 850 billion m3 of reserves in the Zohr area offshore and claimed that it has discovered more than this amount in the Noor area (SD Enstitüsü, 2019).

The final amount of recoverable reserves calculated for the ten natural gas fields discovered in the deep waters of the Eastern Mediterranean in the last decade has reached 2.24 trillion m³. Especially the Israel's giant Leviathan field (623 billion m³ reserves) and Egypt's supergiant Zohr field (850 billion m³ reserve) are at the forefront of the agenda. While technical success rates exceeded 60 percent, the foreseen commercial profitability has reached 50 percent (Balkaş, 2019). While trying to secure gas markets, production stages have been started. The Zohr field gas was transported to land only two and a half years after discovery. The production of natural gas from the Tamar field and its transportation to the Israeli facilities near the coast by pipeline is continuing. Development plans have come into force for Israel's natural gas pipeline to reach the shore via Leviathan, Karish, and Tanin sites. For Aphrodite and Calypso natural gas fields discovered in the south of Cyprus, no exact plans have yet been announced, although it is likely to be directed to Egypt. In this case, we are talking about the emergence of new large hydrocarbon reserves in the Mediterranean. Today, Turkey, Greece, Cyprus, Israel, Lebanon and Egypt have entered a dispute that already was ongoing and it can be said that the world's largest oil and gas giants. According to experts, the current situation will sooner or later lead to a change in balance in the global energy market, which will undoubtedly affect the entire region (Zaharkin, 2019). The fact that the regional states wanted to use the geological reserves in the region to solve their economic problems caused a great dispute. Because these states cannot agree on disputed areas. We will try to explain the following differences and the incomprehensibility among the regional states.

2. TURKEY

As recent events have shown, the discovery of new gas deposits in the Mediterranean has not only brought prosperity to the region but has also contributed to the growing tension. The fact is that the main contractors who wanted to expand oil and gas reserves throughout the eastern Mediterranean are Cyprus and Turkey. Thus, while the Republic of Cyprus started offshore oil and natural gas drilling in 2011, Ankara was absolutely opposed by saying that the gas field belongs to the Turkish Republic of Northern Cyprus have been violated. For this reason, the Turkish authorities not only sent the reconnaissance ships to the areas but also prevented the Italian company ENI ships from entering the drilling area several times (Захаркин, 2019). Since 2007, Turkey tried to enter Syria, Jordan, Lebanon, Egypt and geostrategic Levante lines in the area of the eastern Mediterranean. In the next phase, Turkey wanted to create and provide an entity similar to NAFTA integration between these countries. In the third step, Turkey planned to enter Iran, Iraq, and Qatar to it. The attempt to build a large welfare area in the triangle of the Eastern Mediterranean and the Red Sea could not reach its target due to the Syrian war that started in 2011 and the military coup in Egypt in 2013. In terms of preventing the realization of this project, the emergence and clash of interests between Iran and Turkey and Qatar have played a major role. It is known that Iran has 31.9 trillion m³ and Qatar 24.7 trillion m³ resources among the proven gas reserves in the world. Most of the reserves of these two countries are in the offshore area known as the South Pars Natural Gas Field, which is shared by Iran and Qatar. According to estimates, Iran's share in this field is 14.2 trillion m³, while Qatar's share is 25.4 trillion m³, the total gas reserve of the field is more than the total gas reserve of Russia (SD Enstitüsü, 2019). Turkey has aimed to be the main hub in similar projects in energy trade in the region, however, Turkey's neighbours, the European Union and the United States opposed to this aim. For example, after Ankara conducted maritime exercises with 102 ships in the Mediterranean, Aegean and Black Sea regions in early March 2019, Western countries openly opposed the actions of the Turkish authorities and asked Turkey to “respect for the sovereign rights of Cyprus in its exclusive economic zone and avoid such illegal acts” (Захаркин, 2019). In response, Ankara took an unexpected step and turned to Russia for support. Thus, in July 2019, it was determined that the Russian oil company would drill in the eastern Mediterranean

in the near future. The media also reported that Ankara plans to use the S-400 not only to close the Syrian border but also to control the Cyprus skies' (Захаркин, 2019).

3. ISRAEL

In the early 2000s, by connecting the Baku-Tbilisi-Ceyhan Pipeline to the Aqaba Gulf and the Red Sea by passing south through the "Levantine Energy Corridor" along the Israeli controlled waters; It was mentioned that Central Asian oil and natural gas has been changed for strategic purposes and re-exported to Asian markets. Thus, with this project under the military protection of Israel; The role of Russia in Central Asia would be weakened, the direct connection of Central Asian oil to China would be broken and Iran would be isolated (Balkaş, 2011). The US-owned Noble Energy company, with its Israeli partners, has discovered major natural gas fields such as Tamar and Leviathan, and as a result of the studies carried out, in 2009, Tamar site with a reserve of 280 billion m³ was found 90 kilometers from Haifa. In 2010, the Leviathan field was discovered with a reserve of 600 billion m³, 130 kilometers away from Haifa, and at a depth of 1,500 m. Exports from natural gas fields discovered in the country's sea areas are limited to 40 percent by the Supreme Court of Israel (SD Enstitüsü, 2019). Tamar field discovery; In January 2009, it was performed with Tamar-1, which was excavated 90 km from the shore, with a water depth of 1676 m and a final depth of 4900 m. The natural gas reserve is 280 billion m³. The first commercial natural gas sales from Tamar which is the largest deepwater natural gas field discovered globally in 2009, took place on April 1, 2013, after field development operations lasting four years (Balkaş, 2019). Israel, which opened Tamar natural gas field to production in 2013, provides a certain part of its electricity supply from the natural gas. Thus the 41 percent share of natural gas in electricity production increased to 44 percent in 2014 and raised the Eastern Mediterranean reserves to an important position in meeting the electricity needs of Israel (Karagöl & Özdemir, 2017). In Israel, which met about 30 percent of its energy from natural gas in 2015, the share of oil was 43 percent and the share of coal was 26 percent. Israel provided more than 50 percent of its electricity production from natural gas from the Tamar field (EIA, 2017). The Leviathan field was excavated 130 km away from Haifa, 47 km southwest of Tamar, under the license of Rachel and at a depth of 1645 m. 622 billion m³ natural gas reserves have been determined at different intervals under salt (Balkaş, 2019).

4. CYPRUS

In the Cyprus case, American Noble Energy found 129 billion m2 natural gas field at the aphrodite field in block 12, located 160 kilometers south of Limassol and 30 kilometers west of the Leviathan field. Also, the Italian company ENI announced in 2018 that it discovered a natural gas field with a reserve of about 169-226 billion m³ in the Calypso field at the southwest of the island of Cyprus, at a depth of 3,827 meters. However, these sites friction with the regions where the Turkish Republic of Northern Cyprus has granted a search license to TPAO. Exxon and Qatar Petroleum announced that at the end of February, they detected a natural gas reserve between 142 and 227 billion cubic meters in the field named Glaucus-1 (SD Institute, 2019). Looking at the energy profile on the island, it can be seen that the South and North sections are very similar. Both sections use oil and their products at a very high rate and import these resources. The dependence of both the Republic of Cyprus and the TRNC on imported energy is around 90 percent (Karagöl & Özdemir, 2017). In this regard, both countries will continue to struggle for energy resources in the region in the future.

5. LEBANON

In the seismic surveys conducted in 2012, the gas potential of Lebanon in the No 1 region was determined as 700 billion m³. In February 2018, a consortium belong to France's Total, Italy's ENI, and Russia's Novatek companies were given oil exploration and extraction permits in two

of the 10 blocks located in the sea area of Lebanon. However, Israel's Defense Minister Avigdor Liberman, who claimed rights in the region, declared that Lebanon did not give permission for oil exploration and he claimed that "This continental shelf belongs to us within all standards" (SD Enstitüsü, 2019). Lebanon, which does not have any proven hydrocarbon reserves in its offshore and near shore areas, meets most of its energy demand from imported sources and makes use of renewable energy sources such as biogas and hydraulics. When the energy profile of the country is analyzed, it is seen that approximately 99 percent of the total electricity produced in 2014 is obtained from petroleum products and the remaining 1 percent from hydraulic energy. In other words, Lebanon, which produced 17 thousand 952 GWh of electricity in 2014, provided 17 thousand 759 GWh of it from power plants producing petroleum products and 193 GWh of it from hydroelectric power plants (International Energy Agency, 2014). These figures clearly show how little the country has benefited from its own resources, renewable energy sources, and how much it depends on imported energy products.

6. EGYPT

Natural gas discoveries in the Eastern Mediterranean began in Egypt's submerged stretch of the Nile and in shallow waters and continued in relatively deep and deeper waters. The first discovery was made by Phillips Petroleum in 1969 in the Abu Qir 1 NFW well. Ongoing calls to companies were made by companies such as AMOCO, BG, BP, Eni, and Shell. Today, it reaches the land with production pipelines made from over 100 gas and wet gas fields discovered in the sea area of the Egyptian Nile Delta (Balkaş, 2019). Research conducted by many international companies and consortia for many years played an important role in the emergence of Egypt's energy resources and the start of production. Finally, in 2015, Egypt estimated to have approximately 42.5 billion cubic meters of natural gas reserves in the Atoll field, which was discovered as a result of the drilling operations in the east of the Nile Delta (BP Global, 2016). It is expected that Egypt starts production in 2018 at this site located off the Damietta terminal (Egypt Oil & Gas, 2016). Egypt, which is in search of new alliances in the Eastern Mediterranean, is aware that the natural gas discoveries in the region are vital for itself and are attempting to evaluate existing reserves. Moreover, Egypt has signed a preliminary agreement with the Republic of Cyprus on forward-looking natural gas projects on August 31, 2016. According to the agreement, it is planned to move the gas from the Aphrodite field to Egypt (Karagöl & Özdemir, 2017). In order to prevent the increasing demand for natural gas to be faced with supply cuts, Egypt tries to take advantage of the existing opportunities and tries to form an alliance with other reserve countries in the region.

7. LIBYA

Libya, whose economy is heavily dependent on the hydrocarbon industry; According to the International Monetary Fund (IMF), it provides 95 percent of its export revenues in 2010 from here. Libya has the largest oil reserves in Africa (46.4 billion barrels). Natural gas reserves are close to 55 trillion cubic feet (Oil and Gas Journal - OGJ). Despite some uncertainties in regulations and agreements, international oil companies increased their hydrocarbon exploration and production investments. Nevertheless, the increase in foreign investments slowed down due to reasons such as OPEC quotas, infrastructure limits such as additional pipeline capacity required for export, and forcing the existing contracts to be renegotiated in 2005 as a result of the EPSA-IV (Search and Production Sharing Agreement) license tender.

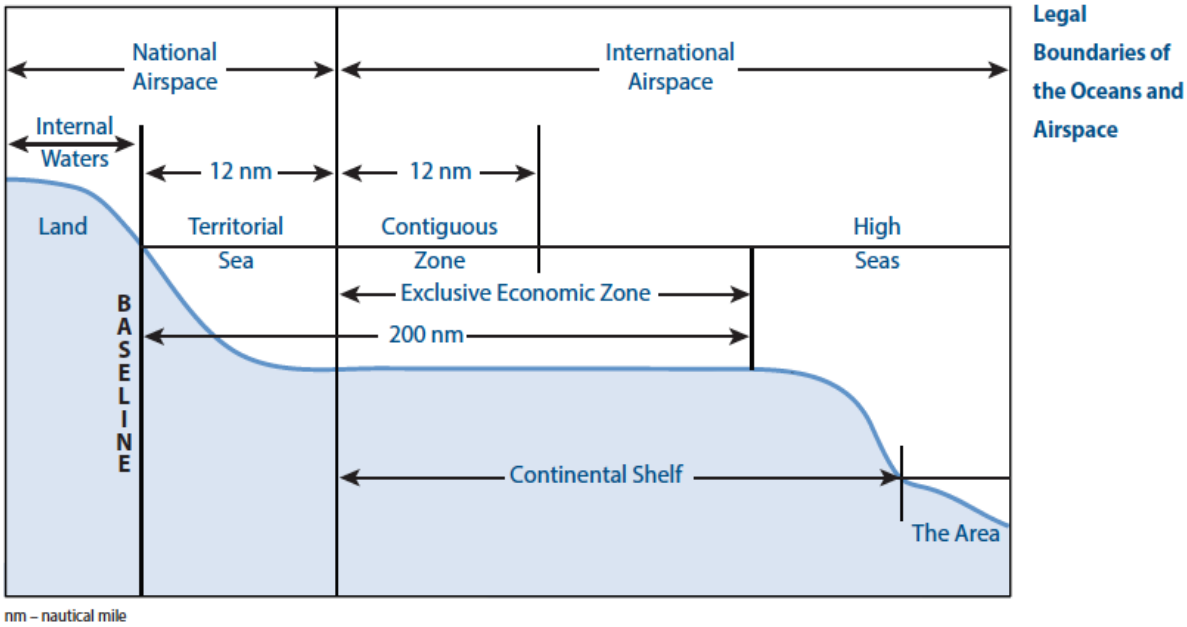
The refinery sector of Libya has been affected by the UN embargo impeding imports of equipment, and the entire refinery industry needs comprehensive improvement. The Libyan oil industry is operated by the state-owned National Oil Corporation (NOC). In 2009, 24.4 billion cubic feet of LNG was exported to Spain from the LNG facility in Marsa el Braga. The income from natural gas in 2009 is around $ 3.8 billion (Balkaş, 2011).

It is possible to say that Libya is a state hanging from the oil industry. It can be said that Libya is dependent on the oil industry.

8. UNCLOS (UNS CONVENTİON ON THE LAW OF THE SEA)

The Marine Law Convention concluded with the UN negotiations between 1973 and 1982; determines the rights and obligations of countries to use the oceans of the world. It establishes the main principles for the management of the business, environment, and natural resources in the seas. The Convention, which opened for signature on 10 December 1982, came into force on 16 November 1994 (one year after Guyana became the 60th country signing) after the 60th ratification certificate was issued.

Table 1: UNCLOS (UNs Convention on the Law of the Sea



Its territorial waters cover an area of 12 nautical miles (22 km) from the shore. Countries with coasts in their territorial waters are free to make laws, regulate the use, and use any resource. However, it can never exceed a distance of 350 nautical miles (650 km) from the shore border or 100 nautical miles (190 km) beyond the 2500 m water depth limit. Countries with coasts, excluding others; have the right to use minerals and inanimate materials in the underground part of the continental shelf (Exclusive Economic Zones). Exclusive Economic Zones covers an area expanding 200 nautical miles (370 km) from the reference line on the edge of the inland sea or territorial waters. A country with a coast in this area has unique operating rights over all natural resources. If a country has a small rocky owner in the ocean; the operable surface of this rock increases from 0 to 430 000 km² offshore on land. If EEZs overlap, the determination of the actual sea borders is at the discretion of the countries covered. The UN does not have a direct operational role in the implementation of the Convention.

9. CONCLUSION

The energy corridor, which extends from the hydrocarbon-rich Middle East to Europe with limited resources, also includes the Eastern Mediterranean basin where the most important energy discoveries have been made in recent years. Located in the center of the mentioned regions, the Eastern Mediterranean region has attracted the attention of the international public with the natural gas reserves that have been discovered and waiting to be removed in recent years.

The Arab world, Africa, and Turkey Located in the middle of the triangle is believed to have about 3.4 trillion cubic meters of natural gas in this basin. Israel, located in the Arabian Peninsula, Egypt in the African continent and the Republic of Cyprus in the Mediterranean, plays an important role in the work carried out in the region. It is thought that the natural gas fields discovered in the region have the potential to benefit both reserve owners and energy-demanding countries. For a long time, it will be beneficial for the reserve countries and also for the other countries in the region. However, in order to achieve this, it is not possible for the countries hosting discoveries to work alone. It is controversial that these countries in question have economies to undertake natural gas extraction and production costs. For this reason, the regional countries and the nearby geography and energy companies operating at an international level are needed both technically and financially. Therefore, it is essential to cooperate with the win-win principle so that all parties can achieve an advantageous situation. By putting the fields discovered in the region into production, the economies of the countries that have these reserves will be improved and the diversity of suppliers will be increased for countries with high natural gas demand and aiming to increase energy security. It is also thought that improving the unstable economies of reserve countries will contribute to the welfare of the region in general and help create an environment of trust. But Israel, Cyprus, and Greece's policies appear to be at odds with those of other countries, and this will be dangerous for the region.

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EMISSIONS AND WASTE IN THE CONDITIONS OF SUSTAINABLE DEVELOPMENT: SEARCH FOR THE ECOLOGICAL BALANCE

Sadiq Binyamin Oqlu Nazaraliyev
Assistant professor at Department of "Theoretical and practical economy", Azerbaijan State University of Economics (UNEC), Baku, Azerbaijan
naz-sad@rambler.ru

Baranova Alla Fedorovna
Vladimir state University named by A. G. and N. G. Stoletovs, Legal Institute named by M. M. Speransky, Vladimir, Russia
afbaranova@gmail.com

Pogodina Irina Vladimirovna
Vladimir state University named by A. G. and N. G. Stoletovs, Legal Institute named by M. M. Speransky, Vladimir, Russia
ipogodina@vlsu.ru

Mamedov Sabir Niyazovich
Vladimir state University named by A. G. and N. G. Stoletovs, Legal Institute named by M. M. Speransky, Vladimir, Russia
sabir-40@mail.ru

ABSTRACT
Urbanization has affected the environment and climate around the world, causing global warming. The growth of industrial production and uncontrolled consumption of natural resources upsets the ecological balance. The above does not contribute to the sustainable and harmonious development of society. The authors of the article are based on the axiomatic thesis that the continuous increase in the amount of waste and emissions causes serious global concern about the environmental situation, including in Russia. It is necessary to take serious measures in this area and change the approach to waste management in order to achieve ecological balance. The article used deterministic environmental, social and economic indicators. The assessment was carried out according to the period from 2007 to 2016. Open landfill is a common waste management practice in most Russian cities. This practice poses significant risks to the environment and human health as a result of emissions of toxic and greenhouse gases generated after direct burning and / or decomposition of waste. The article discusses various scenarios of waste management in Russia. It is concluded that an integrated approach to waste management minimizes the negative consequences of waste disposal.
Keywords: *Sustainable development, Anthropogenic emissions, Greenhouse gases, Changing of the climate, Industrial and municipal waste, Greenhouse gas emissions in the waste sector*

1. INTRODUCTION

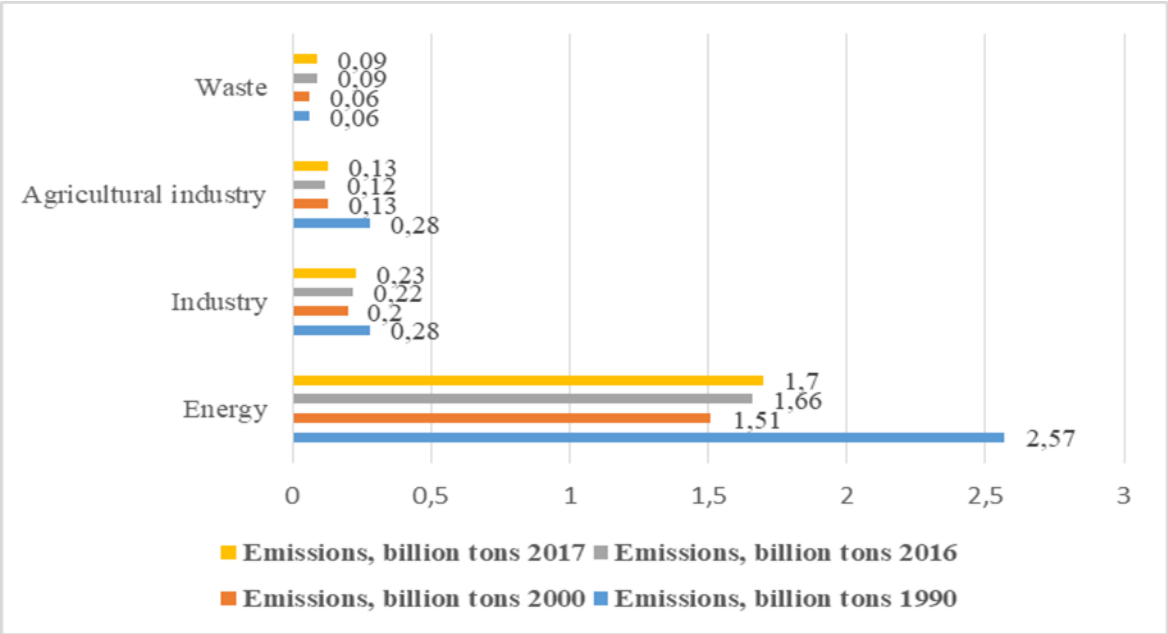
The growth of industrial production is accompanied by uncontrolled consumption of natural resources, which are the basis of any economic system. The current type of economic development is characterized as technogenic (nature-intensive), consisting in the rapid depletion of non-renewable natural capital (minerals), beyond the exploitation of renewable resources (soils, forests, water, etc.) at a rate exceeding the possibilities of their natural reproduction, growth in waste volumes production and consumption, exceeding the assimilation capabilities of the natural environment. While maintaining the technogenic type of economic development, global environmental problems are possible: a shortage of raw

materials, fresh water, pollution of the world's oceans, a decrease in biodiversity, aridization, global climate change (MGEIK, 2014). Energy, industrial processes, forestry and agriculture and other human activities are accompanied by greenhouse gas emissions and affect climate change. According to experts, the increase in greenhouse gas emissions is caused mainly by economic growth and population growth on the planet. Cities are the main source of greenhouse gases, their share is more than half of all anthropogenic emissions (While, Whitehead, 2013; Folberth, Butler, Collins, Rumbold, 2015; Satterthwaite, 2008). Currently, 55% of the world's population lives in cities, by 2050 this indicator will reach 68%. The world's urban population has increased from 751 million in 1950 to 4.2 billion in 2018. In a report for 2018, prepared by the population department of the UN Department of Economic and Social Affairs, it was noted that, according to forecasts, by 2050 the number of urban population in India will increase by 416 million, in China - by 255 million, in Nigeria - by 189 million. By 2030, there will be 43 megalopolises with a population of more than 10 million people. Currently, one in eight people lives in 33 megacities around the world, about half of the world's urban residents live in cities with a population of less than 500,000 people. However, some of the fastest growing metropolitan areas are cities with less than 1 million people, many of which are located in Asia and Africa (Departament…, 2020). As the world continues to urbanize, sustainable development increasingly depends on the effective management of cities. Today, cities have become hot spots of human economic activity. In this regard, it is necessary to solve problems with the power system, housing, transport, infrastructure, uncontrolled growth of production and consumption waste, etc. A large number of research papers are devoted to the influence of megacities on the composition of the atmosphere and climate. The Panel of Experts on Climate Change (IPCC) suggests that it is not cities, but mining, agriculture, deforestation, and others that are the main sources of emissions. Other sources claim that cities are responsible for 78-80 % of global greenhouse gas emissions. In aggregate, cities give a greater percentage of emissions and affect global warming, since it is precisely in cities that industrial enterprises, power plants, transport, and landfills are concentrated. New relationships must be built between people and nature, as climate change and the loss of biodiversity threaten progress. The more greenhouse gases in the atmosphere, the higher the average temperature of the planet. The international scientific community recognized that the reason for the increase in climate temperature is an increase in the content of greenhouse gases in the atmosphere: first of all, carbon dioxide (CO2), methane (CH4), their effects, together with the effects of other anthropogenic factors (nitric oxide NO2, hydrofluorocarbons, perfluorocarbons, sulfur hexafluoride (SF6)), are the main cause of warming (probability of more than 95%) (Postanovlenie…, 2019). Over the past 7 years, total global CO2 emissions increased by two percent by 2018 and reached 33.9 billion tons (data from the BP Statistical Review of World Energy).

2. FINDINGS

In recent years, relative stability of anthropogenic greenhouse gas emissions has been observed in Russia, emissions are accounted for in the following sectors: energy (fuel combustion, energy industry, manufacturing and construction, transportation, etc.), industrial processes (mining and industrial products, chemical industry, metallurgy etc.), agriculture, waste (removal of solid waste in the soil, waste water treatment, waste incineration, etc.) and more. In 2017, about 80 % of all greenhouse gas emissions in Russia (excluding land use and forestry) were in the energy sector. Figure 1 shows emissions in comparison with 1990, 2000. and for the period 2016-2017. The energy sector provides a significant amount of greenhouse gas emissions - 1.7 billion tons in 2017 and 1.6 billion tons in 2016. The share of industrial emissions over the period under review has insignificant fluctuations from 0.2 billion tons in 2000 to 0 , 22 billion tons in 2017 billion tons in 2016 and 0.23 billion tons in 2017, respectively.

In agriculture, the main source of NH4 released into the atmosphere, there is a gradual decrease in greenhouse gas emissions. According to the Ministry of Agriculture of the Russian Federation, the reduction in emissions in the industry is associated with a reduction in sown areas with a decrease in the number of livestock, as well as a change in the norms of input fertilizers and an increase in the efficiency of production in agriculture (Gosudarstvennyj doclad …, 2017).



Picture 1: Greenhouse gas emissions by type of economic activity in the Russian Federation, 1990–2017

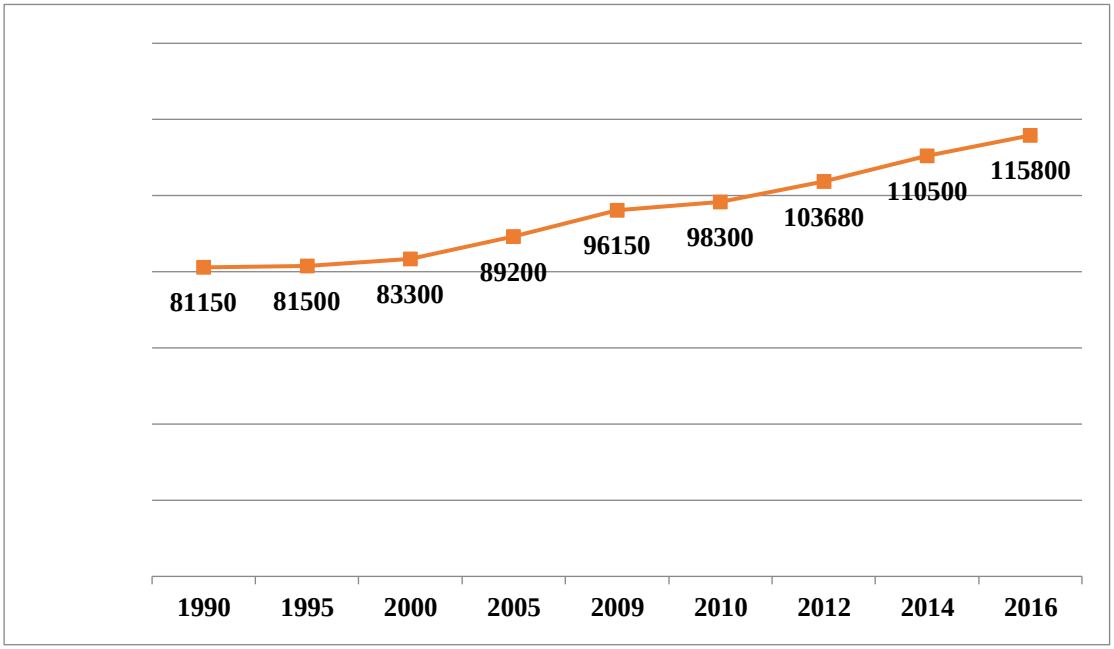
The basic determinants of changes in emissions in the Russian Federation are general trends in the development of the economy (an integral indicator of which is the change in the gross domestic product), changes in the energy efficiency and overall efficiency of the economy of the Russian Federation, changes in the structure of the gross domestic product, and shifts in the structure of the fuel balance. Currently, Russia is in 130th place out of 143 countries in terms of energy efficiency of the economy. The energy intensity of Russia's GDP is more than double that of Canada, comparable with Russia in climatic conditions. Energy efficiency is defined as the number of units of production per ton of standard fuel. The energy intensity of Russia's GDP is 2 times higher than the world average, 3 times higher than in Germany and Japan (Bashmakov, 2018; Bobylev, Zubarevich, Soloveva, Vlasov, 2011). Improving the efficiency of use of fuel and energy, materials is an important factor in the efficiency of the economy and reduce the burden on the environment. Now in Russia, the costs of natural resources and pollution per unit of GDP are 3-4 times higher than in developed countries. It is important to note that not only the export-raw material orientation, but also the high energy intensity, as well as the material intensity of the Russian economy, determine both the inefficiency of its sectoral structure and the complexity of its transformation (Bobylev, Zubarevich, Soloveva, Vlasov, 2011). The Russian Federation produces a large amount of waste due to the use of resource- and waste-intensive technologies for primary processing of raw materials in production. According to the annual information of the Ministry of Natural Resources and Ecology of the Russian Federation, more than 6 billion tons of waste is generated in the country (Gosudarstvennyj doclad …, 2017). In 2018, 94.3% (6850 million tons) of the volume of generated production and consumption waste accounted for such type of economic activity as “mining”.

The total volume of waste in the same year increased by 16.8%, compared with 2017, the extractive sector increased by 18.4%, and the manufacturing sector, by contrast, decreased by 11.3% (Table 1).

	Waste generation, billion tons	
	2017	2018
Agriculture, forestry, hunting, fishing	0,04	0,04
Mining	5,79	6,85
Manufacturing	0,27	0,24

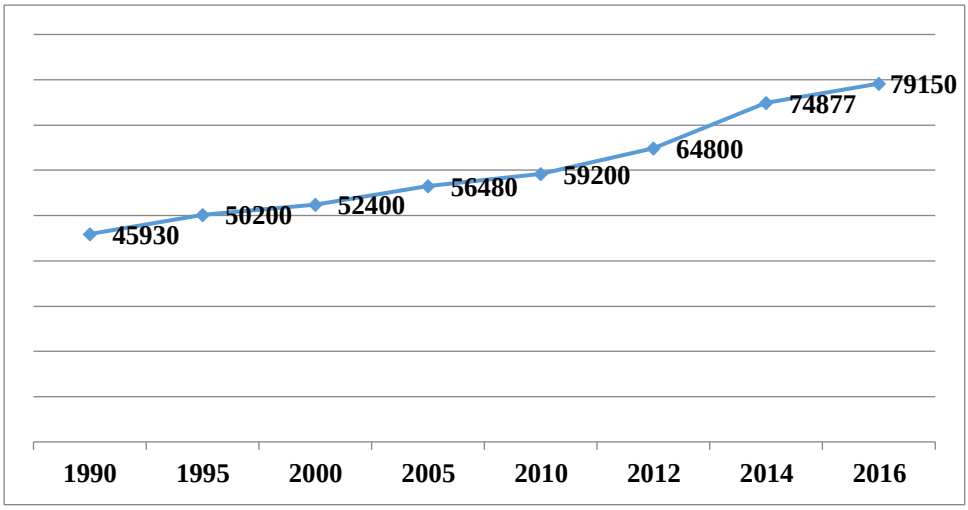
Table 1: Distribution and dynamics of generation, consumption and production waste, 2017–2018

The contribution of the waste sector in the total greenhouse gas emissions is insignificant and amounts to no more than 3% of the total greenhouse gas emissions excluding land use and forestry, and increased by 37.3% compared to 1990. In the Waste sector, greenhouse gas emissions are accounted for: CH4 from the disposal of solid municipal and industrial waste in landfills and landfills; CH4 and N2O from biological waste treatment; CH4 from the treatment of utilities and industrial wastewater. The dynamics of greenhouse gas emissions in the Waste sector in the Russian Federation from 1990-2019 shown in Figure 2, during this period, the amount of emissions increased by 42% from 81,550 (Gg CO2-eq) to 115800 (Gg CO2-eq) in 2016.



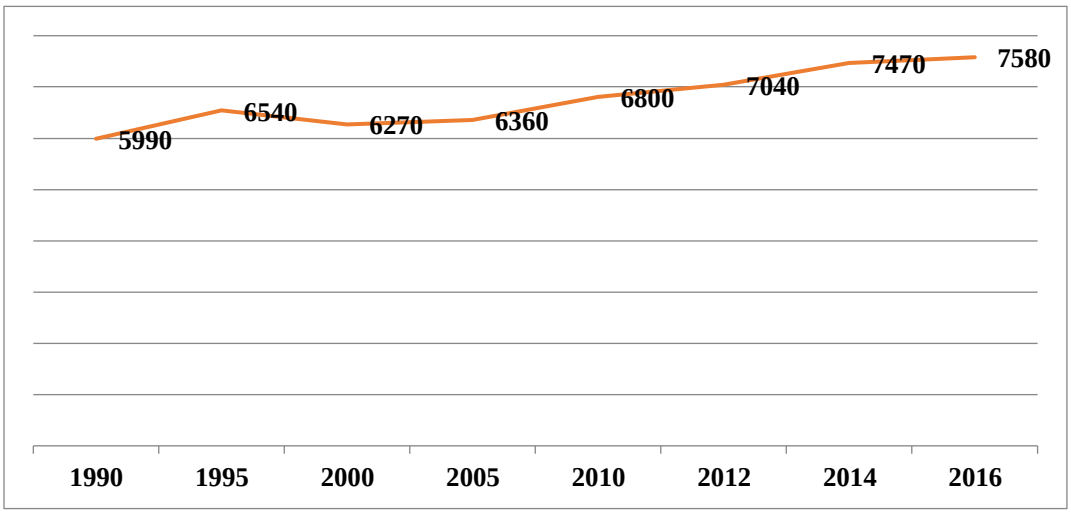
Picture 2: Dynamics of greenhouse gas emissions in the "Waste" sector 1990-2016 (Gg CO2-eq.)

The increase in greenhouse gas emissions from the disposal of municipal solid waste (MSW) in 2016. Compared to 1990, it amounted to more than 70 %. This source makes the largest contribution to the total greenhouse gas emissions from the Waste sector. Therefore, while maintaining the trends of waste accumulation in landfills and landfills, emissions will continue to increase. Dynamics of CH4 emissions from municipal solid waste during their disposal at landfills and landfills 1990-2016 (Gg CO2-eq.) in Picture 3.



Picture 3: Dynamics of CH4 emissions from municipal solid waste during their disposal at landfills and landfills 1990-2016. (Gg CO2-eq.)

Landfill gas generated at landfills is the strongest pollutant and is a mixture of methane (35–55%) and carbon dioxide (up to 45%) and water vapor generated during anaerobic decomposition of waste. The danger of landfill gas lies in the spontaneous combustion of the methane contained in it, toxicity and the negative impact on the flora and fauna. The formation of landfill gas is affected by the size of the landfill, the composition of the waste, the age of the burial, the storage conditions of the waste (density, temperature, etc.). Landfill gas can also emit a small amount of hazardous volatile substances (not more than 1%) of organic and inorganic origin into the atmosphere. Basically, these are sparingly soluble substances that come from waste or form at the landfill as a result of chemical and biological processes (vinyl chloride, methyl, ethyl mercaptan, hydrogen sulfide, etc.). In addition, hazardous fractions are often contained in waste. They can have a negative effect on people's health, leading to carcinogenesis (causes cancer), genetic changes, reproductive disorders, changes in immunobiological homeostasis, disorders of the nervous system, etc. All this ultimately reduces life expectancy and worsens the health of the population. Dynamics of CH4 emissions from solid industrial wastes during their disposal 1990-2016 (Gg CO2-eq.) Are presented in Picture 4, data indicate that industrial waste is disposed of and disposed of in enterprises.



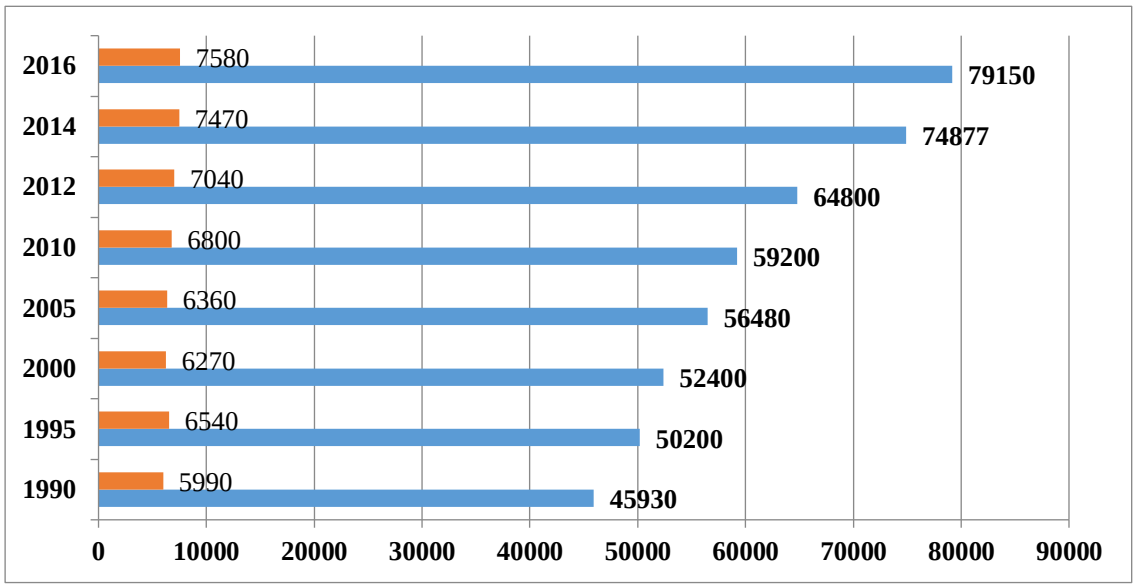
Picture 4: Dynamics of CH4 emissions from solid industrial wastes during their disposal 1990-2016 (Gg CO2-eq.)

Table 2 presents the data on emissions of methane and nitric oxide, from which it follows that from the biological treatment of waste over the study period, the values of emissions vary slightly.

Year	Biological waste treatment	
	CH4 emissions from waste composting (Gg CO2-eq.)	NO2 emissions from composting waste (Gg CO2-eq.)
1990	24	17
1995	36	26
2000	43	31
2005	43	31
2010	41	29
2012	39	28
2014	33	23
2016	24	17

Table 2: Dynamics of emissions of CH4 and NO2 from waste composting in biological waste treatment

The dynamics of CH4 emissions from wastewater of housing and communal services and industrial waters during wastewater treatment, doubled during the study period and amounts to 45930 (Gg CO2-equiv.) And 79150 (Gg CO2-equivalent) in 2016 in 1990.



Picture 5: Dynamics of CH4 emissions from wastewater of housing and communal services and mixed water during wastewater treatment, 1990-2016 (Gg CO2-eq.)

In 2019, Russia acceded to the Paris Agreement of December 2015 (Korotkov, Romanovskaya, 2013). At present, it is planned to prepare a draft federal law "On state regulation of greenhouse gas emissions" and to develop a "Strategy for the long-term development with a low level of greenhouse gas emissions until 2050."

3. CONCLUSION

In the waste sector, it is necessary to continue to develop a universal system for the separate collection and processing of household waste; Legislatively stimulate the implementation of government policy priorities in the field of waste management: reuse and reduce the generation of plastic waste, which will reduce CO2 emissions.

Now 6% of the world's oil is spent on plastic production, in particular, on one-time packaging; abandon the practice of burial of food waste at landfills and landfills, organizing a separate collection with subsequent composting and / or biogas production; increase the rate of the disposal fee for disposable plastic bags, goods, containers and packaging in proportion to the damage to the environment. Waste management should be focused on preparing for reuse and recycling, as well as a ban on recycling activities and, in particular, on waste disposal. All this has been proven in the implementation process over a period of time, for example, in the EU, which is demonstrated by the continuous implementation of a reliable economic, legal and political framework, including, among other things, fines, economic support and expanded producer responsibility.

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FACTORS OF ATTRACTION AND HUMAN CAPITAL ACCUMULATION IN THE FRAMEWORK OF A MACRO-REGION

Mustafayeva Zohra Ismayil
Azerbaijan State University of Economics, Azerbaijan
zohra.mustafayeva53@gmail.com

Glotova Anastasia Sergeevna
Belgorod state University, National research University, Russia
glotova@bsu.edu.ru

Titova Irina Nikolaevna
Belgorod state University, National research University, Russia
titova@bsu.edu.ru

Druzhnikova Elena Petrovna
Belgorod state University, National research University, Russia
druzhnikova@bsu.edu.ru

ABSTRACT

One of the strategic priorities of spatial development is the formation and accumulation of human capital. It is the Foundation of the modern economy. The accumulation and successful functioning of human capital ensures the successful development of a macroregion. Therefore, creating comfortable conditions for the formation and accumulation of human capital is the most important task in developing a strategy for the spatial development of a macroregion. In terms of achieving a high quality of life, human capital is a key asset and ensures the competitiveness of the macroregion. The study identified the main factors of formation and accumulation of human capital. Among them: high fertility and sustained migration; improving the system of education, ensuring the formation of human capital corresponding to the needs of society and the economy; health and longevity; the quality and diversity of cultural life; social support for innovators; flexible labour market; efficient system of assistance to employment and social protection of the population. As a result of the research, an economic and mathematical model was constructed that takes into account interregional differences in the conditions for the formation and accumulation of human capital. Creating comfortable conditions for the accumulation of human capital in the future will help to retain highly qualified specialists and attract young specialists from other regions. This, in turn, will increase the region's investment attractiveness and strengthen its position in global interregional competition.

Keywords: *region, human capital, modeling, cluster analysis*

1. INTRODUCTION

Under the prevailing conditions of intensive economic development, human capital is an important strategic resource for socio-economic development. N. Yarushin and A. Pavkevich note that the socio-economic development of the country and each of its regions is determined by many factors. However, in modern conditions, the determining factor is called human capital (Yarushin et al., 2013). The concept of human development has become widely recognized, which gives the first place to the expansion of human opportunities to realize their potential. In the modern world, investments in education and health care, ensuring freedom and opportunities for all-round creative development of a person become crucial. Regional aspects of the functioning of human capital require more in-depth study.

According to E. Chuchulina, the human capital of the region is a broad and multifaceted concept, so it is necessary to manage all the quantitative diversity of its qualitative characteristics. (Chuchalina, 2014) In order to manage human capital at the regional level, it is necessary to determine and evaluate the factors of formation and attraction of human capital. At the same time, it is necessary to have a tool that is able to comprehensively assess the available human capital with a focus on its effective use and that, if necessary, will quickly offer sources of replacement for the deficit of human capital. Foreign scientists have made a significant contribution to the study of human capital in relation to its accumulation and preservation factors (Becker, 1962; Minser, 1958; Schultz, 1961; and others). Works (Anichin et al., 2018; Donichev et al., 2014; Yarushkin et al., 2013; Terekhin et al., 2014; Zabelina et al., 2013; Petrikona et al., 2016) are devoted to the study of regional development of human capital. However, despite the fact that the history of the theory of human capital is more than fifty years old, theorists and practitioners have not yet developed common approaches to the analysis of the conditions and factors of its attraction, accumulation and effective use. The development of human capital in the regions is determined by the influence of various factors-economic, social, demographic, etc. All of them are in close relationship (direct and reverse) with each other. The different influence of many groups of factors on the formation of human capital is, among other things, the reason for the differentiation of regions by levels of human capital development (Konopatskaya, 2011). O. Donichev notes that the differentiation in the socio-economic development of regions is so great that it is reflected in the indicators that characterize the level of development of human capital in them, which, of course, affects the processes of formation of the interregional economic space and innovative development of territories (Donichev et al., 2014). K. Vlasyuk and p. Stroev, argue that the distribution of the population, and, as a result, human capital, on the territory of the Russian Federation on the one hand, is extremely heterogeneous, and on the other — subject to constant changes (Vlasyuk et al., 2017). Thus, the main task of the research is to identify factors that contribute to the attraction and accumulation of regional human capital, and on their basis to conduct a cluster analysis that allows you to identify homogeneous groups of regions and offer them targeted areas of development.

2. RESEARCH METHODS

The study of the causes and factors of the formation and accumulation of human capital in the context of the macroregion consists of the following stages:

1) Identification of factors that influence the formation and accumulation of human capital in the region.
2) Selection of indicators that characterize the effect of each of these factors.
3) Determining the resulting indicators of the region, taking into account the accumulation of human capital at the regional level.
4) Bringing disparate indicators to a comparable form, through the procedure of standardization (normalization).
5) Integral assessment of the conditions for the accumulation of human capital in the region.
6) Clustering of regions of the Central Chernozem macroregion based on integral estimates.

So, in our opinion, the main reasons for changes in the number of human capital are natural and mechanical factors. Each group of factors includes indicators that can be used to characterize them.

Table following on the next page

Table 1: Indicators for assessing factors of formation, accumulation and use of human capital

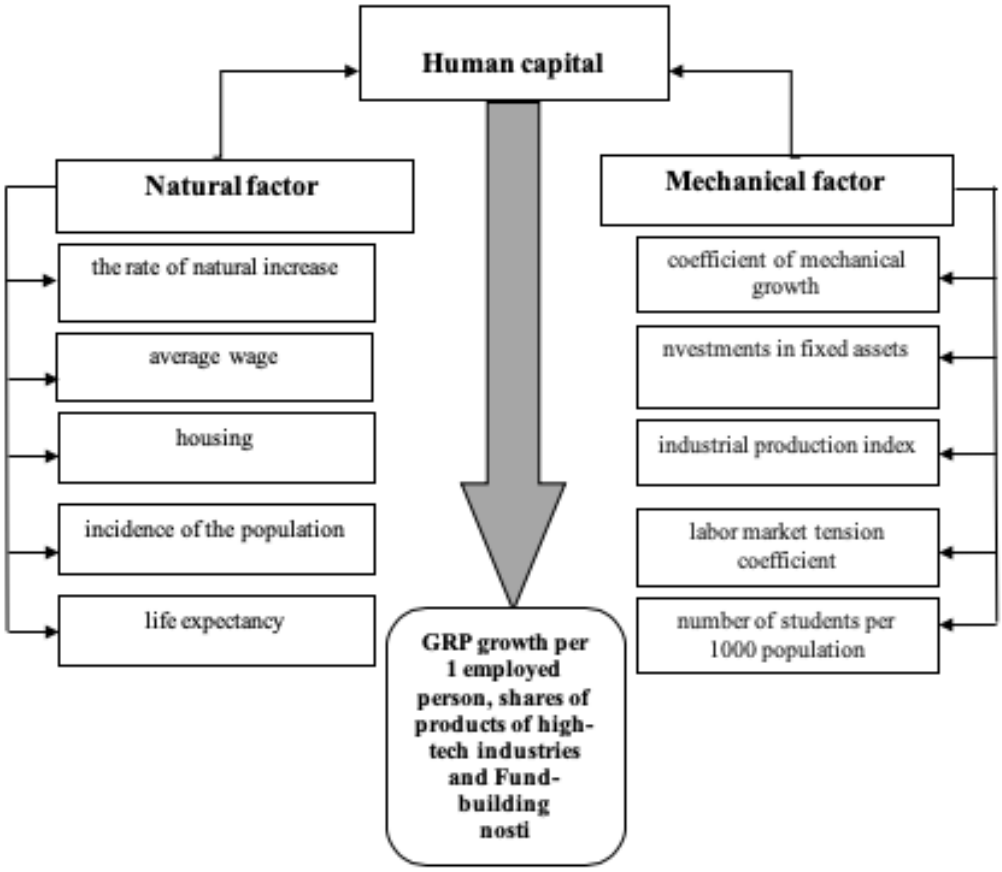
Group of factors		Indicators
Factors of formation and accumulation of human capital	Mechanical	coefficient of mechanical growth, 0/00
		nvestments in fixed assets, million rubles
		industrial production index,%
		labor market tension coefficient
		number of students per 1000 population
	Natural	the rate of natural increase, 0/00
		average salary, RUB
		housing security, m2 per person,
		incidence of the population, per 1000 people
		life expectancy
Factors in the use of human capital		gross regional product per employed person, thousand rubles
		stock capacity, thousand rubles
		volume of innovative goods, works, and services, million rubles

The significance of each factor in the formation and accumulation of human capital in the region can be explained in a thesis:

1) Natural factors include the health of the population, quality and standard of living. Since the preservation of health and longevity are important priorities of the population and the health system, and the quality of life affects the shift of the center of gravity of human capital in the case of a low level and contributes to the accumulation of human capital in the case of a high level.
2) The effect of mechanical factors is explained by the education system, the state of the labor market and the production potential of the region. The education system ensures the formation of human capital that meets the needs of society and the economy. The flexibility of the labor market contributes to the mobility of labor resources, forms human capital, which provides an innovative vector for the development of the region's economy. Production potential determines the conditions for the development of the region and thus contributes to the accumulation of human capital in the region.
3) The Formation and accumulation of human capital in the region contributes to increasing the competitiveness of the territory and thereby increasing economic well-being. Due to the shift of the center of gravity to the person, it becomes important to evaluate the characteristics of factors of human capital accumulation in comparison with the results of its implementation in the region. The level of economic development of a subject is determined using the GRP per employee indicator, which allows you to assess labor productivity in the region and analyze the reasons for changes in this indicator for certain types of activities: changes in production volumes and the number of people employed in the economy. The efficiency of the use of production assets of the enterprise reflects the degree of provision of personnel with basic means of production, the increase of which contributes to the growth of labor productivity. It is important to note that the growth rate of capital-labor ratio must be provided as accumulated human capital, not increasing value of fixed assets. Improving the quality of human capital (scientific potential) of the region contributes to the growth of innovative activity of enterprises by increasing the share of high-tech production.

Schematically, our concept of human capital formation and accumulation is shown in figure 1.

Figure 1: Formation of human capital at the regional level



We will conduct a comprehensive analysis of the accumulation of human capital based on the calculation of integral indicators for groups of factors and resulting indicators. Since the selected components include indicators with different names, it is necessary to bring them to a comparable form using the normalization procedure. Indicators that reflect the potential for human capital formation are characterized by different directions, for example, the tension coefficient is reversed, and a minimum value of this indicator is necessary for a more favorable situation in the region. This aspect was taken into account when normalizing the data:

- for stimulators of human capital accumulation;
- or for destimulation of human capital accumulation;

where - actual value of the normalized indicator, , - the maximum and minimum values of the indicator in all of the analyzed regions.

Table 2: Example of normalized data of the intensity coefficient for the regions of the Central Chernozem macroregion, for 2018

Region / year	2010	2011	2012	2013	2014	2015	2016	2017	2018
Belgorod region	0,87	1	1	1	1	1	1	1	1
Voronezh region	1	0,65	0,64	1	0,89	0,81	1	0,62	0,87
Kursk region	0	0,13	0	0	0	0	0	0	0
Lipetsk region	0,022	0	0,04	0,23	0,24	0,19	0,21	0,35	0,32
Tambov region	0,24	0,17	0,11	0,33	0,5	0,5	0,48	0,49	0,32

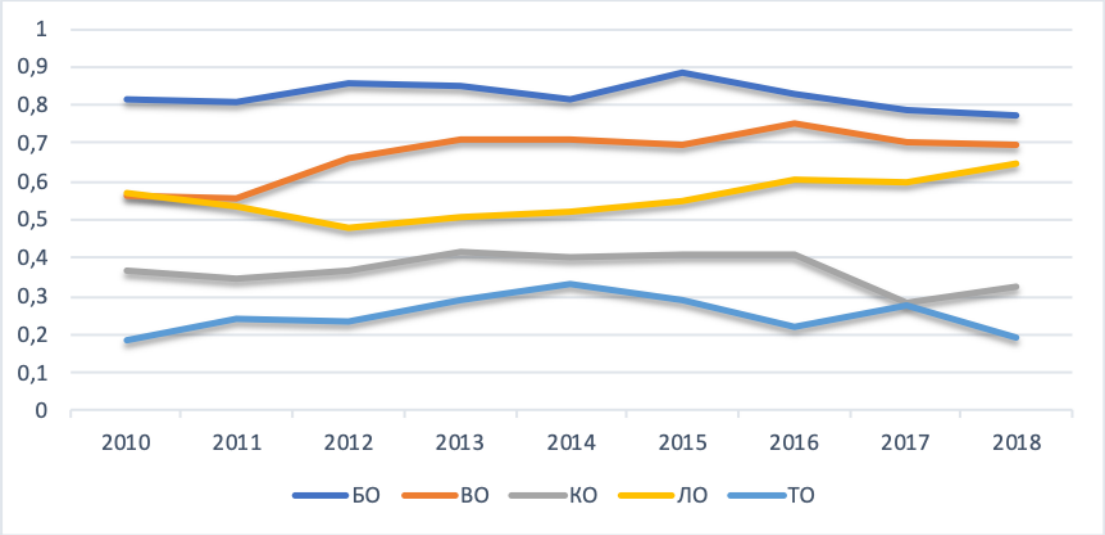
Other indicators were normalized in the same way. Further, for the purpose of a comprehensive assessment of the criteria, the aggregate value for each group of factors was determined using the formula. When determining an integral estimate for a group of factors, it is assumed that all indicators are equal. The calculated integral indicators are shown in table 3.

Table 3: Integrated assessment of human capital accumulation in the Central Chernozem macro-region for 2018

Region / Integral indicator for a group of factors	Integral indicator 1	Integral indicator 2	Integral indicator 3
Belgorod region	1	0,5411053	0,77238202
Voronezh region	0,5846623	0,81778034	0,68458998
Kursk region	0,34268667	0,37891425	0,25834202
Lipetsk region	0,73509004	0,35019533	0,8573918
Tambov region	0,14772727	0,32609983	0,10708523

The dynamics of the combined integral indicator for the study period is clearly shown in figure 2.

Figure 2: Dynamics of changes in the integral indicator of factors for attracting and accumulating human capital in the Central Chernozem macro-region, for 2010-2018



As can be seen in the figure, regions develop heterogeneously, with a high degree of differentiation in terms of human capital assessment criteria. Therefore, for a qualitative analysis of the conditions for the formation and accumulation of human capital, it is necessary to combine regions into groups based on common factors. Next, the study involves conducting a cluster analysis. Since the virtual clustering process allows you to develop typical (basic) strategies addressed to relatively homogeneous subjects of the Russian Federation (Petrikina et al., 2016). We use the data from table 3 to implement the procedure for cluster analysis of the regions of the Central Chernozem macroregion by factors of attracting and accumulating human capital. Clusterization was performed in the SPSS Statistics program using the k-means method. Based on the cluster analysis, 3 groups of regions with similar indicators of attracting and accumulating human capital were identified. The selection of such a number of groups was confirmed by the criteria of significance. As can be seen from table 4, the inter-group variance in all cases exceeded the intra-group variance, and the table value of the Fischer f-distribution is less than the calculated values.

Table 4: Criteria for the significance of clustering regions of the Central Chernozem macroregion by factors of attracting and accumulating human capital in 2018

Integral indicator	The between-group variance	Intra-group variance	F-Fisher criterion
II 1	0,194	0,027	7,172
II 2	0,074	0,01	7,591
II 3	0,214	0,008	28,384

The results of clustering of the regions of the Central Chernozem macroregion are presented in table 5.

Table 5: Central values of normalized indicators of attracting and accumulating human capital by clusters of the Central Chernozem macroregion for 2018

Integral indicator	Clusters			The average for the Central black earth macro-region
	Voronezh region	Belgorod and Lipetsk regions	Kursk and Tambov regions	
II 1	0,68	0,81	0,18	0,536
II 2	0,82	0,45	0,35	0,484
II3	0,58	0,87	0,25	0,562

To determine the strengths and weaknesses of a particular cluster, it is necessary to compare the values of integral indicators calculated for the cluster and indicators calculated on average for the Central Chernozem macroregion. The cluster's strengths will be those indicators that exceed the calculated average for the macroregion, and vice versa. Thus, it is easy to see that the regions of the first cluster have favorable conditions due to the action of natural and mechanical factors, while mechanical factors and the socio – economic level of development of the region affect the attraction of human capital to a greater extent. The regions of the second cluster form human capital through the action of mechanical factors and by ensuring a high standard of living for the population. The regions of the third cluster have a weak potential for the accumulation of human capital. The distribution of strengths and weaknesses for each cluster is shown in table 6.

Table following on the next page

Table 6: Strengths and weaknesses of clusters of regions of the Central Chernozem macroregion by the level of human capital accumulation

Cluster	Regions	Strengths	Weaknesses
Cluster 1 – " Regions with an above-average level of human capital accumulation»	Voronezh region	High life expectancy; low level of tension in the labor market, high migration growth, high scientific potential, growth of the industrial production index, high indicators of investment in fixed assets, a developed health and education system	Low efficiency of use of fixed assets; reduced labor productivity, low innovative activity of enterprises.
Cluster 2 - " Regions with an average level of human capital accumulation»	Belgorod, Lipetsk region	High life expectancy, high level of housing security, high average salary, efficient use of fixed assets	Reduction in the number of enterprises, low level of mechanical population growth, low number of students in educational institutions, tension in the labor market, high incidence of diseases
Cluster 3 - " Regions with a low level of human capital accumulation»	Kursk, Tambov region		Low level of socio economic development, low level of housing security, high mortality rate, negative migration growth, low life expectancy, poorly developed health care system, low employment rate, low number of students in educational institutions

Systematization of the "strengths" and "weaknesses" of these clusters allows us to move on to setting strategic goals for the development of human capital. Note the fact that the first cluster includes only one area of the macroregion – Voronezh. in this regard, it is necessary to develop proposals that would contribute to the development of the region's strengths and improve indicators that characterize the region's weaknesses:

1) increased supply in the labor market due to the influx of migrants;
2) provision of personnel with basic means of production;
3) improving the efficiency of using scientific potential;
4) increasing the scale of regional production;
5) increasing the innovative activity of enterprises by increasing the share of high-tech production.

Given the composition of the "strengths" and "weaknesses" of cluster 2, the goals of the strategy for the formation and accumulation of human capital should be:

1) maintaining a high life expectancy through the development of social policy in the region;
2) improving the quality of the education and health system;
3) creation of additional jobs in the labor market;
4) development of scientific potential;
5) assistance in the development of enterprises, including high-tech ones;
6) formation of favorable living conditions for migrants in the region.

The regions of the third cluster - Kursk and Tambov regions are characterized by unfavorable conditions for the formation and accumulation of human capital, as evidenced by the low indicators of the selected groups of factors compared to the average in the Central Chernozem macro – region. In this regard we should focus on such tasks as:

1) increasing the level of socio-economic development;
2) increasing the birth rate;
3) reducing mortality;
4) ensuring sustainable growth in life expectancy;
5) improving the quality and level of the education system;
6) active development of the healthcare system;
7) increasing the level of employment;
8) creation and development of high-performance enterprises;
9) improving the level and quality of life;
10) development of productive capacity.

3. CONCLUSION

In general, it can be noted that the "problem zone" of formation and accumulation for most regions remains high mortality in comparison with the birth rate, high morbidity in the regions against the background of a poorly developed health system. In addition, the decrease in the number of enterprises causes tension in the labor market and reduces the scale of regional production. In most of the regions under review, there is a decrease in the number of students and the number of staff engaged in research and development, as well as the level of provision of staff with fixed assets. The presence of" problem zones " negatively affects the resulting indicators of regional development: it reduces labor productivity, the efficiency of using fixed assets and the share of high-tech products. Thus, we will focus on the most significant points that characterize the updated needs for the formation of human capital in the regions of the macroregion under study:

1) It is necessary to implement institutional restructuring of the system of higher and secondary special education, including such tasks as: integration of software resources of the educational institutions(through various forms) with the enterprises of real sector of economy; introduction of the dual education system (training in educational institutions and in the workplace).
2) Creating new "points" of economic growth that involve the unoccupied population in the economy and pool resources to ensure a high level of diversity of organizational forms in which these "points" are formed and developed.
3) In addition, we believe that it is necessary to modernize the health system, developing result-oriented medical institutions and ensuring the availability of high-tech medical care to residents of the region, as well as to ensure the safety of the population's living conditions, including their work. The implementation of this direction will contribute to improving the health of the population and the accumulation of human capital in the region.

So, based on a comprehensive assessment of the size of the human capital of the regions of the Central Chernozem macroregion, based on the analysis of factors, summary indicators were formed that allow us to assess the current state of territories, combine them into clusters, and identify problem areas that hinder the socio-economic development of subjects in terms of the formation and use of human capital. The developed method is universal and allows not only to assess the current level of human capital, grouping them, but also to manage the selected factors for its formation and accumulation.

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NEW APPROACHES OF HUMAN CAPITAL MANAGEMENT IN CONTEXT OF EMOTIONAL INTELLIGENCE

Peter Seemann
University of Zilina, The Faculty of Operation and Economics of Transport and Communications, Slovak Republic
peter.seemann@fpedas.uniza.sk

Zuzana Stofkova
University of Zilina, The Faculty of Operation and Economics of Transport and Communications, Slovak Republic
zuzana.stofkova@fpedas.uniza.sk

ABSTRACT
Emotional intelligence can be learned and developed. This paper deals with the characterization of the emotional intelligence, its theoretical aspects and applications in business practice. Presented here is a description of the basic components of emotional intelligence and the importance of the emotional intelligence for the success on the market and gaining of competitive advantage here too. Emotional intelligence is, amongst others, the ability to understand and manage own emotions. Managers with a high degree of emotional intelligence know what they're feeling, what their emotions mean, and how these emotions can affect other people. Feelings are expressed in different ways, for example verbally, by gestures, by behaviour etc. In next section realization and evaluation of the research of emotional intelligence in a particular company was performed and methods and possibilities of active efforts to improve the emotional intelligence of employees and managers were proposed. This survey was conducted on the basis of anonymous questionnaires intended for employees of the company. The conclusion consists of proposals to increase the level of emotional intelligence at the workplace. Based on the implementation of these proposals, the company should record positive changes in the assessment of its situation and market position.
Keywords: *Competitive advance, Emotional Intelligence, Human Capital Management, Manager*

1. INTRODUCTION

The idea of emotional intelligence was first addressed by Peter Salovey and John D. Mayer in 1990, but a breakthrough in the field was Daniel Goleman's book - Emotional intelligence (Goleman, 1995). Goleman described and explained why people with a lower intelligence quotient (IQ) are often more successful than those with a higher IQ, why a higher level of emotional intelligence (EQ) is important, and how it affects employee development and managerial skills (Hubert, 2005). The essence of exploring and measuring emotional intelligence is that people differ in their emotional abilities, and these differences are reflected in their real everyday life. Emotional intelligence not only involves knowing and influencing feelings, but it is also important to be able to express feelings accordingly. Feelings are expressed in different ways, such as verbal, art, gesture, behaviour. In expressing them, however, it is essential to avoid impersonal appraisals and attacks on others, and vice versa, to focus on ourselves and really describe what feelings the situation is giving us. And this applies not only to feelings, but also to the evaluation of others - for example, the work done should not be positively evaluated, but their skill and diligence should be appreciated (Kanitz, 2008).
Emotional intelligence (EI) consists of four basic skills, namely self-awareness, self-mastery, social awareness and relationship management. Self-consciousness and self-control speak of a person, and social awareness, along with relationship management, points to a person's

relationship to other people. (Bradberry, Greavesova, 2007; Micieta, Markovic, Binasova, 2016; Harriet, Valaskova, Durana, 2019). Bar-On (1997) characterized EI as an array of noncognitive abilities, competencies, and skills that influence one's ability to succeed in coping with environmental demands and pressures. In fact, these four basic parts include the ability of a person to know, understand, influence and guide their feelings, but also the ability to express and experience those feelings. One who can handle emotional intelligence should not only perceive and regulate one's own feelings, but also the feelings of others. EI is an important factor in building a career, success in a business or achieving a certain advantage. At present, the level of EI utilization is high, for example in the USA, where research related to emotional intelligence is carried out. The comparison of IQ and EQ is shown in Figure 1.

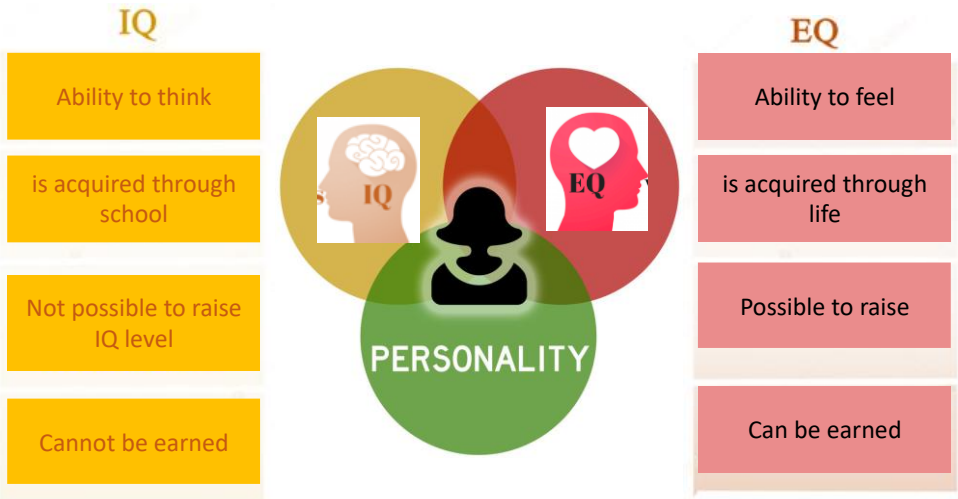

Figure 1: Comparison of IQ and EQ
(Source: author)

EQ tests contain questions that try to capture how people usually behave in certain situations, their reactions to their own and foreign feelings, and interpersonal relationships (Hraskova, Bartosova, 2014). EQ tests contain questions that try to capture how people usually behave in certain situations, their reactions to their own and foreign feelings, and interpersonal relationships. Many surveys show that managers are trying to apply the insights of emotional intelligence research into everyday practice. This shows the importance of its use in the area of employee management. Businesses using it are much more successful in the market. Executives should learn to pay attention to these skills of their employees, to further develop them and to undertake activities for their expansion. It is common for employees to have bad relationships with their employers. Often the reason for these problems is the fact that employers and managers have good professional qualifications but lack the personality skills needed to manage people. And they determine the success of the manager, good relationships in the workplace or the prosperity of the entire company. (Popoola, Alege, Gershon, Asaleye, 2019; Mitchel, Stehel, Kliestik, Kliestikova, Durana, 2019; Belas, Sopkova, 2016). Therefore, people who have high IQs but low emotional intelligence tend to be subordinate to people who, while having IQs a little lower, are extremely clever in interpersonal relationships. This is related to the fact that in everyday life and working with other people there is nothing more important than interpersonal and emotional abilities. To this day, most people are convinced that only the IQ of a person decides on the social and professional application. But research has shown that what really decides the success of entire businesses and the personal engagement of their employees is emotional intelligence, with no trade union differences. EQ values are clearly paramount in terms of job success.

2. DEVELOPING EMOTIONALLY INTELLIGENT ORGANIZATIONS

During the last 20 years, emotional intelligence (EI) has become an increasingly popular topic within the fields of psychology and management (Grandey, 2000; Law, Wong, & Song, 2004; Mayer, Roberts & Barsade, 2008; Valaskova, Kliestik, & Kovacova, 2018). An emotionally intelligent organization is able to solve problems, to cope with expectations and requirements, which are based on the nature of interpersonal relationships, on the organizational structure and working environment. It is, in fact, a summary of the dispersed capabilities of the individual employees of the enterprise itself. Each employee contributes to effective work performance by providing their important knowledge, complementing each other and creating together the character and capabilities of the entire organization. By acquiring and acquiring the skills of emotional intelligence, every person is always opening up new possibilities, thanks to which he can achieve success and give people in his neighborhood freedom for their personal development. The gift of living in one another is a chance to see how the other person feels. It is in relation to the subordinates to whom the manager assigns work tasks that this knowledge is decisive. In fact, employees expect their superiors to be particularly recognized. However, the right managers should also give them a sense of security, understanding and support in overcoming obstacles together. (Prati, Douglas, Ferris, Ammeter & Buckley, 2003). It is for these reasons that emotional intelligence is one of the most important factors affecting the success of not only managers but entire businesses. This is so despite the fact that there are still no well-defined conclusions and methods to support the development of emotionally intelligent organizations, and many people, despite clear evidence, underestimate the importance of this human side. Success, however, does not depend only on the knowledge of the manager or production techniques, success is based on the employees who make up the business. (Zeidner, Matthews, Roberts, 2004; Thory, 2013; Kuc-Czarnecka, 2019)

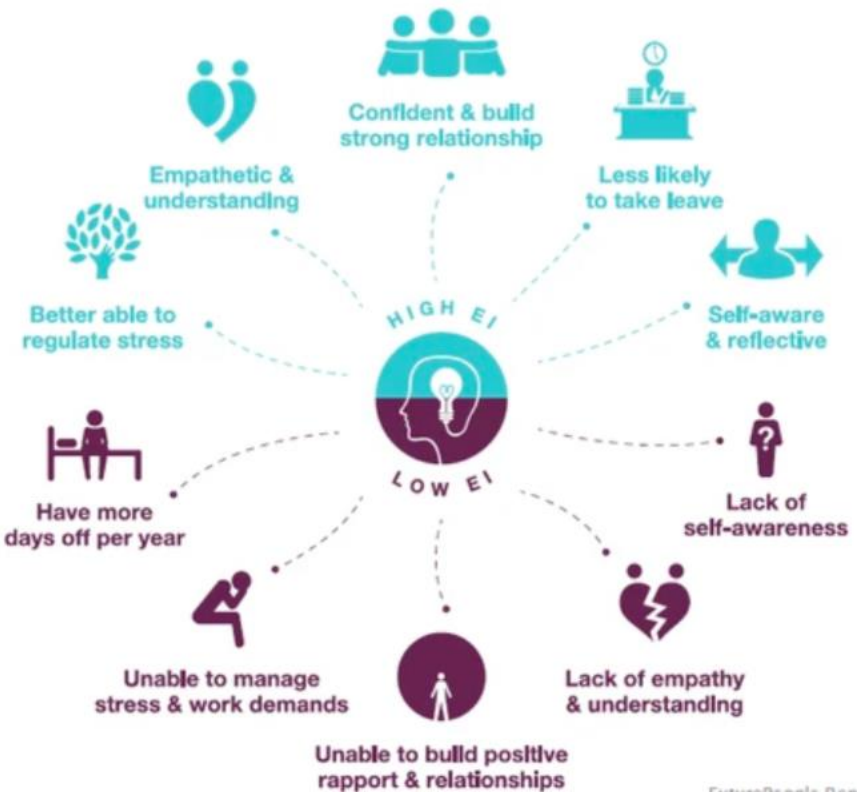

Figure 2: Comparison of low and high emotional intelligence (Source: FuturePeople report, 2016)

In fact, emotional intelligence is twice as important as cognitive ability in predicting outstanding performance. And studies show that emotional and social intelligence accounts for more than 85 per cent of "star performance" in top leaders (Goleman, 1997). Salovey and Mayer (1990), Cherniss, Goleman, Emmerling, Cowan & Adler (1998), and Bar-On (1997) have each made important contributions to our understanding of EI. To better understand how EI might apply to mentoring, we have arranged key points of their definitions into a four-point mixed perspective model that is particularly poignant when thinking about mentoring relationships. These points include EI and the self, EI and others, integration of EI into thought, and assimilation of EI into action and are summarized in Table 1. (Opengart, 2015)

EI and the self	**EI and others**	**EI and thought**	**EI and action**
Develops self-awareness, regulation, and motivation	Possesses self-awareness and management of emotions	Able to reflect on emotions of self and others	Manages emotions Adapts to others' emotional states
Adapts during emotional moments	Possesses self-awareness and management of emotions	Reasons with emotion, Perceives emotions, Understands emotion	Manages stress Controls mood Evaluates emotional situations and identifies effective responses
Learns from social interactions	Exhibits intrapersonal and interpersonal EI	Reflects on emotional states of self and others, both during and after social interaction	Uses situational judgment Selects best responses during conflict
Uses emotions to improve social and interpersonal effectiveness	Gages emotional states of others and adjust behavior accordingly	Uses insights from reflection on emotions to shape future social interactions	Maintains calm Offers support to others
	Shows empathy toward others	Learns from emotional interactions	Helps others identify their emotional states

Table 1: Mixed model perspective of EI
(Source: Opengart, Bierema, 2015)

The increased research and attention to emotions support the notion that emotions are inseparable from everyday organizational life (Ashforth & Humphrey, 1995). Bennetts (2002) suggested that mentors utilize emotions, display emotional maturity, and draw on their EI to be effective. (Grewal & Salovey, 2005), (Sy, Tram, O'hara, 2006), (Kmecova, 2018). Emotional intelligence is a convenient phrase with which to focus attention on human talent. Even though it is simple as a phrase, it incorporates the complexity of a person's capability. (Boyatzis, Goleman, & Rhee, 2000) EI and affect are potential influences of job performance (Cooper & Sawaf, 1997; Goleman, 1998; Reio & Callahan, 2004) and conflict management. Lopes et al. (2011) looked at conflict management in relationships and confirmed the importance of being able to evaluate emotional situations and identify effective responses. The quality of one's relationships can be evaluated along many dimensions: how nurturing and supportive they are, how intimate they are, and how much conflict and antagonism is there (DeVaney, Sepulveda, Anderson, Craun & Barchard, 2012; O'Boyle, Humphrey, Pollack, Hawver, Story, 2011; Drugau-Constantin, 2019 Gerald; Siekelova, Kolencik, 2019).

3. THE RESEARCH OF EMOTIONAL INTELLIGENCE IN A PARTICULAR COMPANY

As mentioned above, emotional intelligence as a factor affecting the personality of a manager in an enterprise that affects the personality of a manager. This section deals with questionnaire survey in selected company. The target group are employees and company executives.

3.1. Methods

The aim of the survey was to determine the level of emotional intelligence of employees and executives in the selected company. The questionnaire contained 17 questions with a choice of answers from the given options, focused on all skills of emotional intelligence. The sample consisted of a total of 50 respondents of different ages. The results show that most respondents (50%) communicate with their supervisor electronically, but personal communication is the ideal way of communicating from an emotional intelligence point of view. The results of the survey showed the emotionally intelligent behavior of the majority supervisors (82%) when evaluating performance and work results in the workplace. Concerning the expression of interest by the supervisor, most respondents (50%) believe that their supervisor is sufficiently interested and supported by them, but over 30% of respondents say that they are interested in them, but it is only at this level. Despite their interest, they perceive a lack of certainty or recognition. Most employees respond to stress, challenges and problems by making them nervous, but this has no effect on their work performance (54%), and the second largest share is employees who take such situations calmly (30%). It is a positive result. Based on the respondents' answers, it is clear that they can freely express themselves in their tasks and in seeking opportunities, while taking them into account. The respondents (60%) answered that the praise is evaluated by the result and not by the ability of the employee who is really behind the result. In evaluating, however, it is important to highlight the person with his or her abilities and not the result of any activity. The mood in the workplace is friendly and calm but they have found it employees who would evaluate it as competitive, insecure or even restless and conflicting.

3.2. Results of survey

Based on the respondents' answers, it follows that emotional intelligence is not completely absent in the selected enterprise, but there are still many areas where it could be increased. Almost half of the questions were answered by percentage as one of the options with the highest level of emotional intelligence. However, even the answers to these questions were not answered unequivocally, with 100% of respondents agreeing on the option. In addition, more than half of the questions were evaluated with the result of lower or even insufficient emotional intelligence of the superiors. For example, the communication between the manager and his subordinates is mostly in electronic form according to the results of the survey. Although we live at a time when most of the activities can be done and furnished with electronics, it is not the right way to communicate in the workplace from an EI ceiling. In this way of communication, the supervisor is not able to adapt his / her requirements to the emotional state of the employee; Also, the employee is not able to read the tone of voice, smile or sight from the electronic command. It is proven that the need for lively contact, empathy and understanding is crucial for the right atmosphere in the workplace, for employee satisfaction and the success of the whole company. Another disadvantage of the survey is that the manager is more reticent and reserved in personal communication with employees. If this is the case, it raises uncertainty for the co-workers and subordinates about the correctness of their performance, the requirements for their work and the feeling of distrust. Assessment is also a major drawback - according to the survey, the outcome is assessed rather than the skills and talents of the employee who provided the outcome. It is necessary to prove to people that their talents and abilities are valuable, that they are valued. Otherwise, people lose motivation at work, always trying to work best as they can. The survey thus reveals some shortcomings in the use of emotional intelligence in the business. The advantage, however, is that the level of emotional intelligence can be successfully raised.

Thanks to properly chosen methods and a suitable way of its development, which is not only a waste of time and money, the company can reach its higher level. He will then be rewarded with higher performance, competitiveness, employee satisfaction and the success of the entire company.

4. CONCLUSION

In this era of globalization where there is high cultural, scientific, economic and social exchange, the success of a person depends on many personal factors (Abi, Jijo, 2012). According to the survey, the business reaches a certain level of emotional intelligence, but that level is certainly not sufficient. The company should provide its employees and managers with an educational program for the development of EI, focusing in particular on effective communication in the workplace. The problem in the company is that there is no personal communication with superiors, that employees do not feel sufficiently motivated and managers use the wrong way of motivation. Other weaknesses include low job satisfaction, an inadequate way of assessing whether or not mistrust of superiors. The fact is that, despite some answers that were evaluated as positive, the evaluation was not entirely clear on any question. The level of EI can and must be constantly increased as it plays an important role for the enterprise. There are a number of ways to increase the level of emotional intelligence of employees and managers. These include various EI development programs, corporate emotional intelligence training to improve work performance, and seminars for managers. New EI-oriented programs are constantly being developed. However, these programs are often incorrectly designed, implemented and even evaluated. For this reason, they are disappointing and wasting energy, time and money. Sample tutorials and scientific benchmarks for EI-oriented programs are set by the Consortium for Emotional Intelligence Research in Organizations. It also has the task of setting out guidelines for education for the development of EI. Consequently, each seminar, training program or training should be based on these core guidelines. In order to achieve maximum success, the training program should include all these benchmarks and guidelines. A specific and reasonably new tool for EI development is focusing. It is aimed at understanding one's own emotional experience. It helps to understand the meanings that are hidden in the body's feelings and thus to gain a means of developing one's own emotional intelligence. Assessment is necessary after the participation of workers in one of the courses or training programs. The evaluation is most often carried out by completing questionnaires distributed to the workers who attended the course. However, this method of evaluation is not very reliable and usually results in a positive course evaluation. However, an objective measurement of work performance before and after the course could be a better evaluation method. In Slovakia, EI development and training courses, coaching, motivational lectures and various training courses, focusing courses for managers and workers are offered. Other educational institutions provide training in effective communication, team building, conflict management, etc.

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ECONOMIC, SOCIAL, AND INSTITUTIONAL DETERMINANTS OF DOMESTIC CONFLICT IN FRAGILE STATES

Syed Muhammad All-e-Raza Rizvi
Université Clermont Auvergne (UCA), Ecole d'Economie, Clermont-Ferrand, France
allerazarizvi@gmail.com

Marie-Ange Veganzones-Varoudakis
Université Clermont Auvergne (UCA), CNRS, CERDI, Clermont-Ferrand, France
veganzones@aol.com

ABSTRACT
In this article, we use Fixed Effect Poisson Regression (FEPR) with robust standard errors to study the economic, social, and institutional determinants of domestic conflict in 58 fragile states over the period 2004 to 2017. We show that effective institutions (measured by judicial effectiveness) and higher incomes would help reduce conflict in these countries. By contrast, democracy would not mitigate violence, democratic experiences generally showing an increase in conflicts in fragile countries. It would also seem that the development of human capacity does not contribute to the reduction of conflict. This would imply that fragile states first improve the social, economic and institutional conditions of their populations before they benefit from political reforms and of education. The same would be true for economic reforms in the context of globalization, which would not help reduce violence in fragile countries either.
Keywords: *Conflict, Fragile Countries, Economic Reforms, Education, Institutions, Democracy*

1. INTRODUCTION

Over the past decade, the Uppsala Conflict Data Program (UCDP) has recorded an upward trend of violence in the world. In addition to human suffering, civil strife causes considerable damage to economies due to its negative effects on public spending, infrastructure, political stability, foreign direct investment, trade, and growth. As a result, while extreme poverty is declining worldwide, it is increasing in fragile countries affected by conflicts. If left unchecked, nearly half of the world's poor will live in fragile countries facing conflict situations by 2030 (World Bank, 2018). Several studies have suggested that armed violence occurs most of the time in countries which have poor social, economic, and political conditions. Collier (2007) states that "seventy-three percent of people of the bottom billion have recently been through a civil war or are still in one". Stewart (2002) notes that most of the economies with the lowest level of human development have been confronted with civil wars over the last three decades. Lai (2007) states that low income levels and high income inequality are positively associated with terrorism. Countries with fragile political conditions are also more vulnerable to domestic violence. Coggins (2015) found that political collapse has a positive correlation with armed conflicts. Newman (2007) and Piazza (2008) confirm that it is easier for extremist groups to establish their organizations in failed states. Economic growth and wealth, however, are not always a source of peace and non-violence in fragile countries, as Caruso and Schneider (2011) explain in their theory of "immiserizing modernization". When growth changes the distribution of wealth, as described by Olson (1963), it can lead to social and political unrest fueled by groups of people who lose from the change. If perceived as a threat, economic reforms may lead to civil unrest as well, as explained by Freytag et al (2011) for globalization. Gur (1970) confirms that when individuals feel economically disadvantaged, they may be willing to fight to change their situation. When inequalities create grievances among the poor, recruiting them to fight the government, in the hope of a better life, becomes easy for extremist organizations.

Rational Choice theory provides an explanation for the emergence of civil conflicts in fragile countries by suggesting that human actions are based on the "calculation of risk, cost and incentive" (Teydas et al, 2011). Similarly, the "opportunity-based approach" indicates that the most important factor in becoming a rebel is the expectation of personal gain or reward (Teydas et al, 2011). Collier and Hoeffler (2004) argue that "rebellion can occur when lost income is low". Freytag et al (2011) suggest that if the opportunity cost of the use of illegal force is high, people will choose material wealth rather than mental reward. In this study, we explore the social, economic, and institutional determinants of domestic conflict in 58 fragile countries. We use the annual number of conflict-based domestic incidents processed from the Global Terrorism Database (GTD) as a proxy for internal conflict[1]. We analyze the development of violence for 4 different groups of countries from 2004 to 2017: (i) Total sample of fragile countries, (ii) Islamic fragile states, (iii) fragile countries with more than one main religion[2], (iv) States affected by major conflicts[3]. These countries were selected from the Fund for Peace (FFP) database, which publishes annually a fragility index for 178 countries around the world[4]. In the empirical part of the study, we show that effective institutions (measured by judicial effectiveness) and higher incomes are well correlated with a reduction of conflicts in the most fragile countries. However, democracy would not seem to mitigate violence, democratic experiences generally showing an upsurge of fighting. It would also seem that the development of human capital does not contribute to the reduction of violence, which would imply that fragile states first improve their social, economic and institutional conditions before they can benefit from the fruits of political reforms and of education of populations. The same conclusion could be drawn for economic reforms in the context of globalization, as trade liberalization does not seem to help reduce violence in fragile countries either. These results are important in the context of the increasing number of conflicts around the world, which undermine progress in improving living standards and reducing poverty in fragile countries (World Bank, 2018). They help to understand the difficulties faced by governments in reducing violence and point to ways for a progressive approach to long-term conflict resolution. The rest of the article is organized as follows. Section 2 presents our model of conflict and defines the variables used in the analysis and the data sources. Section 3 highlights the methodological aspects related to our estimates of violence. Section 4 presents the results of the empirical analysis for our various samples of countries. The last section concludes with our main findings and policy recommendations.

2. PRESENTATION OF THE MODEL AND OF THE VARIABLES

2.1. The Model

The equations used to study the determinants of conflict in fragile states are as follows:

$$Conf_{it} = \alpha_0 + \alpha_1 (GDPc_{it}) + \alpha_2 (Edum_{it}) + \alpha_3 (Open_{it}) + \alpha_4 (Pop_{it}) + \alpha_5 (Contracts_{it}) + \alpha_6 (Demo_{it}) + \varepsilon_t \quad \text{Eq (1)}$$

$$Conf_{it} = \alpha_0 + \alpha_1 (GDPc_{it}) + \alpha_2 (H_{it}) + \alpha_3 (Open_{it}) + \alpha_4 (Pop_{it}) + \alpha_5 (Contracts_{it}) + \alpha_6 (Demo_{it}) + \varepsilon_t \quad \text{Eq (2)}$$

Where *Conf* is the count data variable for measuring conflict, *GDPc* the logarithm of real GDP per capita, *Edum* the average years of education, *H* the human capital index, *Open* the indicator of trade openness, *Pop* the logarithm of population, *Contracts* the proxy for judicial

[1] https://www.start.umd.edu/data-tools/global-terrorism-database-gtd .
2 Countries where more than 10% of people belong to a different religious group
[3] Countries having had at least 5 conflict-related incidents per year for at least half of the period studied
[4] https://fragilestatesindex.org/data/ .

effectiveness, and *Demo* the democracy variable. *i* is the cross sections index, *t* the time dimension and $\mathcal{E}$ the error term. $\alpha 0$ to $\alpha 6$ are the parameters to estimate.

2.2. The Variables

2.2.1. Annual Conflict-Based Domestic Incidents as Proxy for Internal Conflict

We have processed our proxy for internal conflict from the Global Terrorism Database (GTD, 2018). The conflict-based incidents in the GTD codebook are defined as "the threatened or actual use of illegal force and violence by a non-state actor to attain a political, economic, religious, or social goal through fear, coercion, or intimidation". The time period for the annual data is from 2004 to 2017).

2.2.2. GDP per Capita as Proxy for Income and Wealth

The empirical evidence for the impact of income and wealth on internal conflict yields mixed results. Some of the literature finds poverty and low income a cause of violence. Humphreys (2003) indicates that low resources increase the likelihood of civil wars. Collier and Hoeffler (2004) show that low incomes increase domestic conflict. By contrast, Caruso and Schneider (2011) find a positive relationship between increased income and the number of people killed in conflict-based incidents. Freytag et al (2011) confirm that there is a positive correlation between increasing GDP per capita and increased violence. Piazza (2008) however does not find a significant association between the two variables. In this study, we hypothesize that economically disadvantaged people in fragile states develop grievances against their government, and that poor economic conditions make violence more likely because direct costs (including rebels' recruitment) and opportunity costs are low. GDP per capita is our measure of income and wealth. The data comes from WDI (2017). The study uses the logarithm of the variable in real terms. In line with one part of the literature, we expect a negative influence of this variable on our variable of conflict.

2.2.3. Effective Judiciary as a Proxy for Deterrence

Countries with fragile institutions are vulnerable to violence (Basuchoudhary and Shughart 2010). It is easier for extremists' groups to operate in states where institutions are weak (Newman, 2007, Piazza, 2008). If the justice system is effective and the penalties are perceived as fair, the threat of punishment can change the behavior of individuals. Freytag et al (2011) state that the possibility of punishment is a cost to opponents. Dezhbakhsh et al (2003) confirm that the likelihood of punishment leads to a decrease in crime in a country.

We use the "Time for Enforcing Contracts" variable from the "Doing Business" database as an indirect indicator of the ineffectiveness of the judiciary. If the judiciary punishes in a timely manner, the population will be reluctant to use violence. In this study, we expect a positive impact of the judicial ineffectiveness variable on conflict.

2.2.4. Education and Human Capital as Proxy for Human Development

Human development might be seen as a way to lessen violence by reducing people's grievances (Kurrild-Kitgaard et al, 2006). Educated people may also use critical thinking to reject extremism (Ghosh et al, 2017). Educated people have as well more opportunities to improve their economic and social situation (Berrebi, 2007), thus increasing the opportunity cost of conflict (Freytag et al, 2011). At the empirical level, Hamilton and Hamilton (1983) note that illiteracy is positively correlated with armed violence. Collier and Hoeffler (2004) highlight the negative impact of education on conflict. Brockhoff et al (2015) however, show that in countries where social, economic, political, and demographic conditions are unfavorable, education can exacerbate discontent if access to education does not translate into the expected better life. In addition, extremists' groups may have an interest in recruiting educated people, as this can

increase the chances of success of their activities, as well as contribute to a better image for their propaganda in the media (Krueger and Maleckova, 2003). We use two different indexes for human development as explanatory variable for conflict: (i) The average number of years of schooling of population aged 25 or older from the United Nations Development Program (UNDP)[5]; (ii) The Human Capital index of the Penn World Table (PWT 9.1, Feenstra et al, 2015)[6]. In accordance with part of the literature, we assume that education provides people with more economic opportunities that increase the opportunity cost of using illegal force, as well as a level of knowledge that encourages them not to choose violence. A negative sign in the equation is therefore expected.

2.2.5. Trade Openness as Proxy for Economic Reforms

The influence of economic reforms on violence is another dimension studied in the literature. Trade reforms can be a factor of growth and modernization of the economy. New opportunities created by trade can reduce the discontent of the population and increase the opportunity cost of violence, thus reducing the risk of civil unrest. Blomberg and Hess (2008) and Kurrild-Klitgaard et al (2006) find an inverse relationship between trade openness and the use of illegal force which would confirm that reforms can help reduce violence. Another part of the literature, however, emphasizes the destabilizing effect of economic reforms. Caruso and Schneider (2011) state that reforms can reduce the wealth of some stakeholders. In this case, reforms can lead to political and social unrest fueled by groups of people who lose or fear losing because of change (Gaibulloev and Sandler, 2019). In this study, we assume that trade openness reduces violence and promotes a country's development. A negative relationship with conflict is thus expected. We use the ratio of exports plus imports to GDP (in real terms), as proxy for trade reform and globalization. The data are from National and International sources.

2.2.6. Democratic Accountability as Proxy for Democracy

The impact of the political regime on violence and civil unrest in a country is another dimension whose empirical evidence is contradictory. Some of the literature emphasizes that democratic regimes allow people to express their demands and be heard, thereby reducing the grievances they may have towards the government. This is the case of Li (2005) who highlights a positive relationship between democracy and the absence of violence. However, other authors point out that it is easier and cheaper for extremists to engage in violent activities when they enjoy more civil liberties and political rights. Li and Schaub (2004) and Rizvi and Véganzonès-Varoudakis (2019) note an increase of violence in fragile countries during democratic periods. Eubank and Winberg (1998) find that terrorism occurs more often in democracies than in more authoritarian regimes. We use the Democratic Accountability variable, derived from the International Country Risk Guide (ICRG), as an indicator of the type of regime, to explain internal conflicts in fragile states (Howell, 2011). A high value indicates more democracy and vice-versa. In line with one part of the literature, we expect a positive relationship of the variable with the conflict variable for our different samples of fragile countries.

2.2.7. The role of Population

In addition to the above variables, we study the impact of the size of a country's population on the development of conflicts in that country. Krueger and Maleckova (2003), Freytag et al (2011) and Piazza (2008) point out that more populous countries tend to face more violence. Gaibulloev and Sandler (2019) and Taydas et al (2011) argue that it is difficult for governments to manage, serve, and respond to the demands of all in the case of large populations, due in part to a great diversity.

[5] http://hdr.undp.org/en/content/human-development-index-hdi
[6] www.ggdc.net/pwt

According to the literature, we expect a positive relationship between population and conflict in our samples of fragile countries. We use the population variable from WDI (2017) in logarithm.

2.3. Estimation of the Model: Methodological Aspects

This study focuses on fragile countries selected from the Fund for Peace (FFP) database that publishes annually a Fragile States Index (FSI)[7]. We selected 58 countries for which the index was above 70 for the analysis, which corresponds to a high degree of fragility. We analyze the development of conflict activities from 2004 to 2017 for 4 different groups: (i) Total sample of fragile countries, (ii) Islamic fragile states, (iii) Fragile countries with more than one important religion[8], (iv) States affected by major conflicts[9]. Since we have the annual number of conflict-based domestic incidents from the Global Terrorism Database (GTD) as proxy for violence, this implies that our dependent variable is a non-negative integer (count data)[10]. We use Fixed Effect Poisson Regressions (FEPR) with robust standard errors to address the issues related to count data. Poisson estimators are particularly suitable in the case of rare events, which correspond well to our situation (see Krieger and Meierrieks, 2011, for a synthesis).

3. THE RESULTS OF THE ESTIMATIONS

Table 1 presents the results for the total sample of countries, Table 2 for the Islamic States, Table 3 for the countries with more than one main religion, and Table 4 for the countries affected by major conflicts. For almost all of our specifications and our groups of countries, income, ineffectiveness of the justice system, and size of the population are correlated with the development of domestic conflict in our fragile states. These results corroborate the findings of Humphreys (2003), Collier and Hoeffler (2004) and Lai (2007) who show that low incomes are positively associated with violence. Improving incomes therefore seems to be a policy variable that governments should be able to use to reduce violence in fragile states. These results also indicate that another way to reduce conflict in fragile countries could be to improve institutions, especially the justice system. This seems consistent with the findings of Dezhbakhsh et al (2003) who confirm the dissuasive effect of the threat of sanctions. With regard to the population size variable, our results are in line with those of Gaibulloev and Sandler (2019) and Taydas et al (2011) who show that fragile countries with big populations are more exposed to violence. Our results also show a positive relationship between the education and democracy variables and that of conflict. Our findings indicate that, in fragile countries, education may not translate into an opportunity to improve living conditions or as a means of strengthening critical thinking against terrorism, as in Berrebi (2007) and Brockhoff et al (2015). This conclusion can be extrapolated to democracy, which can give more voices to discontented groups, thereby increasing violence, as in Eubank and Winberg (1998) and Li and Schaub (2004). Our results would mean that education and political rights may not have the desired effects in fragile states which would likely first have to improve the social, economic and institutional conditions of their population before they can benefit from political reforms and education. This may also be the case for economic reforms, as our trade openness variable is not correlated with violence in most of our country samples, as in Gaibulloev and Sandler (2019). A more detailed analysis shows interesting differences between groups of countries. The correlation of the conflict variable with that of income, while relatively stable in most of our samples, seems stronger in countries with more than one major religion. This is an interesting finding which could indicate that public policies aimed at improving people's incomes and living conditions could be more

[7] See https://fragilestatesindex.org/data/

8 Countries where more than 10% of people belong to a different religious group

[9] Countries having had at least 5 conflict-related incidents per year for at least half of the period studied

[10] For more details on count data regression see Cameron and Trivedi (2013)

effective in these particularly poor and fragile countries. The results are fairly similar for the population size variable, whose correlation with the conflict variable is stronger for this group as well. This may be due to the fact that several highly populated countries belong to this group, illustrating the difficulties faced by governments in meeting the needs of a large and diverse population. The results are more diverse for the judicial system. The improvement in the efficiency of justice is more correlated with the decrease in violence in Muslim states and countries with more than one main religion, than in the other groups. This is interesting because some countries in these groups may be less involved in long-term and high-intensity violence than those in the group of countries affected by major conflicts. Improving the judicial system and, more generally, the institutions could therefore prevent the escalation of violence in these fragile countries. The two education variables, the human capital index (published by the PWT), and the average number of years of schooling of the population aged 25 and older (UNDP) are almost always significant for all groups. This may be related to the fact that religion and ethnic differences are an important factor in conflicts in most of our fragile countries. In this case, education could serve the cause of terrorists by allowing certain segments of the population to be more involved in violence. For the four groups of countries, the differences in estimated coefficient are not very significant, except for countries with more than one main religion where the impact seems weaker. The same conclusions can be drawn for democracy, with a stronger impact in Muslim countries and no impact for countries with more than one main religion. This may be due to the fact that some countries in the latter group are more democratic than most countries in the group of Muslim States. In most Muslim countries, experiences of democracy have most often been followed by an increase in violence. Finally, as mentioned above, trade liberalization does not seem to be correlated with an increase or reduction in violence in our various samples of countries. This observation therefore does not make it possible to decide between the hypothesis of a negative impact of economic reforms on violence, if these lead to an improvement in the prospects and incomes of the population (as in Blomberg and Hess (2008) and Kurrild-Klitgaard and al (2006)), or positive, if they are perceived as a threat of income loss or worsening of inequalities (as in Freytag et al, 2011).

Table 1: Fixed Effect Poisson Regression for Total Fragile Countries

Variables	**Specif. 1**	**Specif 2**	**Specif 3**
lpop	4.318***	4.491***	2.944***
	(0.70)	(0.86)	(0.79)
lgdpc	-1.164***	-1.063***	-0.479**
	(0.32)	(0.37)	(0.24)
Edum	0.758***	0.681***	
	(0.17)	(0.18)	
H			4.957***
			(0.98)
Contracts	1.353*	1.360*	1.11
	(0.77)	(0.79)	(0.88)
Open	(0.32)	(0.46)	0.09
	(1.00)	(1.03)	(0.99)
Demo	0.113**	0.087*	0.262***
	(0.06)	(0.05)	(0.06)
Observations	812	714	714
Nber of counnum	58.00	51.00	51.00

*Note: Dependent variable is annual number of terrorist-based domestic incidents, robust standard errors are given in parenthesis, significance level: ***. **, * is less than 1%, 5% and 10% respectively.*

Table 2: Fixed Effect Poisson Regression for Muslim Fragile Countries

Variables	Specif 1	Specif 2	Specif 3
lpop	4.431***	4.652***	2.734***
	(0.92)	(1.08)	(0.88)
lgdpc	-1.251***	-1.108***	-0.556**
	(0.27)	(0.30)	(0.26)
Edum	0.591	0.452	
	(0.40)	(0.42)	
H			4.629***
			(1.63)
Contracts	2.425***	2.518***	2.094***
	(0.81)	(0.92)	(0.67)
Open	-0.082	-0.384	0.205
	(1.13)	(1.22)	(1.20)
Demo	0.158**	0.135**	0.286***
	(0.06)	(0.06)	(0.06)
Observations	350	294	294
Nber of counnum	25	21	21

*Note: Dependent variable is annual number of terrorist-based domestic incidents, robust standard errors are given in parenthesis, significance level: ***. **, * is less than 1%, 5% and 10% respectively.*

Table 3: Fixed Effect Poisson Regression for Fragile Countries Affected by Major Conflicts

Variables	Specif 1	Specif 2	Specif 3
lpop	4.195***	4.367***	2.682***
	(0.66)	(0.82)	(0.68)
lgdpc	-1.180***	-1.078***	-0.471*
	(0.31)	(0.37)	(0.25)
Edum	0.750***	0.671***	
	(0.18)	(0.18)	
H			4.949***
			(0.99)
Contracts	1.511*	1.498*	1.28
	(0.80)	(0.84)	(0.92)
Open	-0.441	-0.593	-0.104
	(1.06)	(1.10)	(1.03)
Demo	0.122**	0.095*	0.280***
	(0.06)	(0.05)	(0.06)
Observations	308	280	280
Nber of counnum	22	20	20

*Note: Dependent variable is annual number of terrorist-based domestic incidents, robust standard errors are given in parenthesis, significance level: ***. **, * is less than 1%, 5% and 10% respectively.*

Table 4: Fixed Effect Poisson Regression for Fragile Countries with more than One Main Religion

Variables	Specif 1	Specif 2	Specif 3
lpop	8.312***	11.147***	9.497***
	(2.87)	(1.78)	(1.61)
lgdpc	-1.531***	-1.571***	-1.090***
	(0.08)	(0.09)	(0.09)
Edum	0.725***	0.499**	
	(0.26)	(0.21)	
H			3.794***
			(0.94)
Contracts	2.976	4.961**	3.977*
	(2.57)	(2.20)	(2.19)
Open	1.867	1.834	1.907
	(1.63)	(1.72)	(1.41)
Demo	-0.155	-0.409	-0.412
	(0.45)	(0.45)	(0.40)
Observations	238	224	224
Nber of counnum	17	16	16

*Note: Dependent variable is annual number of terrorist-based domestic incidents, robust standard errors are given in parenthesis, significance level: ***. **, * is less than 1%, 5% and 10% respectively.*

4. CONCLUSION

In this article, we use Fixed Effect Poisson Regression (FEPR) with robust standard errors to study the social, economic, and institutional determinants of conflict in 58 fragile states divided into 4 groups. We show that poverty and weak institutions (weak judicial system in particular) are two important dimensions positively correlated with violence in our samples of fragile countries. On the other hand, education and democracy do not seem to help reduce violence in fragile states, our two proxy variables showing a positive relationship with conflict. Our results imply that education and political rights could not have the desired effects in fragile states, which would probably first have to improve the social, economic, and institutional conditions of their population before they can benefit from political reforms and education of their population. This is also the case for economic reforms, since our indicator of trade openness is not correlated with violence in all groups. Although this general pattern works fairly well for most of our country groups, some groups experience somewhat different situations. This is the case for countries with more than one major religion, where improving incomes and improving the efficiency of the justice system seem to be more effective in reducing violence than in the other groups. This is an interesting finding which governments could take into account to reduce the escalation of violence in these particularly fragile countries. Muslim states also appear to be particularly sensitive to the deterrent effect of sanctions which, for governments, could be an effective means of combating violence. Muslim countries, on the other hand, seem to experience a comparative higher increase in violence during democratic times. These findings could mean that in countries particularly prone to the use of illegal force, political rights should probably not be reintroduced until the restoration of order and effective institutions. Conflicts in fragile states cause great suffering for people, as well as delays in development. This study highlights some tools that governments could probably use to try to limit violence in their country.

Improving people's standard of living and restoring strong and reliable institutions are measures that could bear fruit in most fragile countries. On the other hand, the question of the role of education, political rights, and economic reforms is more complex to deal with. If in the short term these instruments do not seem to contribute to the reduction of conflicts and violence in the countries concerned, it may be thought that the priority of fragile states is to provide their populations with a safer economic, political, and institutional environment before these populations can benefit from more advanced reforms.

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ECONOMIC GROWTH AND PUBLIC GOVERNANCE: FORESIGHT SCENARIOS

Shahin Sadigov
Azerbaijan State University of Economics (UNEC)
Baku, Istiqlaliyyat str., 6, 1001, Azerbaijan
agshin.s.sh@gmail.com

Oleksii Lyulyov
Sumy State University
Sumy, Rimsky-Korsakov str., 2, 40007, Ukraine
alex_lyulev@econ.sumdu.edu.ua

Tetyana Vasylieva
Sumy State University
Sumy, Rimsky-Korsakov str., 2, 40007, Ukraine
tavasilyeva@fem.sumdu.edu.ua

ABSTRACT

The stable social and economic development of the national economy could be achieved by developing the mechanism to solve the contradictions in the triangle: society-government-economics. In this case, the most crucial goal was synchronising and harmonisation of economics and political reforms on the target and goals. In the paper, the authors highlighted that reforming was closely connected to the foresight of political institutions impact on economic development, which emphasised the features and efficiency of the national economy. The paper goal was to the foresight of economic growth, considering the tendency on political institutions efficiency. The generalisation of the approaches to estimate of the political institutions' role, confirmed the significant impact on the social development. Thus, political institutions structured the institutional environment and developed the stimulus on offers of production's factors, specialisation and realisation of innovations. The political competitiveness had an impact on the different parts of the neoclassical model of economic growth: the accumulation of labour and capital, the accumulation of human capital, and productivity. However, the scientists had not investigated the features of political institutions' impact on the quality and quantity parameters of economic growth mentioned above. The study used the developed autoregressive integrated moving average model (ARIMA) for the foresight of economic growth of the selected countries considering the tendency on political institutions efficiency. The null hypothesis of the investigation was the checking of a unit root was present in a time series sample using the augmented Dickey-Fuller test. The core criteria of political institutions' efficiency were indicators developed by the World Bank – «The Worldwide Government Indicators». The time of analysis was 2000-2019 with a forecast horizon of 10 years. The findings confirmed the dependency of economic growth from the level of corruption and political stability at the most significant level. It means that declining corruption leads to direct and indirect positive effects: increasing the efficiency of political institutions.

Keywords: *ARIMA, Unit root, Foresight, Government indicators*

1. INTRODUCTION

Providing stable social and economic development of the national economy requires the development of effective mechanisms to overcome the contradictions in the triangle: society-government-economy (Bilan et al., 2019; Ibragimov et al., 2019). In this case, the most crucial goal is to synchronize and harmonize economic and political reforms (Sadigov, 2018).

Thus, the first task of the social and economic system of relations that exist in the country is providing economic growth. The reforming of the national economy is closely related to the estimation of the dimensions which influenced economic growth. Besides, these dimensions identify the features and efficiency of the national economy (Sadigov, 2004). The short-term analysis of the economy could be characterized by the continuing fluctuating of the production volumes, unemployment rate, price, increasing of the real production volume (Shkolnyk et al., 2018; Rekunenko et al., 2019; Jafarzadeh, Shuquan, 2019; Pavlyk, 2020). In the long-term perspectives, economic growth is a positive dynamic of the aggregate supply or potential output of goods and services, the analysis of factors and patterns of which is one of the central tasks of economic science.

2. LITERATURE REVIEW

The complexity and multidirectional of economic growth as a term justified the ambiguities at the stage of determining the nature and content categories (Ibragimov et al., 2019). Thus, the American economists – representatives of the classical school, P. Samuelson and W. Nordhaus, economic growth defined as the longterm tendency of increasing the real output of goods and services in the economy. The findings of the analysis of the approach to defining "economic growth dimensions" allowed identifying the differences in the interpretation of its category. The scientists allocated the dimensions as follows as: the main factors of production that ensure GDP growth; resources involved in the production process; GDP growth determinants; sources and processes that determine economic growth, etc. Relevant scientific directions on identifying the parameters of the macroeconomic stability and its impact on economic growth formed the separate scientific school. J.B. Sei, unlike other classical, allocated three factors of production: labour, capital and land ("The Three Factors Theory"). J. Schumpeter (2000) introduced the concept of "entrepreneurship" into economic science as the fourth factor of production. J. M. Keynes (1971) considered the volume of investments in the national economy as the main factor influencing the growth of national income. In the methodology, Keynes highlighted non-economic factors, in particular the state (political system), which should stimulate consumer demand for the means of production, investment and psychology of people (Özgür, Memis, 2017). At the same time, Kondratiev (who developed the concept of long waves) identified the necessity to analyse of the impact on the economic growth of legal, social, political factors, as well as the role of the government in economic growth (Özgür, Memis, 2017). Further, in the second half of the twentieth century, scientists justified the institutional determinants of growth: people's interests, their behaviour, rules, norms, socio-economic relationships. K. Marx, identifying two fundamental factors of economic growth: the personal and the real formed the basis for their classification of factors and identified the relationship with other elements of the economic system (Peterson, Jolibert, 1995). S. Kuznets (1966) did the comprehensive analysis of the economic growth and factors which boosted the fundamental understanding of social development and its economic and social nature. He made a powerful contribution to the comparative analysis of economic growth. In the modern economic theory, the role of the human capital was underlined in the endogenous growth models and modified models by R. Solow (1956). The model provoked the considering of the quality variables in the modelling of economic growth, which provoked the modernisation of long-term analysis of the economic growth [50]. Solow model used as the first stage of each scientific, economic investigation. Solow model analysed four variables: output Y, capital K, labour L and the level of "knowledge" E accumulated in society. Output Y could change over time only when the factors of production K, L, E change. From the standpoint of dynamics, the Solow model is considered as a closed whole, in which the manufactured universal product is fully consumable. The dynamic model considers five macroeconomic (endogenous) variables: Y is the gross domestic product (GDP); I – gross investment; C – consumption fund; K – fixed assets; L is the number of the employed population.

The first three variables (Y, I, C) are performance indicators (their values accumulate over the year), the variables K, L are instantaneous variables (their values could be changed at any time). The results of the analysis confirmed that traditional dimensions did not allow to confirm the hypothesis on the significant role of the capital in the economy. Thus, the findings in the paper (Dehmej, Gambacorta, 2019), confirmed that from 1929 to 1982 years, only 20% of the American national revenue growth was provoked by the accumulation of real capital. In 1996 OECD published the report on knowledge economic (De Beaufort Wijnholds, Kapteyn, 2001; Sutherland, Hoeller, 2014). The scientists did not accept its theory during the few years. However, in 2000 the European Commission declared the Lisbon program which changed the scientists' views on the knowledge economy. The knowledge economy consists of:

1) Socio-political aspects of the social life of countries.
2) Civilizational and economic evolution and the emergence of a new paradigm in economics that is critical to the economic development of knowledge and innovation, which are much more important than the "classical" factors of production.

It is necessary to underline, that institutional changes had an impact on the technological progress and management, could fundamentally transform the economic system, determine the structure of economic development and macroeconomic growth (Saher et al., 2018; Meresa, 2019). At the same time, the political institutions allow structuring and declining of the transaction costs, optimizing property relations, and, conversely, could negatively disorganize the socio-economic structure of society, while reducing the effectiveness of innovation, investment and other development processes. The current investigations focused on the assessment of the good governance, analysis of the impact on the country's competitiveness and macroeconomic dynamic, assessment of the achieving stable balance in separate economic sectors, analysis of the dependence of the good governance from the financial and economic parameters (traditionally from GDP, inflation, unemployment, money supply, budget deficits, the stability of the national currency, balance of payments and trade, government debt, etc.) (Sadigov, 1999; Letunovska et al., 2017; Makarenko, Sirkovska, 2017; Nagy, Kiss, 2018; Kremen et al., 2018), environmental (Bhandari, 2017; Cebula et al., 2018; Hens et al., 2019; Kuzior et al., 2019; Bilan et al., 2019), social (Vasylieva et al., 2017) and marketing dimensions (Saher, 2015; Kwilinski et al., 2019; Bozhkova et al., 2018) (Figure 1).

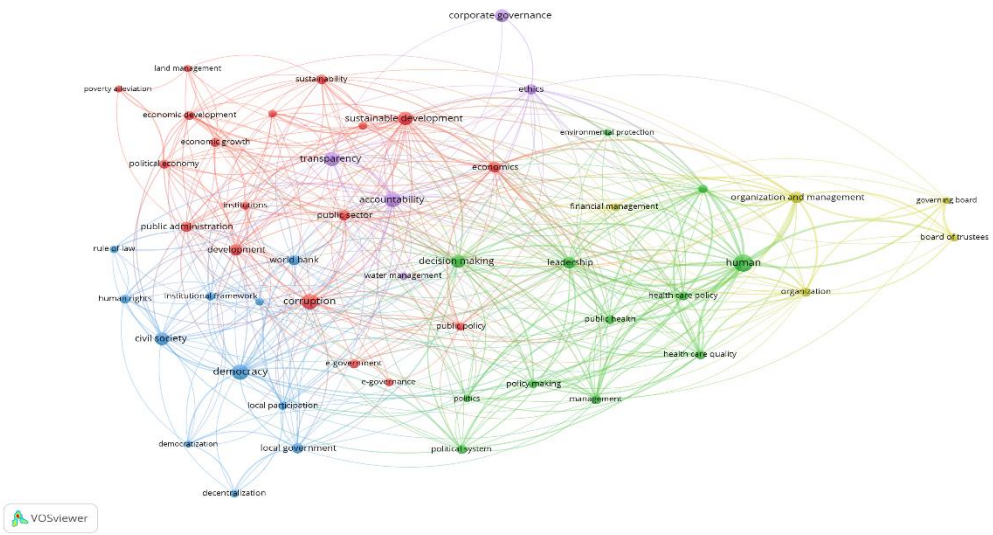


Figure 1: Content analysis of literature on good governance and visualization using VOSviewer
(Source: developed by the authors based on the Scopus, 2000-2020)

The findings confirmed that in the last ten years, the number of publications on analysis of the relationships between economic growth and good governance in the scientific databases – 292 documents. At this time, the annual growth of the publications on the selected theme – 12% (Figure 2a). The results of the analysis showed that scientists from the United States, United Kingdom, China, Spain, Germany, Netherlands, Italy, made a significant impact in the selected directions (Figure 2b).

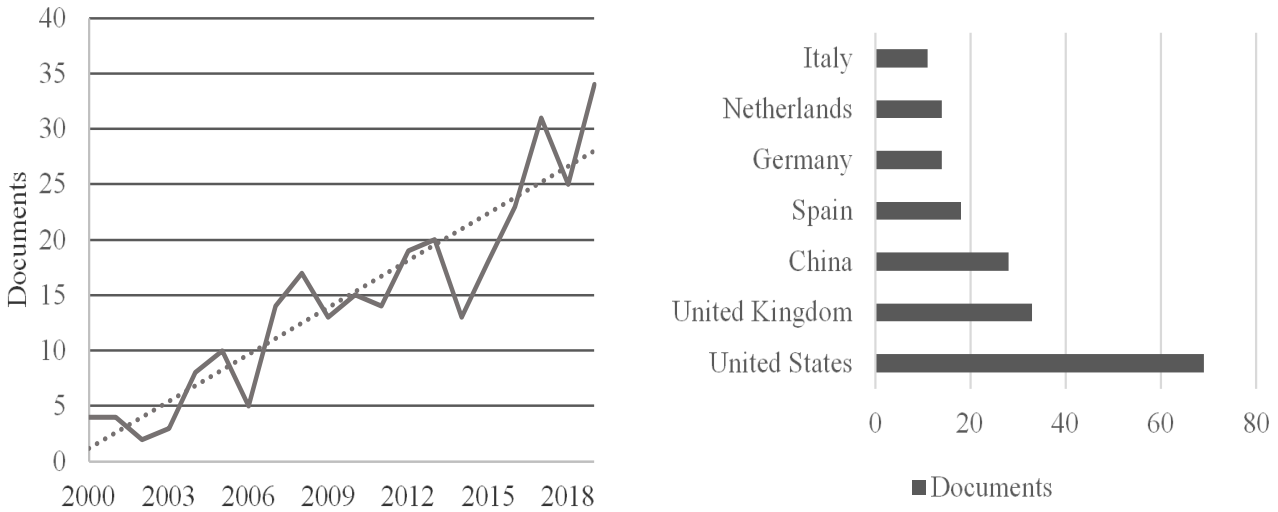


Figure 2: The dynamic (a) and countries' affiliation (b) of the papers on the relationships between economic growth and good governance, 2000-2019 years.
(Source: developed by the authors based on the Scopus, 2000-2020)

Table 1 showed the descriptive statistics of good governance efficiency on the indicators which developed by the experts from the World Bank (WGI, 2020) with it correlation features for countries: USA, UK, China, Spain, Germany, Netherlands, Italy: voice and accountability (vae), political stability and absence of violence (pve), control of corruption (cce), government effectiveness (gee), the rule of law (rle), regulatory quality (rqe). All indicators for the analysed countries had a positive value, excluding cce (Minimum=-.0296416) during 2000-2018 years. Besides, all institutional variables had a positive correlation with the fluctuation of the coefficient from 0.6268 to 0.9791 for different indicators. The findings proved the significant relationship which allowed concluding that the selected countries focused on increasing the efficiency of the good governance and macroeconomic stability.

	vae	**pve**	**gee**	**rqe**	**rle**	**cce**
Mean	1.320909	.8442897	1.345696	1.418939	1.335567	1.396952
SD	.2256454	.3390176	.6106336	.4367875	.6021135	.8089634
Minimum	.9118239	.2703004	.1976259	.6418828	.2467615	-.0296416
Maximum	1.696608	1.760102	2.09252	2.098008	1.980403	2.206632
Observations	60	60	60	60	60	60
			Correlations			
vae	1.0000					
pve	0.6309	1.0000				
gee	0.9292	0.7520	1.0000			
rge	0.9372	0.6268	0.9366	1.0000		
rle	0.9252	0.6967	0.9700	0.9345	1.0000	
cce	0.9336	0.6938	0.9728	0.9440	0.9791	1.0000

Table 1: Descriptive statistics, 2000–2018
(Source: developed by the authors)

However, the correlation matrix did not allow to confirm the role in the transformation relationships int the economic growth. In this case, the econometric models allow analysing it (Bojarko et al., 2012; Lyulyov, Pimonenko, 2017; Zergawu et al., 2018; Bilan et al., 2019; Khan, Hanif, 2020; Céspedes-González et al., 2020; Alexiou, 2020). Thus, in the paper Henisz (2000), which the most cited papers on the analysed theme in the scientific database Scopus (777) and 1894 citations in Google Scholar, the author used OLS, GLS, and GMM estimation techniques for analysis of political institutions impact on economic growth. J. Wright (2008) analysed authoritarian institutions on economic growth and investment using the econometric model (1) and OLS estimation technique. J. Wright (2008) highlighted the different impact of political regimes on economic growth.

$$Investment = \beta_0 + \beta_1 Leg. + \beta_2 RegimeType * Leg. + \beta_3 RegimeType * NoLeg. \qquad (1)$$

In the empirical study Kim et al. (2018), the authors confirmed the nonlinear relations between the quantity of the government, governance efficiency and economic growth. The scientists identified the government-size threshold, which influenced the country's productivity and output (increasing threshold lead to declining productivity and output). Thus, the improving of the governance in the country was the catalyst for the country's benefits from expanding government. The findings of the model (2) were similar with Fouquau et al. (2008) and confirmed the synergy effect from the impact of the government efficiency and increase of the government-size on the economic growth.

$$\Delta y_{it} = a_i + \beta_0 govsize_{ito} + \beta_1 govsize_{ito} g(q_{it0};\ \gamma, c) + \delta_0 governance_{ito} + \delta_1 governance_{ito} g(q_{it0};\ \gamma, c) + \varphi_0 y_{it0} + \varphi_1 y_{ito} g(q_{it0};\ \gamma, c) + \varepsilon_{it} \qquad (2)$$

Where: y – economic growth or productivity growth, govsize - government size, governance - the level of governance, i – country indicator, t – the period index, α – country fixed effect, ε – error term.

Thus, the findings allowed confirming that context of the institutional factors of economic growth means the national wealth and ca[ital relate not only from the available resources but also from the rules and norms which regulate the using of the resources.

3. METHODOLOGY AND RESEARCH METHODS

The core hypotheses of the investigation were:

- H0: There is no statistically significant difference in the level of economic growth for countries that implement effective governance policies (values of vae, pve, cce, gee, rle, rqe are higher than zero) and countries have less than zero governance effectiveness;
- H1: There is a statistically significant difference in the level of economic growth for countries that implement effective governance policies (values of vae, pve, cce, gee, rle, rqe are below zero) and countries have less than zero governance effectiveness. The authors used, the similar tests as in the paper Shymon et al. (2020), the parametric (Two-sample t-test) and nonparametric test (Wilcoxon Rank-sum test) (Butt, 2006) with the purpose to check the abovementioned hypothesis (check for normal distribution, equality of dispersions of the studied trait).
- H2: the efficiency of the country's governance positive influences on the economic growth in the longterm. The authors checked the H2 using the instruments of the economic growth foresight considering the governance efficiency tendency based on the autoregressive integrated moving average model (ARIMA) ARIMA model:

$$y_t = a + \beta_1 y_{t-1} + \cdots + \beta_p y_{t-p} + \mu_t \qquad (3)$$

Where y – economic growth, t – the time index, $\beta_1 \ldots \beta_p$ – parameters, μ – white noise.
At the first stage model (3) checked the null hypothesis that a unit root is present in a time series sample using augmented Dickey-Fuller test (ADF) (Im et al., 2003; Levin et al., 2002).

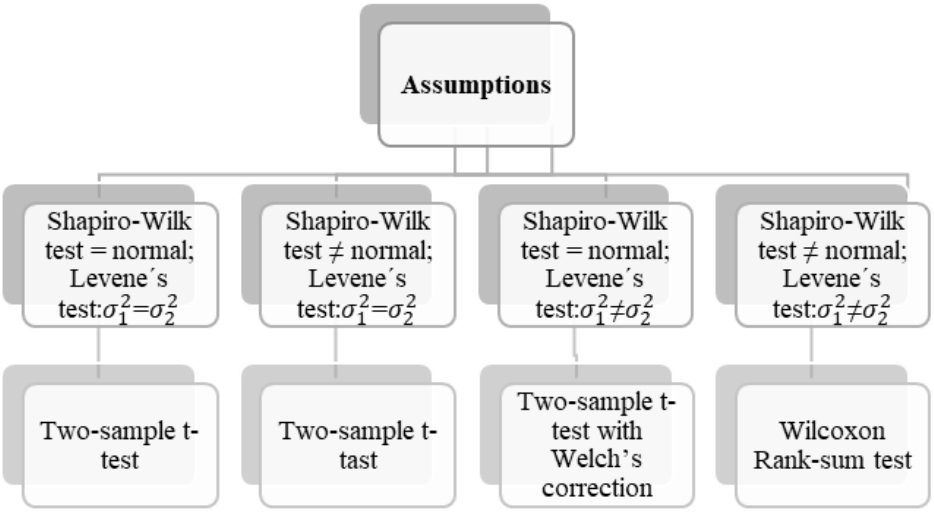


Figure 3: The structural scheme of the investigation
(Source: developed by Shymon et al. (2020))

4. RESULTS

Table 2 showed the findings of Two-sample t-test for 40 European countries for 1996-2018 years. The core dependence variable was – level of economic development per capita, dependence variables which divided countries by two groups: 1) absolute level of governance performance indicators higher than zero; 2) absolute level of governance performance indicators below zero.

Table following on the next page

Group	Results
vae	Group | Mean Std. Err. Std. Dev. [95% Conf. Interval] 0 | 2762.481 259.4981 2043.29 2243.583 3281.38 1 | 22166.05 1391.615 15116.81 19410.03 24922.07 combined | 15482.6 1145.713 15371.35 13221.76 17743.44 diff | -19403.57 1931.529 -23215.21 -15591.93 Ha: diff < 0 Ha: diff != 0 Ha: diff > 0 Pr(T < t) = 0.0000 Pr(|T| > |t|) = 0.0000 Pr(T > t) = 1.0000
pve	0 | 3054.822 639.0962 4825.071 1774.558 4335.085 1 | 21241.81 1368.588 15178.38 18532.56 23951.07 combined | 15482.6 1145.713 15371.35 13221.76 17743.44 diff | -18186.99 2059.621 -22251.41 -14122.57 Ha: diff < 0 Ha: diff != 0 Ha: diff > 0 Pr(T < t) = 0.0000 Pr(|T| > |t|) = 0.0000 Pr(T > t) = 1.0000
gee	0 | 2647.136 241.0238 1987.533 2166.05 3128.221 1 | 23275.56 1390.133 14711.78 20520.92 26030.2 combined | 15482.6 1145.713 15371.35 13221.76 17743.44 diff | -20628.42 1795.845 -24172.31 -17084.54 Ha: diff < 0 Ha: diff != 0 Ha: diff > 0 Pr(T < t) = 0.0000 Pr(|T| > |t|) = 0.0000 Pr(T > t) = 1.0000
rqe	0 | 2646.733 244.6481 2002.531 2158.277 3135.189 1 | 23093.24 1389.786 14773.63 20339.56 25846.93 combined | 15482.6 1145.713 15371.35 13221.76 17743.44 diff | -20446.51 1816.704 -24031.56 -16861.46 Ha: diff < 0 Ha: diff != 0 Ha: diff > 0 Pr(T < t) = 0.0000 Pr(|T| > |t|) = 0.0000 Pr(T > t) = 1.0000
rle	0 | 2762.481 259.4981 2043.29 2243.583 3281.38 1 | 22166.05 1391.615 15116.81 19410.03 24922.07 combined | 15482.6 1145.713 15371.35 13221.76 17743.44 diff | -19403.57 1931.529 -23215.21 -15591.93 Ha: diff < 0 Ha: diff != 0 Ha: diff > 0 Pr(T < t) = 0.0000 Pr(|T| > |t|) = 0.0000 Pr(T > t) = 1.0000
cce	0 | 3131.132 517.0386 4356.644 2099.931 4162.332 1 | 23528.05 1400.15 14618 20752.71 26303.39 combined | 15482.6 1145.713 15371.35 13221.76 17743.44 diff | -20396.92 1785.822 -23921.03 -16872.81 Ha: diff < 0 Ha: diff != 0 Ha: diff > 0 Pr(T < t) = 0.0000 Pr(|T| > |t|) = 0.0000 Pr(T > t) = 1.0000

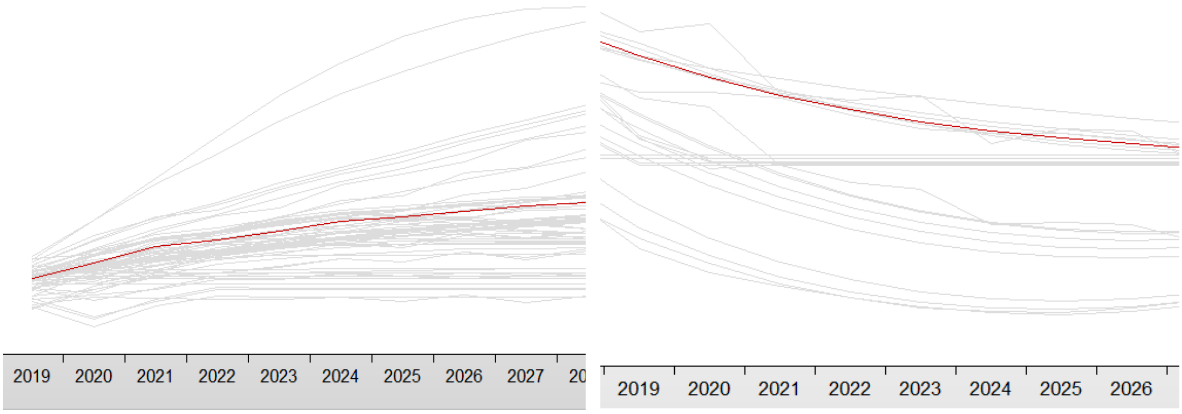
Table 2: Results of Two-sample t-test
(Source: developed by the authors)

The findings of Two-sample t-test in Table 2 confirmed the statistically significant difference in the level of countries' economic growth depending on the governance effectiveness. It allowed confirming the alternative hypothesis H1. The authors selected two countries (Poland and Ukraine) for the checking H2. Poland and Ukraine have the common border and different level of governance effectiveness by the datat of the World Bank. The descriptive statistics of economic countries and governance efficiency showed in Table 3.

Poland	gdp	vae	pve	gee	rqe	rle	cce
Mean	4.083973	.977593	.7050882	.6016045	.8666326	.6375191	.5336866
SD	1.505159	.1123883	.2735542	.1270884	.1120842	.1574141	.1887703
Minimum	1.391892	.7238377	.1529493	.3737843	.7166154	.404506	.1388244
Maximum	7.034828	1.105113	1.072063	.8273836	1.054908	.8575056	.8196566
Ukraine							
Mean	1.393952	-.200909	-.6342768	-.6307194	-.5183161	-.8018321	-.9662357
SD	6.942069	.2435141	.7826493	.1339378	.1202495	.0966547	.150309
Minimum	-14.7585	-.6710514	-2.020833	-.8750501	-.7573931	-1.108805	-1.269784
Maximum	12.10876	.0906661	.1731321	-.4134186	-.2200751	-.6813426	-.7218982

Table 3: Descriptive statistics for Ukraine and Poland, 1996–2018
(Source: developed by the authors)

The findings of foresight in economic growth for the two countries showed in Figure 4.



POLAND **UKRAINE**

Figure 4: Forecast Comparison Graph
(Source: developed by the authors)

The graphs analysis showed that each from 100 models emphasised the cyclical structures due to the inclusion of exogenous regressors as significant indicators of governance effectiveness. It allowed confirming the hypothesis H2: high level of government efficiency lead to increasing of the economic growth in the longterm.

5. CONCLUSION

Thus, the providing of the reforms on improving the governance efficiency was the core factors which positively influenced economic growth. At the same time, the transparency of the theoretical and methodological approaches to develop the multigoal programs on the country's economic growth. In this case, the key indicators were: government rules and features of the institutional factors. Besides, the multigoal programs on the country's economic growth should be based on the findings using the foresight.

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IMPORT SUBSTITUTION AS FACTOR OF ECONOMIC SECURITY

Rauf Gushkhani
Azerbaijan State University of Economics (UNEC), Azerbaijan
rauf.kafedra@mail.ru

Huseynova Shahla Akif
Azerbaijan State University of Economics (UNEC), Azerbaijan
h-sehla@mail.ru

Meshkova Anna
Astrakhan State University
Astrakhan, Tatischev str. 20a, 414056, Russia
anna.meshkova_82@mail.ru

ABSTRACT
The article analyses how import substitution could become a driver to the economic development of the country and provide its further economic security. Under the terms of the trade sanction, many countries have resorted to a policy of import substitution. From the point of view of economic science, this policy is a variation of protectionism, which creates advantages for domestic producers through import restrictions. But it has peculiarities. The author of the article highlights advantages and disadvantages of import substitution. So import substitution in any country could be viewed on the one hand as a chance for the domestic economy to expand its own production of goods and services, create a basis for long run development, and on the other hand, it inflicts a range of domestic products to the resident consumers, creates disincentive for local firms through lack of competition. And so, it could become a problem for the Russian economy or under certain conditions although offer opportunities.
Keywords: *economic development, economic security, import substitution, protectionism*

1. INTRODUCTION

Nowadays in conditions of economic instability economic security becomes an important factor to ensure the national security of the country and to promote its sustainable socio-economic development. Today, more than ever before, it is economic relations that determine the overall nature of relations between different governments. Conflicts between countries are not so much about ideologies and the seizure of state power, but rather about the struggle to control or obtain resources, control of territories rich in mineral resources and other valuable goods, or the routes through which they enter the market [11]. Cases of applying economic sanctions have become more frequent today. In the modern world, economic sanctions are a tool that allows one country to influence the policies of other countries without military actions. And though the economists are very skeptical about the effectiveness of economic sanctions [6], the number of sanctions measures applied by some countries against others has grown significantly over the past decade. The increase in the number of cases of economic sanctions over the past 20 years attracted the attention of the Russian and foreign academic community. Economic sanctions can significantly hinder economic development. According to most estimates, the introduction of sanctions in the first years slowed GDP growth by 0.5–1.0 percentage points [10]. Import substitution could become the way to ensure economic security. It is aimed at protecting the domestic producers by replacing imported goods with national ones. In order to implement this policy, the government should clearly think through all the steps to ensure that the import substitution policy works as a tool to strengthen economic security.

Nowadays, as the international economic sanctions continue, the problem of import substitution to ensure economic security of Russia is more urgent than ever.

2. ECONOMIC SECURITY

Back in the 60-70s of the twentieth century, the term «economic security» was considered by all scientists and economists as an important component of national security as a whole. In Russia, theoretical issues of economic security have been studied not so long ago. Definitions of «economic security» in the Russian literature are based on such concepts as: «independence», «sovereignty», «competitiveness», «state of the economy», «economic stability». Rubanov A.V. points out that the economic security of the state ensures the welfare of its people and the stability of the market within the country, regardless of external factors [12]. Another Russian economist Abalkin L.I. in 1994 proposed the following definition of economic security. Economic security is a set of conditions and factors that ensure the independence of the national economy, its and the ability to constant growth and modernization [1]. Pankov E. in his work «Economic security: the world economic and internal aspect» defines economic security as the state of the national economy, which characterizes its stability to the influence of internal and external factors that disrupt the normal functioning of the process of social production [9]. The Decree of the President of the Russian Federation dated 13.05.2017 № 208 «On the Strategy of Economic Security of the Russian Federation for the Period up to 2030» defines the economic security of the state as the protection of the national economy from external and internal threats, which ensures the economic sovereignty of the whole country. It is important to note that in this context, economic security is a part of the national security of the state. And in order to ensure it, state institutions can apply both administrative measures and tools of fiscal, monetary and trade policy.

3. IMPORT SUBSTITUTION

Today, in an unstable economic and geopolitical situation, the escalation of price and trade wars between countries, issues associated with economic security of the state become more urgent. Economic security is a system and its elements are designed to ensure economic independence, competitiveness, stability and sustainability of the national economy. In modern conditions, the increase in the level of economic security should be based on the formation of management space as a base for the growth of production and infrastructure potential of the economy. To achieve this goal, the policy of import substitution (when it is implemented effectively) can play the role of a driver of industrial modernization and stimulate the further economic development. As it was mentioned, sanctions are one of the main components of today's global economic relations. They act as a mechanism for shaping international diplomacy and also as restrictive economic measures which are applied to pressure one state or group of states on another one, in order for the latter to change its foreign or domestic policy and change its current behavior to the desired one for the countries which initiate these sanctions [7]. This situation could be seen in recent years, as a result of the introduction of a number of sanctions by the United States, the European Union, Ukraine, Canada and other countries in 2014 against the Russian Federation. Today, the list of anti-Russian sanctions continues to operate and the list of them keeps growing. Therefore, the problem of replacing imported products with domestic for the Russian Federation is more urgent than ever. The problem is quite severe for a state which economy in 2014 was saturated with imported goods. To ensure food security was a particularly difficult task. It should be noticed that import substitution has not been successful yet for a number of product groups. For them prices rose by 2016 and did not decline in the period 2016-2018, consumption declined significantly compared to 2013, and domestic production either continued to fall even after 2016, or at least its growth was extremely unstable.

This group includes apples, cheese, fish and seafood, as well as condensed milk and meat processing products [14]. At the same time, there are product groups for which import substitution can be considered successful. Real prices (compared to 2013 prices) of these goods increased by 2016, which can be interpreted as a short-run effect of the imposed import restrictions. However, then growing domestic production allowed prices to fall below the level of 2013 by 2018, with a corresponding increase in consumption. This group includes tomatoes, pork, poultry meat [14]. The policy of import substitution is based on the modernization and development of all branches of economy, improving the quality of products and technologies used in production, active introduction of innovations, which will eventually give the desired transition from the production of simple goods to the production of high-tech products. In general, in contrast to the definition of economic security, there are no different positions in defining import substitution. All definitions of the import substitution policy are reduced to one single thought. Import substitution as a component of the state's economic policy is a system of measures aimed to achieve certain advantages for the economy of a given country in the form of protecting the national market from foreign competition and increasing the share of national goods entering domestic consumption and foreign markets. This goal can be achieved by changing the state's external and/or internal economic policy. Thus, there could be seen two main ways to create an import-substituting policy:

- External (customs policy) – this is a direct impact on the flow of imported products, through the introduction of import protectionist barriers;
- Internal (tax, structural, innovation, investment, industrial, financial) – in this case, the instruments of government policy are directed at domestic products and firms, most often through the introduction of direct or indirect subsidies in national sectors of the economy.

Both policies are implemented to achieve a common goal: to strengthen the domestic producer, to increase the competitiveness of its products in the market (local and also world market), to reduce the flow of imported goods and services, to protect local producers from foreign competition, and to create the most favorable conditions for the development of national production [4]. Most often, the two policies are combined. Trade policy blocks the flow of foreign goods and services, thus creating a favorable environment for the active development of national industries. There could be identified two import substitution models: Latin American and East Asian [13]. In Latin American countries, which were the first to face the need for import substitution, this policy was based on a protectionist policy towards the domestic producer and the minimization of foreign economic relations. The main difference between this model of import substitution from the East Asian model is the protracted nature of protectionist measures, which subsequently had a negative impact on the results of the policy. The decline in demand on the world market led to a decrease in exports and a deficit in the balance of payments. All this has led to hyperinflation and a rapid increase of the national debt. The East Asian model is based not on strict protectionism through foreign trade restrictions and import discrimination, but on increasing the country's export potential. It is important to note that import substitution was carried out in a short period of time, and protectionism was combined with commodity and geographical diversification of exports. These measures helped to strengthen the national economy and create the basis for the implementation of an export-oriented strategy. There could be distinguished three types of import substitution strategies:

- Import substitution of technological equipment required for subsequent production;
- Import substitution of raw materials, semi-finished products, components (intermediate goods);
- Import substitution of final goods [2].

All these strategies are aimed to «clear» the economy of import dependence. Analyzing three types of import substitution, one may get the impression that, in theory, the economy can produce the goods and services it needs and meet the domestic demand. This is not true. Import substitution is not about the complete displacement of imported goods and services from the domestic market, but about strengthening and improving the domestic economy. As a result domestic producers should begin to produce goods «no worse» (and in some cases even better) than imported ones. In order for this policy to work, the economy should enrich its production sectors with the necessary capital, create conditions for safe and attractive investment, and subsequently ensure the flow of raw materials, components, qualified personnel, etc. in all the sectors of the national economy.

4. IMPORT SUBSTITUTION AS AN ELEMENT OF ECONOMIC SECURITY

The policy of import substitution is very attractive from the point of view of developing countries, especially from the point of economic security. At first glance, it seems that it is enough to restrict the flow of foreign goods and services by creating tariff and non-tariff barriers to imports, and domestic producers will come to the vacant market places and will meet the demand of domestic consumers. However, the policy of import substitution differs from the policy of protectionism precisely in its focus on the long-term development of the domestic economy, the consistent development of industries, with the subsequent abolition of the imposed restrictions. In other words, the policy of import substitution implies «growing and nurture» domestic producers to the level of world producers with the use of all necessary economic and administrative tools.

№	Advantages	Disadvantages
1	The reduction of import dependence	Increased burden on the state budget
2	Minimization of the impact of international sanctions on the domestic economy	Reduced productivity and output in the long term, due to the loss of the state's advantages from international trade and specialization
3	Import substitution reduce in the impact of exchange rate changes on the country's economy	Difficulties in relations (negotiations) with foreign suppliers
4	Import substitution reduce the sensitivity of national prices to the prices of imported products	The shortage of goods and the decrease of range of products
5	An incentive to create new or to develop domestic industries	Inflation
6	Import substitution create an opportunity to improve the competitiveness of domestic products	Low quality of national goods and services
7	Import substitution create an opportunity to improve the level of education and vocational training of specialists	Monopoly position of domestic producers
8	Reduction of unemployment due to the creation of new jobs	Decrease in the efficiency of national production, the threat of X-inefficiency
9	Strengthening of the economic security	The unsustainable production

Table 1: Advantages and disadvantages of the import substitution policy

However, it should be understood that despite all the attractiveness, the policy of import substitution has a number of drawbacks:

- Increase of the burden on the state budget. This disadvantage is the most obvious and most important. The state needs to spend a lot of money to promote this policy in the form of subsidies, providing benefits and loans to support domestic businesses, and, of course, a huge flow of investment. And at the same time the budget revenues usually fall at this period because of different tax benefits, which should be provided for the firms. The state is the main investor and guarantees the financial stability of industries at the origins of the import substitution policy.
- Reduced productivity and output in the long-run, due to the loss of the country's benefits from international trade and specialization.
- Difficulties in relations (negotiations) with foreign suppliers. This disadvantage occurs if the country does not implement import substitution of types 1 and 2, but replaces only final goods (type 3), while components, raw materials, equipment and other products needed in the production process are purchased from abroad. As a result, there could be a problem: if this flow is not well established, it will be difficult for domestic firms to produce their final goods. Moreover, economic security is at risk.
- The shortage of goods and the decrease of variety of products. If the flow of imported goods ceases (especially this problem is typical for importing countries, whose economy is oversaturated with imported products, and there is an import dependence), the country's economy will suffer sharply from the lack of goods and services. Domestic firms will not be able to meet all domestic demand immediately, which for a long period has been served by both the domestic and, to a greater extent, the external market. The result could be a shortage of relevant goods and an increase in the rate of inflation.
- Low quality of national goods and services. This problem will be most acute if the country begins to substitute not only finished products, but also technological equipment, raw materials, components, etc. (all types of import substitution). Then, due to the lack of modern technologies and equipment in the country, highly qualified personnel, as well as the lack of experience of domestic firms in new types of production, the quality of goods and services in the short term will be quite low in comparison with imported products. However, if the government implements a policy of raising educational standards, professional and technical requirements, and improving quality standards, this problem can be solved in the long run. But in the short term, this problem can become a «barrier» for the policy of import substitution and negatively affect the welfare of both consumers and producers.
- Increase in monopoly power of domestic producers. Aware of reduced competition, firms can increase prices not only under the influence of rising costs, but also in order to gain maximum profit.
- Decrease in the efficiency of national production as a whole, the threat of X–inefficiency, the stagnation of the economy. Due to the lack of competition from imported manufacturers, the incentive of domestic firms to improve their production by investing in research and development, introducing innovations, minimizing costs and improving the quality of goods and services is reduced. In the context of import substitution, the government tries to give domestic firms a chance to make a leap, catch up or overtake their foreign competitors, however, the opposite effect can be observed when domestic firms lose the incentive to develop their effectivity.
- The inefficient (irrational) production. This is one of the disadvantages that occurs when one of the main provisions of economic theory is breaked down. In this case, the principle of comparative advantage and specialization of the country is violated. If a state chooses a policy of import substitution, it is forced to produce goods and services with more costs on

their creation than the country that previously supplied this product. It is much more profitable to buy some goods abroad than to produce them independently [8]. Not to mention that there are industries that can't be developed by a particular country due to the natural, climatic, labor and other characteristics of the region.

It is necessary to realize that the problems listed above are related to the policy of import substitution. It is impossible to get rid of them completely and reduce their impact to zero (in this way they negatively affect economic development and economic security). This is the price that is to be paid for the development of the economy in the long term. A systematic and consistent state policy can help reduce the negative impact of the import substitution policy in the beginning. Also a clear announcement of the terms during which trade barriers and state support measures will operate will motivate firms that do not seek to improve the quality of their products («collecting the cream» of reduced competition) to change their behavior. If the policy of import substitution is successfully implemented, the country's economy will gain the increase in the level of economic security through reducing import dependence, which in turn is associated with a number of advantages:

- Reduced sensibility of national prices to the prices of imported products. This applies to both the prices of imported raw materials and the prices of goods and services.
- Minimizing the impact of economic sanctions. It is more difficult to influence a more stable economy through economic restrictions.
- The impact of exchange rate changes on domestic prices is decreasing. Since there are domestic products on the market (and their quality is not less than imported ones), the consumers can easily switch to domestic products at the slightest increase in prices for imported ones. The same applies to producers (if it is about raw materials or equipment that, as a result of a successful policy of import substitution, is produced within the country).
- An incentive to create new or to develop industries which already exist but are too weak under certain conditions. Countries can expand their range of production or establish a new production line for the final goods [15]. This is a very important point for the Russian economy.
- An increase in the competitiveness of domestic products. In case of successful implementation of the import substitution program (creation of a domestic product with high quality that meets international standards), domestic producers can meet not only domestic demand, but also enter the international market and start export of their goods. This also contributes to the development of the economy in the long run.
- Improving the level of education and professional development of specialists. The introduction of new technologies and techniques, innovations, and raising standards of production up to the world standards requires higher skilled employees and increases the demand for higher education. In the long run, import substitution could provide a positive impact on the quality of education and make Russian universities more competitive in the international market of education.
- Reduction of unemployment through the creation of new workplaces. The policy of import substitution implies the expansion of existing production facilities, the opening of new enterprises and the creation of new industries.
- Strengthening of the economic security. The most important thing that the government can achieve through import substitution policy is the economic independence of the country. By investing in the latest technologies and knowledge-intensive industries within the country, the government promotes the development and stability of the most important strategic sectors of the economy. For the Russian economy, this is an opportunity to move away from the raw material economy model and switch to an innovative development model.

If we consider each of these advantages in more detail, we can come to new advantages of the import substitution policy. All the elements of the economic environment are closely intertwined, some phenomena will affect others, and later one can observe certain patterns of these influences but in the long run. Having considered these arguments for and against this policy, we can see that import substitution has both advantages and disadvantages. To achieve all the advantages it is necessary to conduct a well-structured state policy, and this is the key to success in order to prevent undesirable costs of this policy (the disadvantages mentioned above). The problem of replacing foreign-made goods with domestic ones on the Russian market is not new. First of all, import substitution is associated with one of the main tasks of the Russian economy – its diversification. But an attempt to develop an import substitution program was made only after the introduction of various sanctions against Russia in 2014. The financial crisis led to a collapse in energy prices and a significant devaluation of the ruble. This combination led to a sharp increase in import prices, so consumers switched to more affordable domestic products. Second, Russia also set strong barriers against Western imports as a response to Western sanctions against Russia. This created a space of opportunities for domestic products on the Russian market. According to the HSE study «Factors limited the activities of organizations in basic sectors of the economy in 2017», 64% of business leaders reported that their products are not competitive. Russian products remain low-competitive, but they are still sold on the domestic market, which indicates a low level of competition in the economy as a whole [3].

5. CONCLUSION

The government should be reasonable about the conditions for implementing the import substitution policy. One of the most important aspects is careful preparation for its introduction. It is necessary to monitor the market of imported goods, determine their quality, standards, production conditions, pros and contras, production technologies – all this is the basis for starting production of domestic substitutes. It is also important to determine exactly which imported goods and services have «non-reproducible» quality in order to avoid the lack of «irrational production». This issue requires a deep analysis of the market for imported goods and the production capabilities of the domestic economy. It is necessary to highlight import substitution groups for products that the country can instantly produce, and for products that require capital investment, accelerated development of technologies, technical equipment, etc. in other words, it is necessary to identify and monitor growth points for their further stimulation. While developing an import substitution strategy, it is important to understand that each industry has its distinctive properties. Therefore, programs should be developed individually. At the next stage of implementation of this strategy, it is necessary to establish import flows of equipment, raw materials, materials and components and to reproduce domestic products on the basis of its research and development abilities. At this stage highly skilled specialists should be recruited. It is also important to monitor the demand and look for opportunities to provide domestic production with domestic raw materials and resources. The success of each industry depends on how much it keeps pace with scientific and technological progress. This mostly applies to technological equipment, new types (grades) of materials, and modern components. And as long as the country imports all this from other countries, they still have influence on the domestic market and they retain control of this market. The third stage of the import substitution strategy implementation should solve this problem: launching the production of an import-substituting product; creation of the concept of domestic products and organization of its pilot production. Definitely, all obvious advantages of import substitution will help the country's economy achieve independence, stability, sustain growth, and, of course, ensure high economic security of the state. However, everything is not so bright. If we consider each item from the above list, it follows an obvious fact: all this measures require large expenditures from the state

budget. The government needs to decide just how the country is ready (or rather able) to switch to a policy of import substitution (perhaps not completely), what stages the economy needs to go through, and how this will affect the economy in the short and long run. An important factor is the demand, and also consumers, and citizens of this country. The import substitution policy actively changes the market and affects people's behavior. The state must actively monitor all aspects of this issue in order to achieve success in this policy.

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TO THE QUESTION OF THE CONCEPT OF "CAREER GUIDANCE" IN THE CONCEPT OF COMPETITIVENESS

Svetlana Sotnikova
Novosibirsk state university of economics and management, Russia
s.i.sotnikova@nsuem.ru

Olga Prokudina
Novosibirsk state university of economics and management, Russia
prokudinaa@mail.ru

ABSTRACT

The article discusses the genesis, essence and content of vocational guidance in the light of the growing competition for qualified personnel in the conditions of formation of an effective national innovation system. In these circumstances, it is increasingly necessary to find new approaches to overcome the imbalance between the professional aspirations of the able-bodied individuals and the actual market opportunities for their realization. The purpose of the article - is to identify the genesis of the concept of professional orientation in domestic science, in particular at the present stage within the framework of the concept of competitiveness, to highlight the departure from the perception of career guidance as a cost of production to consideration of professional orientation as a resource for increasing the efficiency of labor, a means of development of the organization, and then a tool for increasing the competitiveness of able-bodied individuals. In this context, it is increasingly important to understand the general nature and root causes, the sources that drive the youth vocational guidance processes in modern higher education. The methodology of the study is based on the theoretical analysis of the results of scientific works, which presents the basic provisions on professional orientation. The paper analyzes empirical data that characterize the persistent and regular socio-economic relationships that are found in the vocational guidance processes of students at the economic universities. Educational institutions of higher education are the object of observation, implementing educational programs of the bachelor's degree in the major group of directions "38.00.00 Economy and Management" in Novosibirsk in 2012-2019.

Keywords: *Professional orientation, Career guidance, Career, Employee competitiveness, Professional career*

1. INTRODUCTION

The intensification of competition for skilled workers in conditions of growing loss of the working age population of Russia leads to the need to find new approaches to overcoming the imbalance between the professional aspirations of able-bodied individuals and the actual market opportunities for their realization. Correct resolution of these issues will determine the effectiveness to realize of each individual's abilities their opportunities for the benefit of public progress. This, in turn, directly influences the power of the shaped innovation system, Russia's strategic positions in the processes of global cooperation and competition. Thus, professional orientation begins to turn into an economic need recognized by society (Sotnikova, 2012, p.14). Career guidance - is a necessary process of purposeful restriction of the sphere of professional activity of a working person in accordance with the natural uniqueness of his/her labor force and the market need for labor. The history of professional orientation development in our country is rather long and ambiguous, in which several stages can be separated. In the first phase, in 1918-1930, attempts were made to address the problem of career guidance. It was felt that everyone should be assigned to their work. The main emphasis was on familiarizing of able-bodied individuals to many professions, which was combined with labor training.

Experimental gardens were created in large primary schools and high-type schools, schools for peasant (collective farm) youth were established, and a movement of young technicians and naturalists was launched to identify and develop early professional true purpose among-young people, etc. [4]. The second All-Union Conference on the Scientific Organization of Labor was an important moment in the solution of the problem of career guidance (1924). Its work resulted in the establishment of a network of professional counseling offices, subordinate to the educational authorities and the People's Labor Committee in the country. In 1929, the Inter-Agency Council for the Coordination of Professional orientation Activities was established. The second stage, 1930-1935, is related to the activation of career guidance work among the able-bodied to the disadvantage of the development of its theoretical and methodological basis. This has led to the empirical, scientifically helpless and primitive nature of all accumulated material in the field of career guidance. Most of the psychological classifications of professions were taken from the head and were subjective. It is no accident that by the mid-1930s professional orientation work became more and more pedological. In addition to psychological data, professional orientation involved carrying out studies of the physical life of the individual, its dependence on external, especially social conditions, education. The distribution of the able-bodied individuals in the system of division of labor according to mental, physical and social qualities was at odds with the Communist Party's line of aimed at equality for all members of the working class in education and employment, with an ideology of universal equality. The third stage, 1936-1958, relates to the prohibition of career guidance in the country by the Decision of the Communist Party and the Government of the Soviet State (1936). The fourth period, 1958-1991, was marked by a rapid development of the theory and methodology of career guidance based on a critical reassessment of the experience of the formation of the theory and practice of professional orientation in 1918-1936. The new direction in professional orientation was headed by Siberian scientist V.N. Shubkin. During this period, the professional orientation of young people was identified as one of the most important and indispensable factors in the formation of the individual's personality. The research on the social problems of young people was started: "Project - 17", "Twenty years later", "Project 17-25", and comparative study of the problems of social development and professional orientation of young people in six socialist countries (1969-1978). The special feature of vocational guidance programs during the socialist period was that they were mainly presented from the point of view of connecting education and training with productive work, merging general education and vocational schools. The country has adopted a policy to establish a nationwide system of career guidance. The fifth period in the development of career guidance, 1991-2000, relates exclusively to the selection and development of promising employees with the most appropriate personal profile and high professional performance, i.e. the search for "superemployees", the implementation of the HR-eugenics, on the background of the collapse of the national system of career guidance, the formation of a dispersed network of public and private organizations to provide vocational services to the able-bodied population. Problems of finding "superemployees" in the changing conditions of life and professional activity have updated the need to develop theory and methods of career guidance in the context of decentralized management of professional orientation in labor surplus economy. The modern stage of development of theory, methodology and method of career guidance, from 2000 to present, is caused by special role of professional orientation in creation and maintenance of competitive advantage of business structures. Career guidance during this period was aimed at finding the most valuable employees for the business, whose impact in management or professional activities is significantly higher than others. Career guidance is intended for every able-bodied person to find a job in the system of social division of labor that will allow him not only to act according to the need, but also to identify and develop his creative abilities, to achieve better results than market ones, i.e. to have a competitive advantage in professional work in changing

conditions of life and professional activities. By identifying and exploiting the competitive advantages of the individual, professional orientation becomes a means to achieve the organizational goal - of improving the corporate competitiveness of the staff, which ultimately contributes to the improvement of business competitiveness, the organization's viability, profit growth, etc.

2. RESEARCH

As the theory, methodology and practice of professional orientation developed in Russia the understanding of its role and place, both in the life activity of the able-bodied individuals and in the functioning of the organization changed: there is a shift from the perception of professional orientation as a costs of production to the consideration of it as a resource for increasing efficiency as a means of developing an organization, and then as a tool for improving employee competitiveness. As a result, there is a genesis of the content of professional orientation in the concepts of theorists, from the concepts of professional vocation and comprehensive personality development to the concepts of human capital and employee competitiveness (Table 1).

Table 1: Domestic career guidance concepts

The concepts of career guidance according to its purpose	**The concepts of career guidance according to the theoretical and methodical approach to it**	
	Educational	Diagnostic
economic	*Competitiveness concept (2000 to present)*	*Human capital concept (1991-2000)*
social	*The concept of comprehensive development of the individual (1958-1991)*	*The concept of professional vocation (1918-1935)*

- *The concept of professional vocation* - the aim is to provide the employee with a job, to help him to acquire a profession that is in line with his existing skills, knowledge and experience, to satisfy the internal socio-psychological need for a particular profession.
- *The concept of comprehensive development of the individual* – according to it, the natural universality of every able-bodied individual as a prerequisite for the emergence of a labor force must be adequately developed as a consequence for the full development of all members of society. Material factors of production were considered as a universal means and a necessary condition for the development of subjective abilities of workers.
- *Human capital concept* - this concept considers the individual's inclination to a profession, his ability to engage in a certain activity. The greatest strengths of the individual are identified and further developed, in accordance with the profession within which the most effective work is possible. Investment is being made in the expansion of productive opportunities through the development of education and experience.
- *Competitiveness concept* - it is based on the development in the process of work of a set of competitive professional knowledge, skills their further use in the process of working life of the person in order to obtain the maximum economic profit. Competitiveness concept aims to achieve individual's competitive advantage over other competitors by improving their competencies and making the longest possible use of those competencies (Sotnikova, 2014, p. 61). In this regard, professional orientation is seen as an event system that helps to build and enhance the competitiveness of the individual throughout his working life in changing socio-economic conditions.

Depending on the way of activating the competitive advantages of the worker, two main approaches to career guidance, diagnostic and educational, can be identified. The diagnostic approach is aimed at the identification of the individual's competitive potential to professional activity. This approach assumes that the biological and social heredity of the worker creates characteristic structures of abilities, skills of perception, views, goals of life, values, etc. The range of these qualities determines the individual preferences of certain professions, the potential for certain professional aspirations and achievements, the prerequisites of his personal competitiveness. Personal competitiveness of the employee - a versatile, comprehensive characteristic of his opportunities for the labor in different situations and with different subjects of business activity (Sotnikova, 2015, pp. 100-107). It represents a stable set of qualitative characteristics of the labor force, constantly enriched in the process of accumulation and updating of knowledge, skills, installations. The employee's competitive advantage determines his or her ability to perform his or her functions with quality and with minimal errors (unmistakably), to master the new and to adapt quickly to changing conditions. The educational approach involves the implementation of a set of measures to bring personal competitiveness into a functioning state, i.e. it is aimed at forming the corporate competitiveness of the employee (Sotnikova, Prokudina, 2019, pp. 1059-1078). Corporate competitiveness of an employee is an economic form of realization of personal competitiveness of the employee in its joint movement with material factors. This is the degree to which individual (personal) competitiveness is brought into a functioning state. Corporate competitiveness of the employee, acting as a complex intellectual-practical and socially conditioned system, ensuring effective practical activity of the employee, not only determines the result of his professional activity, but also the course of his thinking and activity. The amount of an employee's corporate competitiveness depends on the "technological" interrelationships that connect the employee's skills, knowledge with the organization's material and technical base, the system of division and cooperation of labor, and in-group economic relations. At the same time, the individual competitive advantages of the employee change during the work process, their individual characteristics acquire new properties that give rise to the dynamics of the professional activity, and some formed personal competitive advantages may not be revealed at all. Thus, corporate competitiveness considers the new qualitative characteristics of an employee's ability to work, which are generated by the labor cooperation effect. Corporate competitiveness, acting as a complex intellectual-practical and socially conditioned structure, not only determines the result of labor, professional activity, but also its complexity. The educational approach aimed at forming the corporate competitiveness of the employee involves the realization of steps to adapt the abilities and needs of able-bodied individuals to the changing market situation in the labor market, i.e.: cognitive (the aim of which is to create the most complete understanding of the world of work and professions), stimulating (the purpose of which is to increase sustainable cognitive and professional interest), evaluation (the purpose of which is to select the most appropriate career option) (Sotnikov, 2016, pp. 126-135). Since there is a strong correlation between the individual competitiveness of the employee and the corporate competitiveness, it is impossible to compare diagnostic and educational approaches to each other and to talk about the possibility of realization of one or another approach in a pure form. It should be noted that the more competitive advantages are created during the formation of personal competitiveness, the more effective corporate competitiveness is manifested, and vice versa, daily practical experience has a fundamental influence on improving personal competitiveness, as employees reflect on the experience gained, learn from it, improve their competitive advantages. In other words, as the individual develops his or her professional abilities, he or she constantly adjusts his or her abilities to the conditions of professional work and the conditions of work to his or her capabilities. In this process of mutual adaptation professional qualities are improved, the missing properties are acquired, the compensatory mechanisms of the able-bodied individual

come into effect. The individual, by diagnosing (identifying and activating) the strengths of the abilities to labor, seeks to use the most fully your potential to have a competitive advantage. The structure of the educational impact of career guidance on the able-bodied individuals has not changed significantly for the period from 2012 to 2019: the immediate social environment, parents, relatives, teachers and professional representatives are the dominant source of influence on individual's career guidance (Figure 1). There is a need to recognize the recent increase in the role of professional educational institutions as career guidance entities in an era of serious demographic changes associated with the demographic crisis. They carry out their work on the career guidance and selection of applicants within the framework of the pre-university training system based on agreements with general educational institutions, organizing training courses for applicants, small faculties (laboratories), correspondence schools or sections and also the educational and methodical support of the educational process in the specialized classes, distribution of information, reference, educational and methodical literature.

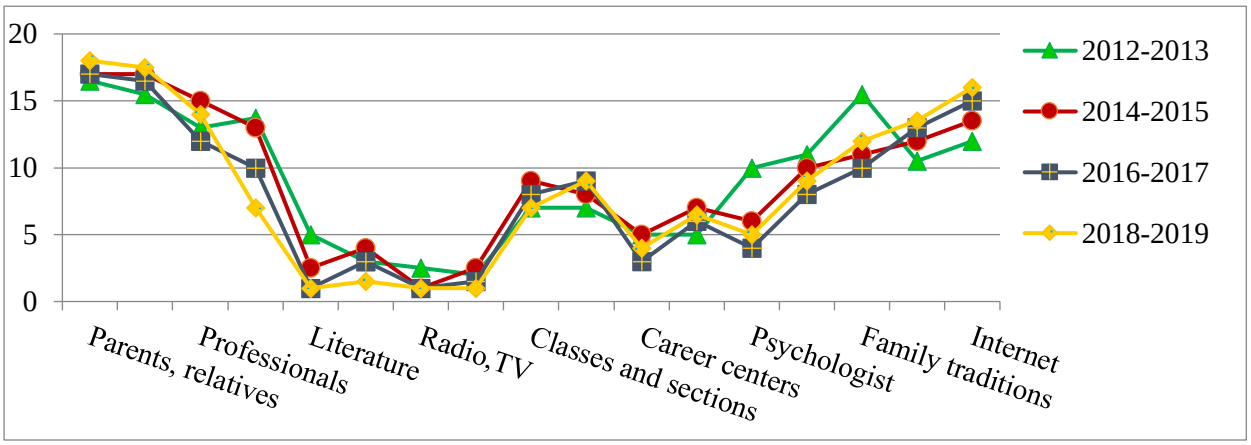

Figure 1: Impact of social environment on career guidance of students of economic in Novosibirsk's universities (rank of importance in ascending order) (developed by authors) (Sotnikova, 2012, pp. 14-22; Sotnikova, Prokudina, 2019, pp. 1059-1078; Prokudina, Sotnikova, 2019, pp. 295-303).

The purpose of these organizational forms is to select more gifted young people, to help improve the relevant complex of knowledge and abilities. More and more actively organize courses on preparation for the Unified state examination, conduct various subject-oriented and professionally oriented subject competition, profile conferences, seminars, schools of young professionals etc. Unfortunately, it should be recognized that the career guidance potential of the economic university is not sufficiently used. Curricula, forms and methods of preparatory courses, specialized classes are created empirically, with the orientation to the dominant vocational-agitation forms, and the amendment to they development is made spontaneously by each university, depending on its competence and priorities of development of the relevant branch of knowledge. The influence of the nearest social environment on the value consciousness of the able-bodied persons decreases as the professional activity is mastered, the transition is made from professional expectations to revision of the previously formed professional values.

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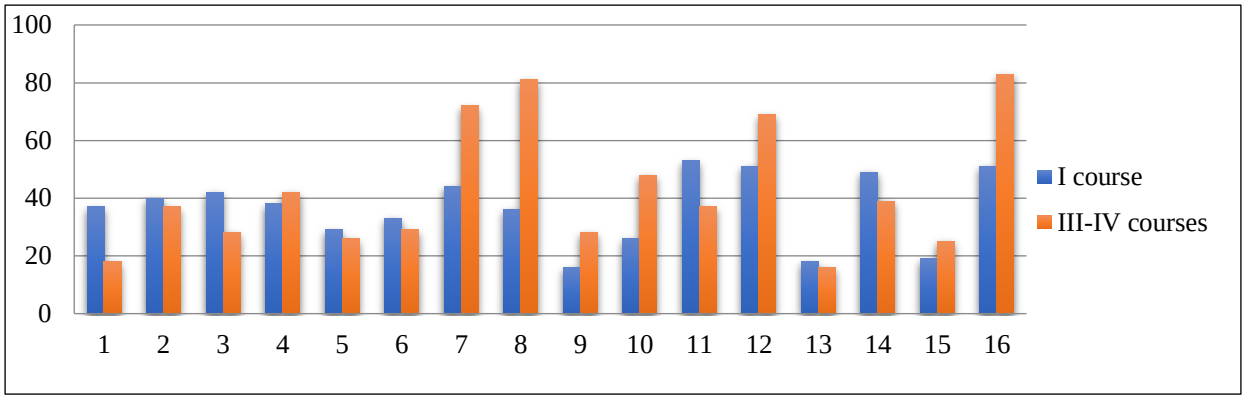

Figure 2: Motivational core's dynamics of choice the profession for students of the economic universities: 1 – work non-standard, creative; 2 – accumulate knowledge, improve skills; 3 – most fully utilize your abilities; 4 – achieve respect and popularity in society; 5 – to achieve respect of friends; 6 – to bring benefit to society; 7 – manage to people; 8 – career opportunities; 9 – relative ease of professional labor; 10 – the desire to work in a clean, healthy working environment; 11 – prestigiousness of the profession; 12 – Ensuring a stable future for yourself and your family; 13 – lack of confidence when entering another university; 14 – desire for higher education; 15 – relative ease of study at the university; 16 – be financially secure (developed by authors) (Sotnikova, 2012, pp. 14-22; Sotnikova, Prokudina, 2019, pp. 1059-1078; Prokudina, Sotnikova, 2019, pp. 295-303).

Fig. 2 shows that the value consciousness of the first-year students is characterized by a relatively weak, unstable the formation and strong influence of moral norms on the part of older generations. Freshmen's inclination is still unstable, subject to change, based on knowledge of secondary properties of professional activity. Most of the prospective university student, planning to receive vocational education at the economic university, don't think about the essence of the activity that they will perform after the graduation. As the individual develops his or her professional activities, he or she is also constantly adapting his or her abilities to the conditions of work and working conditions to his or her abilities and needs. In this process of adjustment professionally important qualities are improved, the missing properties are acquired, the compensatory mechanisms of the able-bodied individual are put into effect. It is no coincidence, therefore, that if only a quarter of the schoolchildren chose a profession conducive to their career development, already a third of the students have mastered a specialty to which they have a vocation (Fig. 3). Thus, it should be recognized that aptitude for a profession should not be considered as once and for all established, it should be presented as a process requiring long and consistent observation, each person by his natural data is more or less fit for most professions (Sotnikova, 2017, 137-159).

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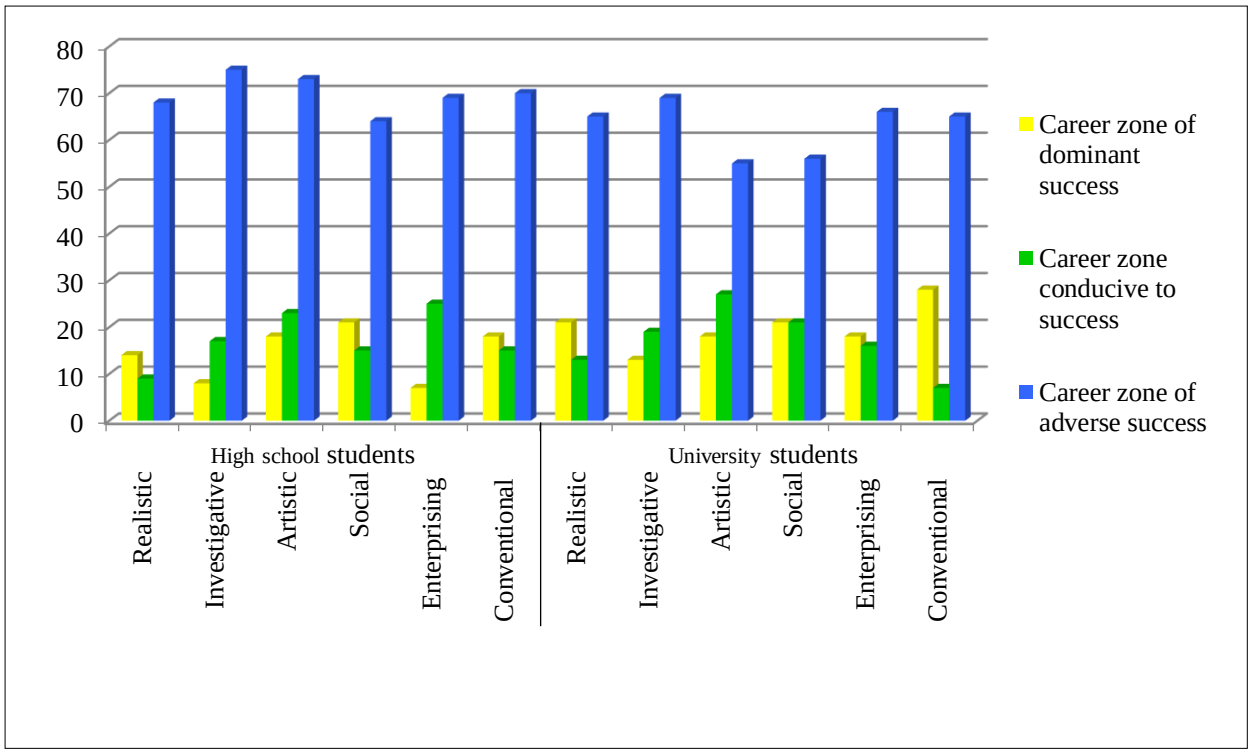

Figure 3: Distribution of applicants and students of economic universities of Novosibirsk by career zones of success depending on the professional type of person (Holland typology), according to the results of the studies in 2012-2013, 2014-2015, 2016-2017, 2018-2019, % (developed by authors) (Sotnikova, 2012, pp. 14-22).

Thus, the effectiveness of career guidance depends more on how diagnostic and educational approaches interact than on the level of development of each. Synergy of interaction of diagnostic and educational approaches to professional orientation involves carrying out professional information, career support, psychological support. All these career guidance measures can be implemented in individual or group forms. Teachers, school's psychologists, representatives of educational institutions and employers' representatives, etc. may act as a career guidance agents. In addition, employers, universities, secondary education institutions and elementary vocational education institutions can form a special organizational structure which will provide of a unified organizational career guidance policy. The purpose of professional information is to familiarize of able-bodied individuals with the state of the labor market and educational services market, the needs of the regional economic complex in qualified personnel, the content and prospects of the development of professions, the forms and conditions of their mastering, the possibilities of professional career. In the course of professional information can be used conversations, simplest career tests, which help youth to better orient themselves in the world of professions and to determine the most suitable sphere of activity for themselves. This type of services should include psychological preventive conversations that facilitate socialization and integration into the labor activity of certain categories of the working population, pupils of boarding schools, adolescents with deviant behavior, disabled, unemployed, etc. An able-bodied individual must determine his professional aspirations and market opportunities. The purpose of career support is to assist individuals in forming a career program, i.e., individual attitudes and behaviors that ensure that ensure sustainability in social life (Sotnikov, 2016, pp. 56-62). The result of career support is the identification of a constructive way of overcoming career problems for a particular individual and development of a career-chart, i.e. individual plan of professional development of an employee taking into account both his psychophysical and motivational possibilities and

market needs in personnel. Career support forms include consulting, use of different forms of self-assessment, perspective professional support. Advice includes the application of tests, interviews, and then the consistent development of individual career options by the consultant and the interested person. Group sessions are held in case of interest of several individuals with similar problems in consulting. At the first stage of the group session, a study discussion is held to establish a working relationship between the consultant and the individual at a level that allows to build working hypotheses about individual career needs. The second stage involves priority streamlining of individual's needs. The third stage provides a comprehensive assessment of the social-activity characteristics of the able-bodied individual, which are most closely related to the choice of profession, place of study or place of work. Interviews, psychological tests, questionnaires, modeling methods and selective analysis of work can be used for the assessment. During the group session any methods of career support, business workshop (playing difficult cases from practice), learning the cases of career building, personal development trainings, testing with subsequent discussion of results, presentation and discussion of individual professional development plan (career-diagrams) etc. are possible. At the feedback stage, the career guidance consultant informs the individual of the results and their hidden meaning. The goal of the final stage is to make an individual decision on the choice of a career model. Different forms of self-assessment can be used for career support. This approach involves the use of a wide range of social and psychological methods of interaction with an individual, aimed at normalizing his emotional state, strengthening his motivation for self-knowledge and professional work. The approach includes testing, a survey followed by selection of individual career options provided by a career guidance consultant. The method of prospective professional career support combines individual and group counseling. In the first stage, a career counselor conducts a workshop to familiarize the team with the nature and content of career planning, and to clarify the role of the employee in building his or her career. Then tests, self-evaluation tests of personal and business qualities are carried out to identify the positive and negative sides in terms of career building, overcoming stress, in terms of determining the strengths and weaknesses related to leadership, creativity, etc. After that, the career counselor gives career recommendations to everyone, describes the characteristics of the professional knowledge, skills, motivation of the person, his interest in the sphere of work and career development and the correspondence of this interest to the business qualities, the possible career options are considered. Comparing the approaches to career support, it should be noted that the method of prospective professional career support is appropriate in the professional orientation of those young people who are characterized by the choice of the field of professional development according to the type of their professional personality, i.e. "dominant area of development". The individual approach is usually used to work with those who need additional assistance in addressing career issues in the "adverse area of development". The group approach focuses on the professional orientation of those who experience various difficulties in terms of their careers in the "enabling area of development".

3. CONCLUSION

Thus, career guidance is a system of activities that motivate people throughout their working lives to develop and improve their professional careers in accordance with their abilities, motives, preferences and the needs of the labor market, which set the boundaries, forms, and orientation towards achieving social sustainability in professional activity (Prokudina, Sotnikova, 2019, pp. 295-303). In fact, professional orientation represents the general ideology of the career of able-bodied individuals, which is designed to prepare they constantly for the changing socio-economic reality.

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E-COMMERCE FROM THE PERSPECTIVE OF VISEGRAD COUNTRIES

Tatiana Corejova
University of Zilina, Slovakia
Tatiana.corejova@fpedas.uniza.sk

Milan Garbier
University of Zilina, Slovakia
Milan.garbier@ziltep.sk

Roman Chinoracky
University of Zilina, Slovakia
Roman.chinoracky@fpedas.uniza.sk

Alexandra Valicova
University of Zilina, Slovakia
Sasa.rovnanova@gmail.com

ABSTRACT

E-commerce has increased significantly in recent decades, gaining popularity and in a way replacing traditional stores. E-commerce allows you to buy and sell products on a global scale, twenty-four hours a day, without incurring the same overhead costs as running a physical store. The Visegrad countries (further V4) represents the regional cluster in the central Europe and includes The Czech Republic, Hungary, Poland and The Slovak Republic. All four countries are in 2018 classified as the high income countries and are the member states of EU. The analysis of the development of the share of e-commerce in the total turnover in 2012-2018 in the V4 countries shows a clear upward trend also in relation to the EU28 and the EU19 shows convergence. The share of e-commerce turnover of all enterprises with more than 10 employees was above the average level of both EU28 and EU19 in the Czech Republic and Hungary in the whole period, in Slovakia the share exceeded both EU28 and EU19 in 2013-2018; this turnover is 2-5 percentage points lower than the average in Poland. The assessment of the levels and trends of e-commerce is based on the statistical data published in the OECD and Eurostat studies. E-commerce evokes also the requirements on the cross-border physical flows. The indicator of average trade facilitation performance is in the in the range of 1.44 to 1.66 in all V4 countries but more differences are among the sub-indices of indicator.

Keywords: *E-commerce, Sales, Trade facilitation Indicator, Turnover, Visegrad countries*

1. INTRODUCTION

Recent significant changes in technology, policies and market structures have a major impact on the way we live, work, communicate and trade, buy and sell (McQuivey, 2013). In terms of scale and complexity, these changes are fundamental to society and people. Therefore, the response to change must be integrated and comprehensive, involving all stakeholders on a global basis, from the public to the private sector, academia and civil society (Čorejová et al. 2006). With the help of information and communication technologies, there is a rapid connection between companies, whether it is a transcontinental closing of transactions on-line or quick transfers of funds and other banking operations that can be carried out immediately (Alstyne et al.2016). This is made possible by both electronic data flows and e-commerce exchange-related developments. Data flows are the transmission of information or data. The data flows associated with the execution of commercial transactions follow the exchange

processes and thus cross national borders or countries. different territorial groupings. Cross-border data flow is the flow of electronic data across political borders, for example between states or countries, a process that can cause legal conflicts (IT Law Wiki 2019, E-commerce definition, 2019). E-commerce has increased significantly in recent decades, gaining popularity and in a way replacing traditional stores. E-commerce allows you to buy and sell products on a global scale, twenty-four hours a day, without incurring the same overhead costs as running a physical store (Madlenak & Madlenakova, 2015). By OECD (2011) e-commerce transaction include the sale and/or purchase of goods and/or services, conducted over computer networks by methods specifically designed for the purpose of receiving or placing of order. The following sections are devoted to comparison of Visegrad countries or V4, that include the Czech Republic, Hungary, Poland and Slovak Republic, in the use of e-commerce by individual businesses depending on their size and trends in e-commerce compared to the EU28 and Eurozone EU19. The study builds on previous analysis (Corejova, 2013, Majercakova, 2014, Stofkova and Stofko, 2016).

2. THEORETICAL BACKGROUND

Technological innovations, particularly related to digitization and ICT, are becoming commonplace, but some countries are concerned about the free flow of data related to the social and economic life of countries. Cross-border data flows associated with e-commerce can also become a source of uncertainty, concern, concern or threat (OECD, 2018, Internet World Stat 2019, Coalition of Services Industries, 2019). An example is protectionism for the benefit of local businesses, based on the collection of information, but also the violation of privacy and security of personal data, etc. In response, some governments have adopted legislative measures and introduced obstacles to the free flow of data across borders. The benefits of e-commerce for businesses and consumers depend on the degree of confidence that is placed on the activities of the various actors in the digital space. However, some concerns raised by consumers and businesses regarding cross-border data flows are also identified. From a consumer perspective, concerns are largely related to the use of personal data and the risks of misuse or theft of information (Jones & Shao, 2011). Maintaining data security, data integrity and confidentiality remain business priorities for business (Majercakova, 2014). However, privacy is a critical factor that significantly affects online confidence (OECD, 2018). According to OECD (2014), privacy and security concerns play a key role in determining whether consumers order online or not, and there are important business reasons for privacy. However, with the increasing collection of personal data, there is an increased risk to individuals' privacy, which is why consumers are increasingly asking for assurance that their data is being treated appropriately (Stofkova & Stofko, 2016). Companies are more aware of their ability to meet these requirements as part of their competitive offer (Madudova et al. 2018). The use of digital technologies in traditional commercial processes raises questions about how to measure these changes, the share of new forms of commerce and the impact assessment of e-commerce. Measurement of e-commerce evokes some methodological challenges (OECD 2014). They are related to comparability and accessibility of data as well as the security of data. Data in various databases is the result of surveys that do not always fully cover all sectors of the economy and all areas of e-commerce. The advancing technology convergence brings additional dimensions to measurements (mobile services, smart phones, etc.). The volume of trade both imports and exports of the „predominantly digitally deliverable services“ are measured through business surveys (OECD 2019), but the data about digitally deliverable services are not usually separated as well as the practices of data collection are not unified. But the e-commerce can also lead to increasing international trade in related services like transport, postal and courier services. The delivering goods processes as a physical part of e-commerce meet the border procedures or

trade barriers. For measuring the conditions on the borders of countries trade facilitation indicators can be used (OECD, 2019).

3. MATERIALS AND METHODOLOGY

When analysing the share of e-commerce for the V4 countries, we used statistical data published by OECD and Eurostat and the selection of indicators was therefore:

- Development of the share of e-commerce in turnover of enterprises of different size according to the number of employees;
- Assessing the performance of measures to improve cross-border trade and hence the movement of goods and services across countries.

The V4 countries currently account for 12.53% of the EU population. They are significantly lagging behind in GDP per capita. In 2018, it was lagging in the Czech Republic by 36.46% (in 2017 by 39.67%), in Slovakia by 43.68% (in 2017 by 48%), in Hungary by 54.87% and Poland even by 55.23% (but by 60% in 2017) see Table 1.

Table 1: Selected indicators of economic and social development in V4 countries 2018

Indicator	CZ	HU	PL	SK	EU28
Population in mil.	10,6	9,8	38,4	5,4	512,2
GDP pre capita (in EUR)	17620	12560	12430	15560	28280
GDP per capita, PPP$	39743,6	31102,5	31336,6	33736,4	43737,7
Internet Penetration (%)	87,7	89	78,2	84,9	90,2
Share of household with broadband internet access (%)	86	83	79	79	86
Global Innovation Index - score	48,75	44,94	41,67	42,88	x
Innovation Input Sub-index - score	54,26	48.94	49,41	49,34	x
ICT access (index)	71,4	77,8	75,8	72,2	x
ICT use (index)	66,2	57,1	54,7	66,7	x
Government´s online service (index)	47,8	63,0	70,3	44,2	x
Innovation Output Sub-Index - score	43,23	40,95	33,92	36,43	x
ICT services export, % total trade	2,1	1,8	2,2	1,1	x

Source: By Eurostat, 2019

Internet penetration is below EU28 in all V4 countries. The highest level of penetration is achieved from V4 Hungary, which is only 1.2 percentage points lower than the EU28, the lowest level is Poland, which is 12 percentage points below the EU28 average. Share of household with broadband internet access is on the same level as in EU28 only in the Czech Republic and in the Hungary, Slovakia and Poland is below that in the EU28. All four countries are in 2018 classified as the high income countries. The analysis of global innovation index on the both input and output sides shows that the Czech Republic is leading country in the region followed by Hungary at the output side of innovation index. But each country has the highest index values in some area - Hungary in ICT access index, Slovakia in ICT use, Poland in government´s online service (Table 1).

4. RESULTS

The assessment of the development of the share of e-commerce in the turnover of enterprises below is based on the Eurostat surveys (2019). In the context of the years 2012-2018 it can be stated that:

- In terms of turnover of all enterprises with more than 10 employees, the share of e-commerce turnover in the Czech Republic and Hungary was above the average level of both

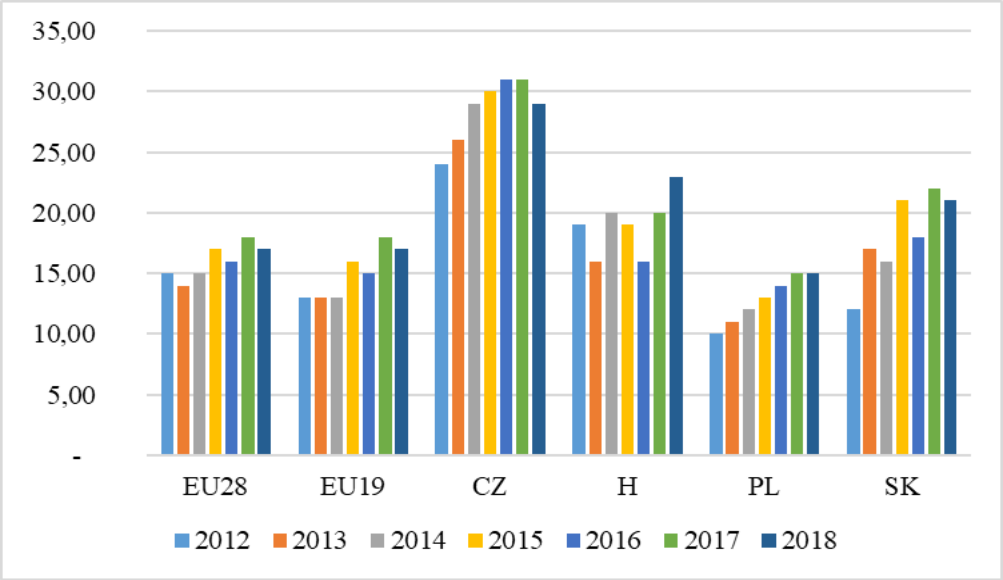
EU28 and EU19 in the whole period, in Slovakia the share exceeded both EU28 and EU19 in 2013-2018; this turnover is 2-5 percentage points lower than the average in Poland (Table 2 and Figure 1).

Table 2: Share of e-commerce in turnover of all enterprises over 10 employees in 2012-2018 in EU28, EU19 and V4 countries in%

	2012	2013	2014	2015	2016	2017	2018
European Union EU28	15	14	15	17	16	18	17
Euro area EU19	13	13	13	16	15	18	17
Czech Republic (CZ)	24	26	29	30	31	31	29
Hungary (H)	19	16	20	19	16	20	23
Poland (PL)	10	11	12	13	14	15	15
Slovakia (SK)	12	17	16	21	18	22	21

Source: Own processing by Eurostat, 2019

Figure 1: Share of e-commerce in the turnover of all enterprises over 10 employees in the V4, EU 28 and EU 19 countries in 2012-2018 in%



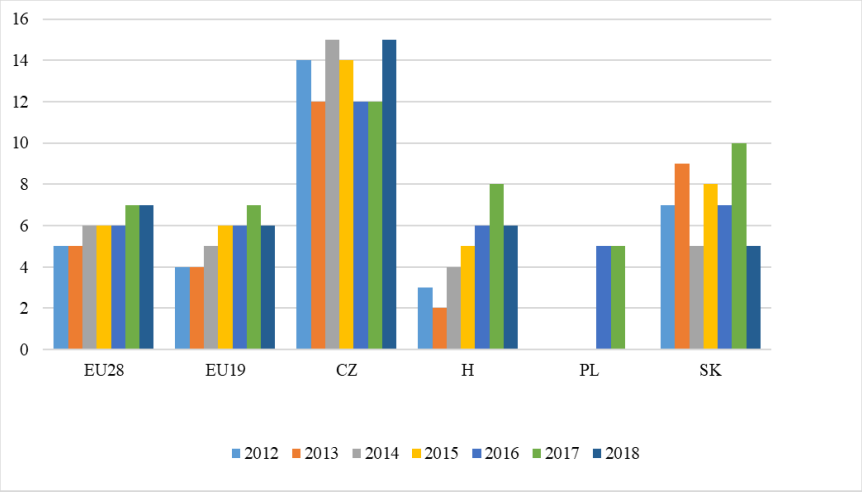
Source: Own processing by Eurostat, 2019

- In the turnover of small businesses, with the number of employees 10-49, the share of e-commerce reached a lower value, except in the case of the Czech Republic, where in several years it was more than twice as high. In terms of both the EU28 and the EU19, Slovakia achieved slightly above-average values in several years (Tables 3 and Figure 2), but was well below the Czech Republic level and experienced a fluctuating trend.

Table 3: Share of e-commerce in the turnover of small enterprises in the years 2012-2018 within EU28, EU19 and V4 countries in%

	2012	2013	2014	2015	2016	2017	2018
European Union EU28	5	5	6	6	6	7	7
Euro area EU19	4	4	5	6	6	7	6
Czech Republic (CZ)	14	12	15	14	12	12	15
Hungary (H)	3	2	4	5	6	8	6
Poland (PL)	:	:	:	:	5	5	:
Slovakia (SK)	7	9	5	8	7	10	5

Figure 2: Share of e-commerce in turnover of small enterprises (10-49 employees) in EU28, EU19 and V4 countries in 2012-2018 in%



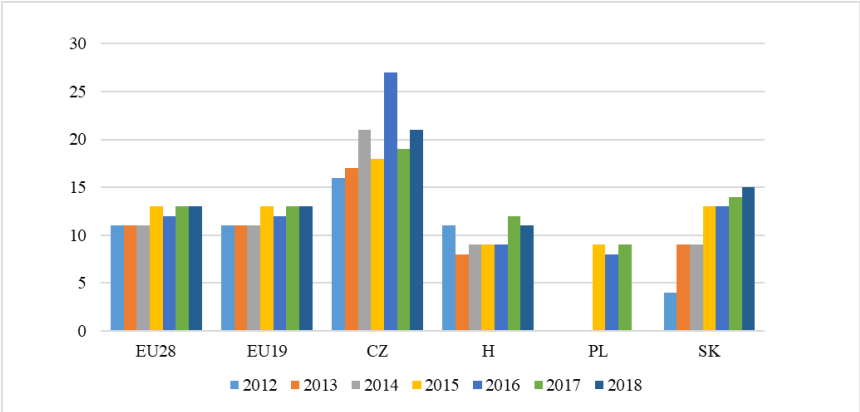
Source: own processing by Eurostat, 2019

- The turnover of medium-sized enterprises (number of employees 50-249) recorded an increasing share with some slight decreases (Table 4, Figure 3) in the Czech Republic and Hungary. Slovakia has seen a steady upward trend and exceeded the EU28 and EU19 average in this category of enterprises in 2016. The increase in the share of e-commerce in medium-sized enterprises was reflected most significantly in the overall increase in the share of e-commerce in the turnover of enterprises in Slovakia. The overall increase was 9 percentage points overall in 2012-2018, but up to 11 percentage points increased in business enterprises.

Table 4: Share of e-commerce in turnover of medium-sized enterprises in 2012-2018 in EU28, EU19 and V4 countries in%

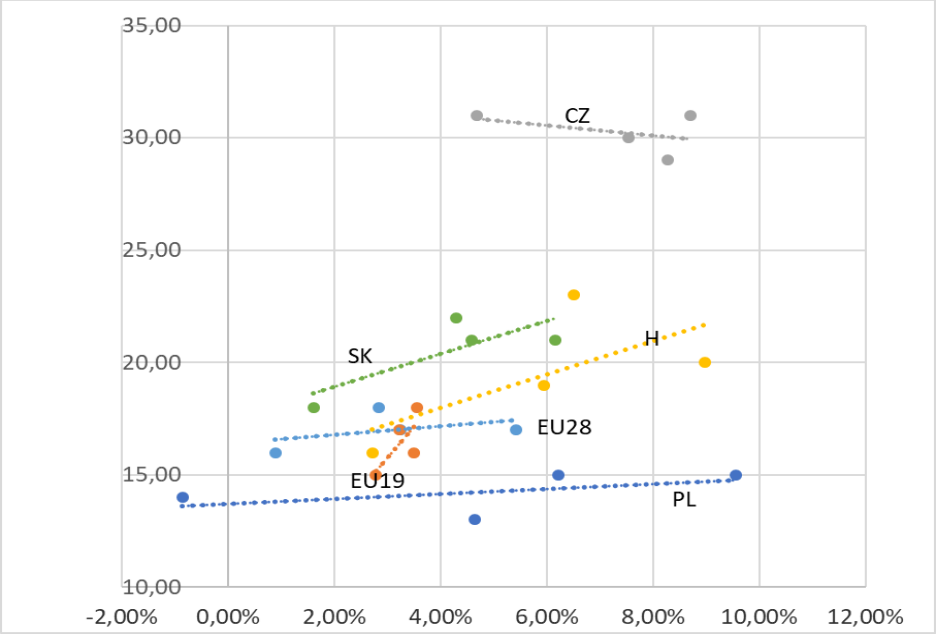
	2012	2013	2014	2015	2016	2017	2018
European Union EU28	11	11	11	13	12	13	13
Euro area EU19	11	11	11	13	12	13	13
Czech Republic (CZ)	16	17	21	18	27	19	21
Hungary (H)	11	8	9	9	9	12	11
Poland (PL)	:	:	:	9	8	9	:
Slovakia (SK)	4	9	9	13	13	14	15

Figure 3: Share of e-commerce in turnover of medium-sized enterprises (50-249 employees) in EU28, EU19 and V4 countries in 2012-2018 in %



Source: Own processing by Eurostat, 2019

Figure 4: Relation between GDP growth rate (x-axis) and share of E-commerce in V4 countries (y-axis) in the 2015-2018 years



Implementation of e-commerce and related e-sales in 2016, 97% of enterprises in the Czech Republic, 93% in Slovakia, 98% in Poland and 96% in Hungary, with an average EU level of 96% (OECD). However, when evaluating the cross-border e-commerce of these enterprises, only the Czech Republic and Slovakia are above the EU28 average of 45%, by 10% in the Czech Republic and 2% in the Slovak Republic. Hungary and Poland are about 8 respectively. 6 percentage points below the EU28 average. Figure 4 shows relation between GDP growth rate and share of E-commerce in V4 countries in the 2015-2018 years. The trend of the relationship is similar for Hungary and Slovak Republic, as well as EU28 and Poland, the direct linear dependence is identified in all countries except Czech Republic. According to OECD data (2019), the indicator of average trade facilitation performance reaches the highest level in Poland, but the distribution of trade promotion steps or practices differs in each V4 country (Table 5). The value of sub-indicators is from the interval <0; 2>. Indeed, the indicator is intended to highlight the barriers that exist in individual countries and hinder the free movement of goods and services in cross-border trade.

Table 5: Average trade facilitation performance and its sub-indicators in V4 countries 2017

Indicator	CZ	H	PL	SK
Average trade facilitation performance	1,55	1.44	**1,66**	1,59
A- Information Availability	1,29	1.24	1,52	**1,67**
B- Involvement of the Trade Community	1,50	**1.75**	1,63	1,63
C- Advance ruling	**1,91**	1.90	1,90	1,90
D- Appeal Procedures	**1,67**	1.23	1,56	1,31
E- Fees and charges	1,79	1.62	**1,93**	1,69
F- Formalities – Documents	1,56	1.33	**1,75**	1,33
G- Formalities – Automation	1,54	1.46	1,58	**1,83**
H- Formalities – Procedures	1,48	1.50	**1,71**	1,61
I- Internal Co-operation	0,91	1.00	**1,40**	1,00
J- External Co-operation	**1,70**	1.18	1,46	1,60
K- Governance and Impartiality	1,67	1.67	1,78	**1,89**

Source: OECD, 2019

5. CONCLUSION

Digital technologies are rapidly changing commerce, business practices and entire companies, institutions or processes. Nowadays they are already an integral part of the economy, part of key innovations, but they are also the essence and bearer of the great economic paradoxes of our time. On the one hand, productivity, wealth and profits are at record highs, while new conflicts are on the rise. Rapid advances in technology create unprecedented benefits while evoking challenges in relation to consumption, allocation, allocation of production factors, efficiency and effectiveness assessments. The analysis of the development of the share of e-commerce in the total turnover in 2012-2018 in the V4 countries shows a clear upward trend also in relation to the EU28 and the EU19 shows convergence. Other changes associated with the ongoing digital transformation both in individual businesses and in the economy as a whole are reflected in changes in the indicator and sub-indicators reflecting performance or efficiency in terms of promoting cross-border trade. However, in order to monitor the changes related to the e-commerce or generally digital economy, it is necessary to focus on defining, defining new indicators of economic development, international trade development or free trade development, which can cover changes caused by changed technologies. This also applies to cross-border data flows. In any case, trends in e-commerce need to be assessed from several perspectives (Bukht a Heeks, 2017). The technological perspective is based on identifying the technologies on which e-commerce is based, e. g. data or information processing technologies and human resources perspectives. The prospect of processes / flows points to support specific business processes (transactions, trade execution). The structural perspective reflects both changes in business models and potentially new structures based on web or network structures.

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MARKETING MIX AS PART OF MARKETING STRATEGY USED IN THE SERVICE INDUSTRIES

Veronika Paurova
University of Zilina, Faculty of Operation and Economics of Transport and Communications, Department of Economics, Univerzitna 1, 010 26 Zilina, Slovak Republic
veronika.paurova@fpedas.uniza.sk

Margareta Nadanyiova
University of Zilina, Faculty of Operation and Economics of Transport and Communications, Department of Economics, Univerzitna 1, 010 26 Zilina, Slovak Republic
margareta.nadanyiova@fpedas.uniza.sk

ABSTRACT
For a business success, it is important to correctly identify the specific marketing goals to achieve, define target customers and customize each tools of marketing mix. The individual activities related to the purchase and sale of the product to the final consumer are part of marketing. Since the present time is characterized by an increase in the provision of services, the paper focuses on the enhanced marketing mix that is marketing mix for services. The aim of the article is to clarify the theoretical basis of individual marketing mix tools. The article deals with various tools of marketing mix, which includes product, price, marketing communication and distribution. This traditional marketing mix is called 4Ps . For service businesses, 4Ps is insufficient and with regard to the specific features of services (immateriality, non-storage, inseparability, heterogeneity) it is necessary to extend the classic marketing mix to 7Ps, specifically a marketing mix of services that include environment, people and processes except traditional 4Ps marketing mix tools . The aim of the practical part is based on the results of the online questionnaire to clarify the views and criteria of consumers on the option and choice of business services. Emphasis is placed on selected decisive tools in the field of pricing and communication policy of company. Based on an analysis of theoretical results, we can say that the individual tools of marketing mix are strongly interconnected, and one tool cannot work without the other. To ensure a successful business marketing strategy, a company must work on activities for each tool of marketing mix.
Keywords: *Marketing mix, Marketing strategy, Product, Services*

1. INTRODUCTION

Nowadays, the competition for customers prevails among businesses. It is very important for companies to differentiate itself from competitors, create a certain position on the market and become aware of customer´s needs. Managers should focus their activities on the marketing strategy and individual tools of the marketing mix because it represents a possibility to differentiate themselves from the competition. As the market is currently very competitive and supply has long exceeded demand in many sectors, a competitive advantage is the decisive factor for a company, as a result of which it can attract many customers and thus remain on the market. The present time also brings many changes. Modern technologies are evolving, progress is being made in science and technology, in medicine, in the automotive industry, etc. The fact remains that the company is driven by employees. On the other side, buyers are also important. Without customers business would not make sense. Not only the company is undergoing changes, but also the people themselves, which include both employees and customers. These changes primarily in higher expectations, demands or changing needs. People are becoming more demanding, something entrepreneurs who decide to enter the market or who are already in the middle of the action must count on.

According to Palus et al. (2014) consumer decisions on products include brand and product-specific decisions. Moravcikova et al. (2017) define brand as the symbol of the product that differs company from the competition. It is essential for businesses to adapt the marketing mix tools to a defined target consumer. The paper focuses on the enhanced marketing mix, that is called marketing mix for services. The whole world is currently characterized by an extraordinary increase in services. This is because there are increasingly complex products that need or even require services in the market. People can afford them because they have enough money and free time (Vastikova, 2014). The aim of the paper is to theoretically analyze the marketing mix in the service business. The individual components of the marketing mix include product, price, marketing communication, distribution, material environment, people and processes. The aim of the practical part is to find out what criteria are important for customers at decision-making on the use of business services, with an emphasis on price and communication. Customers first compare price and quality, then many other factors that will be reflected in their final decision to buy and use the service. The practical part is realized through a questionnaire that focuses on to clarify the opinions on selected components of the marketing mix for services.

2. THEORETICAL BACKGROUND

If an enterprise wants to achieve an effective product that can be a product of tangible or intangible nature, all parts of the marketing mix that are evenly balanced are needed. No part should be neglected, as this could have a fatal impact on the resulting product, which would not be as competitive as the business would like. The current business environment is influenced by technological change, new information technologies and new business practices. To meet customers' expectations and meet their needs, a competitive advantage strategy needs to be developed (Mohammadi, 2018). One of the ways a business can do this is to use the marketing mix effectively. According to Birnerova and Krizanova (2012), marketing is a social and management process by which individuals and groups acquire what they need and demand through the creation, supply and exchange of valuable products with others. Marketing mix is a set of marketing tools that a company uses to achieve marketing goals in the target market. These tools are used by the company to stimulate customer activity. With a good understanding of the needs and expectations of the customer, the company can use the various elements of the marketing mix to guide the consumer behavior (Kliestikova et al. 2018) according to the needs of the company. Therefore, for a number of variables that the individual elements of the marketing mix contain, it is advantageous to reduce them to basic groups called 4Ps (Csikosova and Janoskova, 2018). Well-known formulation of the marketing mix was first developed by McCarthy in 1960. These 4Ps include product, price, distribution, and marketing communication (Kita et al. 2017). Company only have a successful product if it have all the necessary components of the marketing mix in the puzzle (Marusic, 2019).

2.1. Marketing mix for products

The basic marketing mix (4P´s) include product, price, distribution and marketing communication. It is a marketing mix that is used for products.

2.1.1. Product

The product can be anything the company offers on the market to meet customer needs. It is important that the business chooses the product - the tangible nature or service - the intangible nature in which the potential customer is interested. Every customer has certain ideas and expectations about the characteristics and quality of products and services that the company is trying to satisfy (Kita et al. 2017). A product in the broadest marketing sense is everything that serves the needs of target or relationship groups.

Products are understood in this sense as the essence of the existence of a company without which other elements would not be effective (Vysekalova and Mikes, 2009). Birnerova and Krizanova (2013) define the product as the most important tool of the marketing mix, because the other tools of the marketing mix, which are pricing, building distribution, communication, process rationalization, customer service and the like, depend on the nature of the product offered. In relation to the product it is important to point out two types, namely the tangible and intangible product, which are also called product and service terms. Kotler (2007) defines products as products of material substance which are means of providing services. On the other hand, services are products of an intangible nature which are activities for sale that do not confer ownership. Birnerova and Krizanova (2013) in relation to the product itself point to the importance of product policy, whose essence and culmination is the creation of supply. Depending on whether it is a manufacturing undertaking or a service undertaking, the concept of product policy can be replaced by the concept of product policy for the manufacturing undertakings, or performance policy for service enterprises. They also set out the main product policy challenges, which include demand-driven supply creation, demand-driven supply change, competition-driven supply change, and internal-market-driven supply change. It is recommended to make these changes after performing analyzes that are appropriate to determine the position of the assortment, such as. analysis of product life cycle, assortment structure analysis by age, by customer, by revenue share and by profitability.

2.1.2. Price

Price is a monetary expression of the value of the product. If the price is proportional to the quality of the product, the customer is willing to pay for what he / she is expected to satisfy. If prices are too high, it discourages customers, on the other hand, too low prices given off to customers. Therefore, if the price is incorrectly determined, the company loses the customer and the customer buy products or use a service from a competitor. Prices are based on product, distribution and marketing communications decisions, but it is also important to take into account many internal and external factors. It is important for the business as the price of income to consumers, because if customers do not buy the product, it tells us that the business is priced incorrectly. Pricing itself can be influenced by internal and external factors. Internal factors affecting pricing include marketing goals, marketing mix strategy, costs, pricing decisions. External factors affecting pricing include for example market and demand nature, competition (Kita et al. 2017)

2.1.3. Distribution

Distribution combines both production and consumption. The way the manufacturer chooses to distribute also affects other marketing decisions. In the past, the sale of products was easier, proceeding directly from producers to consumers. Today, this journey is more complicated because there are intermediaries on this road. Most of them do not take the products into their possession, but thanks to various contacts and strategies they sell goods with profit. We know several types of intermediaries. Wholesalers and retailers are intermediaries who buy products they own and then sell it in a way that they profit from it. Another type of intermediaries are the so-called. business intermediaries, including brokers, manufacturers' representatives, sales representatives. In this case, intermediaries do not purchase products into their property. Their job is to find and reach suitable customers, who then try to convince them to buy the product on behalf of the manufacturer. The last type of intermediaries are: transport companies, warehousing organizations, banks and advertising agencies. We can call this type of intermediaries one aggregate name, the procurers. The role of contracting authorities is to ensure distribution channels between the manufacturer and the consumer, as in the previous case, the product does not go into their ownership, nor does it mediate these transactions (Kita

et al. 2017). The distribution includes transport services (Poliak et al. 2014). Thanks to the distribution path, the goods get from the producer to the consumer in the required quantity, time, space and ownership. Direct distribution or direct marketing means that the sale of goods takes place directly without cooperation with intermediaries. The manufacturer delivers the products to his stores and then sells them to the consumer. Indirect distribution already involves intermediaries in its sales. It can work with either one or more, depending on the complexity of the distribution path. Accordingly, we distinguish several levels of distribution channels. There are 4 levels in theories: zero level, one-level road, two-level road, and three-level road. There is a manufacturer at each beginning and at the end there is always a consumer, because both are active and thus part of a given distribution (marketing) path.

2.1.4. Marketing communication

Companies try to find a way of communication with their customers, how to inform them about their products. It is understandable that if the consumer does not know about the product, he or she cannot buy it. That is why it is necessary for the company to create an effective marketing communication which we can divide into a personal and impersonal form of communication. Personal form can include personal selling and impersonal include advertising, sales promotion, direct marketing and PR (public relations). If we combine personal and impersonal form, the result is fairs or exhibitions. Over time, other techniques have emerged, such as guerilla communication. Kosiciarova (2017) sees the importance of communication in particular in that it allows to influence individuals as well as groups, modify their behavior, achieve effective changes and consequently the respective goals. Business communication represents all means of communication, a complex of all forms of behavior by which an enterprise shares something about itself, whether with the external or internal environment. Concerning communication Dedina and Odchazel (2007) state that communication clearly influences the performance of the whole organization and therefore it is necessary to pay sufficient attention to it. Managing communication can bring a competitive advantage to an enterprise, and underestimating it is likely to lead to major problems. Therefore it is necessary to pay attention not only to classical communications, but also to communications influenced by technological changes. These are the Internet, discussion groups and other new forms of communication between individuals and between organizations and individuals. The aim of marketing communication is to adequately address individual target groups so that positive attitudes towards the company are created, so that corporate communication becomes an important and integral part of the marketing strategy (Mikes, 2009). In the context of the communication Dedina and Odchazel (2007) point out the importance of electronic communication, which, although it has many forms, due to the rapid development of information technologies, it is possible to expect the emergence of other forms. Enterprises use both the Internet as a global network and their own intranets for electronic communications. The Internet contains a wealth of information on a variety of products, businesses, technologies, and options, so the worker, rather than finding a problem, solves how to choose what is really needed and up to date.

2.2. Marketing mix for services

According to Vastikova (2014), the service is a set of tangible and intangible elements that contain functional, social and psychological benefits or benefits. The product can be an idea, a service or a merchandise, or a combination of all three outputs. In service marketing, the company focuses primarily on the customer and the market. According to Berry and Parasuraman (1991), service marketing is based on the quality of services because they are at the heart of the product, which is performance. For the consumer, performance is what he or she buys. If they have a strong performance in providing services, this is the basis for building their competitiveness.

This will increase consumer confidence, increase the image of the company, reputation, brand, strengthen marketing communication, etc. The quality of services is influenced by various parameters determined on the basis of an effective strategy (Pakurar et al. 2019). Services, such as products of intangible nature, differ from products of material nature by their specific properties, which include: immateriality, inseparability, heterogeneity (variability, diversity), non-storability. According to Simanjuntak et al. (2020) the 7P marketing mix strategy can provide to company outcomes as input in the future. Immateriality means that consumers cannot touch, see, feel, hear, simply evaluate or test them with any physical sense. The customer at risk of buying them because they verify their reliability, quality, credibility, etc. It can only be purchased and consumed. Customers choose to purchase a service based on reviews, referrals, or price (Vastikova, 2014). Another characteristic of services is their inseparability. This applies to most services, as production and consumption, respectively. the services are provided simultaneously - at the same time and in the same place. We can say that both the manufacturer and the customer are part of the reproduction process. (Birnerova and Krizanova, 2012). The concept of heterogeneity, variability or diversity is primarily related to a certain standard of service quality (Vastikova, 2014). The service does not work on the principle of goods, when it is possible to produce one and the same product several times in succession in the same quality. Who, where, when and how the service is provided plays an important role in providing the service, as the resulting service may not always meet the required quality standard and this can be a problem. In order to avoid disagreements between service providers and customers, it is important that staff is carefully selected and adequately trained; it is also important to ascertain customer satisfaction (Kozhakhmetova et al. 2019) for example whether they are satisfied with the quality of provided services, etc. Princes (2019) points out that customer satisfaction is increased by improving management strategies and product innovation. Non-storability can be associated in some way with immateriality, because what is immaterial cannot be stored. In this case, the manufacturer cannot and cannot produce the services in advance and therefore cannot be accepted for storage (Hartmannova and Otrubcak, 2019). These specific characteristics of services indicate that service companies are more demanding than manufacturing companies and therefore it is necessary to strengthen and at the same time to extend the basic tools of the 4Ps marketing mix to support the original ones. The classic model of the marketing mix 4Ps and an advanced marketing mix of services 7Ps. Enhanced marketing mix of services is extended in addition to original elements, ie product, price, distribution and marketing communications, extended to physical environment, people and process.

2.2.1. Physical environment

Due to the immaterial nature of the service, the customer cannot assess the service in advance before consuming it. This aspect increases the risk of purchasing the service. In a way, the material environment is in some way a proof of service quality. It may take different forms, whether it is a building where the service is provided or a brochure where the specific service is specified, eg. theater performance. The quality of service can also suggest something of employees' clothing, which is typical for the company dresscode, eg. hotels, airlines, etc. (Vastikova, 2014)

2.2.2. People

Until recently, technical terminology did not take into account the human factor as one of the tools of the marketing mix. However, it has been found that the provision of services bears a mark of inseparability as well as heterogeneity (Hartmannova and Otrubcak, 2019). Customer contact with service providers usually occurs when they are provided. Also because of this, people are becoming one of the important elements of the marketing mix of services. It has a direct impact on their quality that is not only affected by the providers but also by the customers

who are part of the service satisfaction process. Each company should therefore focus on employee selection, training and motivation as well as overall working conditions (Lemke, 2019). It is also important that rules on customer behavior are established. Both sites have an important impact in creating favorable customer-employee relationships (Vastikova, 2014). According to Maris (2019) workers mainly relocated to market services industries, such as retail trade and distribution.

2.2.3. Process

It is important to look more closely at how the service is provided, as it consumes the interaction between the provider and the customer. If people have to wait for hours to process their request, they are not satisfied with the provision of the service. If company give the customer little information about the benefits or insufficiently explain the comparison with competing products, the customer leaves dissatisfied. For this reason, it is important to regularly analyze the processes, how the services are provided, and also thanks to this it is possible to subsequently simplify the individual steps that make up the process (Vastikova, 2014). If the process of providing a service is at a high level, it differentiates the services. If banks provide homebanking, clients will greatly appreciate it, because they do not have to wait in long lines or look for a place to park (Hartmannova and Otrubcak, 2019).

3. METHODS

The survey file consists of 365 (100 %) respondents. In the online questionnaire survey participated 193 women, representing 53 % of the survey and 172 men, what is 47 % of the survey. The questionnaire focused on issues related to consumer decision-making related to selected tools of the marketing mix for services, with an emphasis on price and communication. We found out what criterion consumers choose when choosing a service business. With regard to the price tool, we investigated whether card payment or cash was the decisive factor for the business. In connection with communication, we found out which source of information about the company is crucial for consumers and where they most often get to know about companies.

4. RESULTS AND DISCUSSION

When asked about what criteria customers choose a service provider, 47% said they choose it based on price. 21% of participants choose a service provider based on the quality and speed of service provision. For 11% of participants the criterion is the professionalism of employees. In this case, we can say that the correct pricing is the most important criterion on the basis of which the vast majority of customers decide to buy the service. In the context with the price, we found that if the company offers the option of paying only in cash, 76% respondents would welcome the possibility of paying by card. 7% of respondents said that they did not care how they pay and the remaining 17% said that they would not welcome the possibility of paying by card, so they are satisfied with the payment in cash. It follows from this question that an absolute majority would welcome and be interested in this possibility. In the context of marketing communication, we found out where consumers most often get to know about companies, it means which source of information about the company is crucial for consumers. For 43% of participants family, friends and acquaintances, who already had previous experience with the company is the decisive source of information, on the basis of which they gave positive references to other people. Another source of information is promotion through social networks. The fewest respondents marked business cards and posters. It is therefore clear that there is no need to invest in this form of advertising, as it attracts the least attention from potential customers. This is especially related to today's times that is significantly influenced by technology. 8% of respondents marked the official website.

According to Durica and Svabova (2015) there are characteristics that can help the company to choose the optimal marketing strategy and getting new customers. Many customers choose a given product and service with respect to price. Determining the right price is an important step, because the customer puts a relationship between the price and the quality of the service, and if the price is incorrectly determined, the company can loses the customer. This is confirmed by research of Krizanova and Majerova (2013), according to which the most frequently reported reason for the product selection is the price. It is important for companies to decide on the use of the distribution policy and also on the chosen level of distribution path. Marketing communication is an important element in the marketing mix, because this way the customer gets information about the given product and the producer on the other hand about the customer. In marketing communication, it is an important decision to correctly assess what type of promotion is most suitable for promoting a given product. If the type of advertising used is incorrectly determined, it can have a significant impact on gaining potential customers. Traditional types of promotion include, for example, business card advertising and loyalty cards that promote sales. Even though many people still use traditional ways of advertising today, it is important to implement marketing communication through modern communication tools, such as: via the Internet. Establishing a website is now a matter of course for the company. Another way to promote your products or services is to use social networks, where an incredible number of people meet in one place. The most popular tools include an account on both Facebook and Instagram. The advantage and disadvantage is that on social networks is the possibility of evaluating the company. No one knows in advance whether reviews will be positive or negative. What is clear is that it will have a big impact on customer demand. According to Bartosik-Purgat (2018), the main factors influencing consumers' purchasing decisions include countries of origin and brand image. Roles of value congruity and brand image in creating a consumer commitment that leads to positive word of mouth confirm also Valaskova, et al. (2018). In providing services, people are an integral part of the process. For most services, employees and customers are in constant contact. Based on the interaction of employees with customers will also reflect the quality of service provided. If the employee is unpleasant and does not follow the basic ethical and moral rules, the customer can use the services of competitors. That is why it is important to create an environment for employees in which they feel good, so that they can then transfer their good mood to customers. Due to the fact that services are of an intangible nature, it is not possible to assess their quality rather than when providing them. The material environment may contain special and unique elements that can differentiate it from the competition. In relation to processes, in the provision of services is manifested, for example, the relationship between the service provider and the customer in different situations.

5. CONCLUSION

Based on theoretical knowledge, we can say that the individual elements of the marketing mix are connected and interconnected. For a business to be successful, it is important that it pays approximately the same attention to each tool of marketing mix. All are essential for the smooth running of business. Given the answers, it can be said that modern times and technical progress have a significant impact on consumer behavior and decision-making. This is confirmed by the fact that consumers prefer to pay by card instead of cash. This is also confirmed by the response to marketing communication, and thus that consumers prefer promotion through social networks compared to traditional marketing communication tools such as business cards and posters. It is essential for businesses to constantly monitor developments and trends in marketing, focusing on individual specific marketing mix tools, whether for products or services.

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CHANGES IN WORK OF TRUCK DRIVERS FROM THE ASPECT OF SAFETY AND PSYCHOSOCIAL RISKS

Viera Sukalova
University of Zilina in Zilina
Univerzitna 1, 01026 Zilina, Slovakia
viera.sukaloval@fpedas.uniza.sk

ABSTRACT

Working environments are continually changing as a result of the introduction of new technologies, changes in the way work is organized and shifts in economic, social and demographic conditions. We can see rapidly advancing technologies, digitalization, robotics, and the use of nanotechnology, among others, have revolutionized the workplace and have an important influence on the safety at work. The occupational and operational risks arising from driver-vehicle interaction in the field of road transport are considered to be one of the most important health and safety challenges not only for workers but also for their surroundings. Current problems of traffic and carriers, lack and aging of drivers create the need to use new technologies. Countless goods are shipped around the world every day, hundreds of goods trucks continue to flow daily between countries but the biggest contributor to this is the industry, which has been suffering from a shortage of labour for many years. Alternative vehicles with new operating parameters are coming to the market, which respond to congestion, environmental demand and facilitate driver work. Technological developments over the last 20 years have set new standards in the area of driver-vehicle interaction. This development, socio-economic on the one hand, technological on the other, makes automotive ergonomics: Driver-vehicle interaction an important topic to explore in this area. Also coronavirus crisis is changing the world, is affecting freight – transportation business and is bringing new risks at work; some truck drivers are putting in overtime without enough protection. The article is focused on the analysis of psycho-social risks and safety problems in the work of truck drivers and modern trends of solutions, actual problems of labour market in this area such as luck of drivers and their aging.

Keywords: *Driver, Management, Psychosocial aspects, Risk, Work*

1. INTRODUCTION

Over the past two decades, a new pattern of work is emerging as the knowledge economy realizes the full potential of both new technologies and new organizational models. The changes fall into the following domains and these are Cognitive competence and Social and interactive competence. Workers are expected to be more functionally and cognitively fluid and able to work across many kinds of tasks and situations. Increased complexity of work—Workers need to know more, not only to do their jobs and tasks, but also to work effectively with others on teams. Many knowledge-based tasks require sound analytical and judgment skills to carry out work that is more novel, extemporaneous, and context based, with few rules and structured ways of working. Human induced climate change is a major driver transforming the world of work. The demands of an increasingly globalized world have led to a growing number of workers involved in excessive hours of work and non-standard forms of employment. The growth of the globalized platform economy has blurred the lines between home and work – on one hand reducing the stress associated with commuting and increasing self-reliance, while on the other hand, creating unique psychosocial pressures for workers attempting to balance the demands of work life and home based responsibilities. The difficulty comes with the need to consume and make sense of new information. Information overload, coupled with time pressures and increased work complexity, lead to what psychologists call "cognitive overload

syndrome (COS)." Symptoms of COS include stress, inability to concentrate, multitasking, task switching, and a tendency to focus on what is easy to do quickly rather than what is important. Fatigue and speeding are a common cause of accidents for truck drivers, buses and company cars. In industrialized countries, road accidents are the most common cause of employment-related deaths. These issues are also addressed by the European Parliament, which adopted a proposal to modernize the training of professional drivers so that emphasis is placed on road safety, for example by protecting vulnerable road users and using driver assistance systems, optimizing fuel consumption and introducing new technologies such as e-learning; clarified the minimum age rules laid down in the Professional Drivers Directive and the EU rules on driving licenses and ensured that the training received by the person in an EU country other than that in which he or she lives was also recognized in his / her country of residence . Particular attention needs to be paid to truck transport from various aspects, whether in terms of ecology, but also of the safety of traffic affected by driver-vehicle interaction, or in terms of protecting drivers' work in this sector. It is necessary to identify the psychosocial aspects and risks of the driver's work in order to manage them according to new trends in the era of globalization. The need to explore the psychological aspects of work and working relationships is constantly increasing. In the context of economic growth and rising living standards during the period of globalization, there are some negative phenomena in the labour market. By analysing the labour markets in developed countries from the level of macro indicators of social indicators, it is possible to identify the impacts of trends such as changing the structure of employment, increasing income inequality, decreasing coverage and generosity of social insurance systems, the emergence of new forms of working relations, the loss of job security, reducing the employment of older and less qualified workers. (Juríčková and Staněk, 2004; Brym, 2001) Our research was focused in the work of truck drivers and their impact on safety, health and psychosocial risks, as well as related labour market issues. Perceptions of these problems, including the current coronavirus crisis, were found in a sample of truck drivers. Methods of description, structured interview, analysis of secondary sources and synthesis were used.

2. PSYCHOSOCIAL RISKS AT WORK

In addition to physical risks, work-related psycho-social risks are considered to be an important aspect of operational safety in transport, including lorry transport. This is related to workplace problems, such as work-related stress and violence, harassment and bullying. In addition, stress seems to be related to performance deterioration, increased absences and accidents. Excessive stress threatens the health of employees and prevents a person from coping with any other claims. Psychosocial, by definition, means 'the interaction between psychological and social factors'. It means interaction in both directions, from social factors to mental and vice versa. Use the editor to write equations for writing equations and relationships. Number the equations with the appropriate number in the parentheses on the right side of the equation.

2.1. Psycho-social risks in driver-vehicle interaction

Psychosocial risks can be defined as those aspects of work organization and work management and their social and environmental context that can potentially cause psychological, social or physical harm. In addition, traffic is more busy, drivers are also burdened by a complicated social climate and complicated working conditions. Over the years, they have also learned to drive more defensively and readily. Driving is a relatively simple activity, but the driver's personality is reflected in this activity and is therefore part of traffic management. Safer and better cars make driving easier and safer on the road. The main factor of the problems is always the personal and social level of the driver. Correct assessment of situations affects not only experience but also the level of innate intellect, ie healthy intellect and ability to interact with other road users.

Life on the road, with all its consequences and consequences, acts like a triangle: the driver - the road - the car. The main cause of road accidents is the driver, who often cannot cope with the increase in traffic density and increasingly efficient cars. The fact that work-life balance is becoming increasingly difficult to achieve is also a significant impact on the emergence of risks. Tensions caused by working in such conditions may result in workers being exposed to psychosocial risks, which in turn may affect physical, psychological and social health. (Taylor and Dorn, 2006) The driver's activity is characterized, inter alia, by the control or operational provision of the operation of the equipment or freight transport processes (the lorry is the equipment and the driver ensures its operation; drivers have a logical communication problem in individual EU countries, but it is not possible to manage all European languages and those who are concerned about the organization of the place and burden of loading and unloading in individual companies, catering, hygiene, etc.) with possible responsibility for the health and safety of others (directly responsible for the health and life of their colleague in the cabin, eg in the case of goods handling, such as errors, accidents, etc.) or for material damage. The main physical risks and risks include: vibration exposure and long sitting (seat shape, cab design and other equipment), manual handling, noise exposure - during loading and unloading, driving the vehicle (engines, tires, fan, etc.) (Exhaust) gases, chemicals on board, fuel, exposure to road dust during loading, unloading and rest, washing and preparing the vehicle), climatic conditions (heat, cold, drought, rain, etc.), limited range of ergonomic work conditions and healthy lifestyle. It is necessary to identify the psychosocial aspects and risks of the driver's work in order to manage them according to new trends in the era of globalization.

2.2. Psychological requirements for driver work

Every professional driver must have a valid psychological test. Drivers younger than 50 years old must not take an examination more than 5 years old and after 50 years the test must be repeated every two years. Testing focuses on intelligence, memory, attention, sensitivity, stress and aspiration. Personal qualities such as emotional stability, aggressiveness, risk appetite are also important. Testing is usually sent by the employer of the driver if he / she is involved in a serious traffic accident - then it is determined whether their poor mental state could be involved. A deteriorating mental state can be a temporary disposition - for example, high temperatures, personal problems, prolonged illness that shows irritability to aggression (eg diabetes), but also dementia or other mental illnesses. Driving a motor vehicle is a demanding and complex activity that requires constant preparedness and sensitivity of the organism to incoming stimuli, which may occur on a conscious and unconscious level and are dependent on several variables. From driver skills, skills, experiences from various cognitive determinants to receiving and processing information from outside and inside the world. In traffic psychology it is mainly about perception, attention, memory and decision making. Emotions and moods and different personality variables such as temperament, motivation, attitudes, values and interests are also important. In addition to cognitive and personality variables, the driver's psychomotor, flexibility, coordination of movements and speed and accuracy of response to driving also play an important role. The basic characteristics of the driver required to drive a motor vehicle are:

- Perceptiveness - visual, spatial vision, acoustic perception, concentration,
- Psychomotor skills - speed and accuracy of responses, movement coordination, flexibility,
- Intellectual abilities - cognitive, logical, analytical, practical and critical thinking, visual memory. (Havlik, 2005)

Skills reflect the wide range of prerequisites needed to successfully carry out certain activities and skills. They evolve on the basis of innate dispositions through education (social education, classroom education or training). By default, skills are divided into general abilities - intelligence and special abilities, including verbal, numerical, memory, psychomotor, and

spatial fantasy, perceptual alertness. In order to carry out the activity successfully, we must achieve a certain degree of intellectual ability. For drivers without increased responsibility, a minimum IQ of 70 is set, for drivers with increased responsibility = IQ 85. In addition to general component intelligence, logical and analytical considerations, concentration, perception, spatial orientation, attention, psychomotor coordination, speed and accuracy come to the fore reactions, reaction time, etc. The response to the situation is a function of human capabilities; it is the relative ability or inability to adapt to the requirements of the traffic situation, whether these requirements are imposed on the ability of people or their psychological, physical or social capacity for the task. The extent to which they are able to cope with the situation and the adequacy of their adaptation will depend on the agreement of the whole set of factors in the individual, many of which are changes during his or her life. It therefore appears that an accidental disability of an individual at any time reflects his or her ability or inability to remain in balance between these factors. (Shaw et al.,1971; Atkinson. et al., 2003) Perception or perception ensures the reception and processing of information through a sensory system that provides us with the basis for interaction with our environment. Perception occurs when an object perceived in some way reflects the characteristics of the surrounding world. (Stenberg.2002) Driver's attention is one of the main factors of safe traffic. Attention is a condition of every conscious human activity. Concentrating our attention threatens us with inexperience, emotions, ideas, tension, fatigue, stress, lack of sleep, weather, mood, alcohol, drugs, smoking, drugs. It is also necessary to realize that attention is also influenced by the daily rhythm. The conductor is considerably narrower and not very wide. During the journey, the driver needs to be constantly focused and distributed, adapted to the current traffic conditions. (Šucha, 2013; Jex, 2002) Combinations of psychosocial and physical stressors appear to occur frequently and, when they occur and the duration of exposure is long, may show a low to moderate interactive effect. Early termination of employment is likely to cause premature disability. Other important factors affecting driving safety include age (at least people aged 35 to 45), health, medicines, stimulants or narcotics (alcohol, coffee, drugs, cigarettes, etc.). (Havlik, 2005) This implies that in traffic situations where we can act responsibly, that is to have sensible responses (thinking, behavior, negotiation) to a given traffic situation or inappropriate if it may be an instinctive short-circuit reaction (eg braking in a situation where it would be better to avoid a dangerous situation by accelerating or accelerating or responding to an unexpected situation that covers your eyes instead of holding the steering wheel and control A specific combination of risks and a combination of factors such as ergonomic risks, work-related stress factors, noise, hazardous substances, vibrations, unusual working hours, home and work, lack of equipment, difficult working conditions, the need for constant adaptation, and the many structural changes that have taken place in this sector are a particular challenge for monitoring and prevention Workplace health interventions to improve the health and well-being of drivers can be implemented through various health promotion interventions. should have In the road transport sector, as in any other sector, it is important to pay attention to working conditions to ensure qualified and motivated employees. Compared to other sectors, however, some characteristics of this sector make risk management more difficult.

3. ERGONOMICS AND NEW TECHNOLOGIES

Ergonomics of the workplace are of great importance in the work of the driver. Ergonomics is a scientific discipline aimed at creating optimal conditions for the performance of a worker and ensuring his health is maintained. In addition to these factors, the use of ergonomic principles also has a positive impact on economic indicators. Ergonomics is directly linked to the detailed design of workplaces. A quality and efficient data collection system is essential for carrying out evaluations and analyzes (Slamková et al., 2010). Measurement of psychophysiological functions is an objective view of the functioning of the nervous system, especially its

autonomous part, which is most affected by stress and stress. This stress activates the sympathetic branch of the autonomic nervous system, which in the long term leads to irritation, acceleration and entanglement of breathing, problems with digestion, muscle tension, headaches, fatigue, sweating of the hands, cold limbs (not limping). In the work process, this results in irritation, worsening of concentration, increased error rate, propensity for accidents and injuries, and reduced labor productivity. Using the CAPTIV sensory system, it is possible to measure the effect of the load on the human organism in the work process and to minimize the effects after ergonomic measures have been identified (Kramarova and Gašo, 2016). Intelligent safety systems include adaptive cruise control (active cruise control that helps the driver maintain a specified distance from the front of the vehicle); the emergency braking warning alerts the driver when there is a risk of collision with the vehicle in front and, if necessary, activates the brakes as well as a warning to the driver to warn the driver to take a break if he experiences any signs of inattention or fatigue. Perfect sensors and an intelligent control system are crucial for autonomous vehicles, but equally important is legislation and precise rules on how an autopilot is to be maintained in critical situations. Autonomous systems are improving and will continue to evolve, but one still has an advantage over technology, but this is not generally the case. It can be expected, for example, that a young inexperienced driver, or a senior with limited visual, auditory and weaker responsiveness, will drive the vehicle less reliably than a good autopilot. In particular, one has the advantage of being able to make better decisions in unusual situations, for example being able to keep driving in its lane even when the traffic signs are missing. However, the driver's perception of the traffic situation is limited in low visibility and at night. In the dark, when the lights are on, one can see at a distance of about 75 m, but the stereo camera can see at 80 m, classic camera at 130 m, long-range radar up to 200 m. Some of these sensors can monitor the environment in multiple directions simultaneously.(Prochazka, 2020) Freight transport is still under investigation, not only because it is the backbone of logistics, but also because it is associated with negative externalities, including pollution, congestion and accidents. According to the European Agency for Safety and Health at Work, road accidents are the second leading cause of fatal accidents and about a third of work-related fatalities in the EU are related to transport. (Castro-Nano et al., 2015) Transport is a key factor in the modern economy, with truck transport playing an important role; however, its development is associated with a number of negatives, such as the increasing number of road accidents, the emergence of traffic congestion, but also the safety and health of drivers working in lorry traffic as a result of driver-vehicle interaction. Research in this area is therefore necessary not only from an ergonomic point of view or in the context of technical progress, but also from a legislative aspect where application practice encounters, for example, the problem of monitoring driver work through information technology and respect for human rights in privacy.

4. RESEARCH RESULTS AND DISCUSSION

On the sample of truck drivers, their perception of the current problems of their work in terms of their impact on psychosocial risks was ascertained. In our research we used a structured interview method with 36 truck drivers operating in Europe. The greatest problem is the demanding organization of work time and the variety of transport activities and interaction with the vehicle's technical equipment. An important part of the provision of transport services is the feedback, which ensures an efficient flow of information, as the efficient exchange of information enables the desired quality to be achieved quickly and purposefully. The driver participates in a responsible way of doing business and fulfilling obligations in accordance with applicable laws, regulations and legal regulations.Another major problem is the high level of responsibility for the safety of the freight and traffic safety. Most drivers experience permanent stress and insufficient workforce regeneration.

In the current situation associated with the coronavirus crisis, drivers are exposed to increased health risks. In this situation, they ensure the transport of cargo across Europe while respecting safety breaks and rest. Strict state emergency measures have exceptions, they does not apply to freight drivers who pass through or perform the transport, loading and unloading of goods. Compared to tourists, the movement of drivers during their work cannot be considered a stay among a larger number of people, their interaction with other people is significantly lower. Freight truck transport is permitted on both national and international routes to ensure the supply of the population. Truck drivers (professional) must be equipped with protective equipment which their employer is obliged to provide. Truck drivers and supply drivers are also exempt from quarantine. However, they must be equipped with protective equipment and comply with all hygiene measures. Hundreds of goods trucks continue to flow daily between countries. However, strict precautionary measures shall accompany the loading and unloading of the goods. Drivers talk about avoiding access even locked toilets. Carriers who carry freight to risk countries despite the risks, ordered hygienists to equip vehicles with disinfection and protective equipment. Without them, trucks in many companies will not let them into the premises or refuse to serve them. In doing so, they are exposed to the risk of contamination by direct contact, even if they follow all precautions. They do not have to comply with quarantine measures, but there is a growing concern about the transmission of the disease to family members, not to mention the harmonization of family and working life and work congestion. Psychological factors include psychological workload, psychosocial stress in the workplace, pathological relationships - mobbing, bossing, bullying. In developed countries, psychosocial factors and labour organization factors become major occupational hazards. Psychological stress can be defined as a process of psychological processing and alignment with the requirements and influences of the environment and the working environment. Long-term psychological stress can result in health disorders such as certain psychosomatic diseases (e.g. ischemic heart disease, ulcer disease, and hypertension) and health disorders. Risk factors of work have been identified that are clearly associated with significant mental workload. The most important indicators that describe the situation on the labour market are unemployment rate and unemployment duration. Nowadays, the area of human resources in road transport records a lack of drivers. On the one hand, this can be addressed through increased recruitment motivation, but many road transport companies realize that driver shortages will become an increasing problem and are starting to focus on autonomous vehicles and automated logistics driving. However, such a solution is rather a solution for the future, as technical and legal problems make this area still at the stage of finding solutions. An effective approach to managing risk is determined by a number of factors of non-economic nature. (Wenning et al., 2020; Dmytrów and Bieszk-Stolorz, 2019; Belas et al., 2018) An important factor in the motivation of road transport employees is the corporate culture of the company in which drivers work. An important factor of motivation is if the company emphasizes safety within the corporate culture and creates conditions in which the safety of drivers, but also the safety of the logistics process in the first place. Drivers are quite easy to identify with this, as it directly affects them and often motivates them to stay long-term in employment in such a company.(Lee et al., 2020) The lack of professional drivers in Europe has been a growing problem in recent years. Unfortunately, the opening of borders and the employment of drivers from Eastern European countries helped only temporarily. Where the “hole” was paid for at the other end, it arose and, therefore, in countries where drivers came to Western Europe for driver work and better conditions - especially pay, there was also a lack of drivers.(Lysionok. 2019) According to the International Road Transport Union, the European sector has been facing the greatest loss of drivers in decades. Recent surveys have shown a shortage of drivers of 21%, meaning that every 5th position on the road freight driver is free. However, this trend is not going to fall far away or to rise rapidly in the coming years and it is expected that it could already be 40% in

this period (2020). This is in a sector such as road freight transport, which serves us all for the everyday life, unimaginable and difficult to solve. Germany and England - two excellent economies and huge countries - will serve us to better illustrate this situation in concrete figures. While in England there are up to 50 vacancies per day in Germany, the average driver age is 47 years, which means that in 2027 about 40% of them will retire, creating a massive shortage of 185000 vacancies.(Kulikowska – Wielgus, 2019; Bin and Tran, 2019) The profession of truck driver is unattractive to young people. The problem arises, in particular, in the fact that this occupation, apart from the above-mentioned reasons, represents constant pressure and stress, which in most cases is discouraged and not even worth the better salaries compared to other sectors, not to mention the lack of education for this profession. Human capital is often viewed as the only resource that can be constantly developed, and it can be denoted as the key in the long term in efforts to increase the level of organizations. Political transformations led to profound changes in systems of values amongst adults and youth alike. Even though the pro-family and pro-professional orientation still exists amongst adults and youth, the market economy conditions have seen significant revaluations in the assessment of other goals and life aspirations as well as work-related aspects. Work has become a value and source of other highly esteemed values (income earned, satisfaction with achievements, intellectual development, social respect, and recognition, prestige). (Stacho et al., 2019; Swadźba et al., 2019) Manpower is deemed as a key axis for social, political and economic activities etc. Therefore, proper administration of this source is assumed as one of the important strategies for comprehensive development and if they are employed with appropriate composition, evaluation, stabilization or displacement of them based on the competency system may be compensated for possible shortages of other sources. The competent management is deemed as the main axis in economic, social and cultural development for organizations. (Chlebikova et al., 2015; Kral and Bartosova, 2016) Human resources management in road transport has its specifics, with emphasis on the reliability of the worker and the orientation of the worker on the customer. It is therefore essential that every road transport company creates the conditions for the continuous development of its workers. It is essential for the management of transport companies and all stakeholders:

- to give some priority to the safety and health protection together with , environment and economy problems,
- to enhance the quality of workers in the area of safety and health protection at work, responsibility and cooperation,
- implementation of safety and health protection responsibilities, environment protection into future goals and processes and activities,
- to give information authorities, workers, society, costumes about risk by economic activities, legislative rules and prevention,
- to inform customs about the safety operation.

The degree of scientific knowledge, the possibility of applying the knowledge of science and research into practice, technical and technological progress, long-term cultivation of safety culture, gives prerequisites and possibilities for better protection of man in the work process. In addition to profits, technical and economic parameters, safety, hygiene and health aspects of workers must be taken into account. I tis necessary for company management to work for conditions that do not endanger the lives and health of people; this natural requirement has several aspects. The morally ethical aspect is the most important aspect; there is no greater value than human life and health. The legal aspect means compliance with international conventions and norms of European law, but also of Slovak law legislation. The economic aspect is also important; care for safe work and decent work the environment brings costs, but the consequences of saving in this place are usually much more expensive.

Between Irreplaceable sources of successful business include health, qualified, positively motivated and satisfied workers.

5. CONCLUSION

A specific combination of risks and a combination of factors such as ergonomic risks, work-related stress factors, noise, hazardous substances, vibrations, unusual working hours, equipment shortages, difficult working conditions, the need for constant adaptation, and many structural changes that have occurred they are a particular challenge for monitoring and prevention. Interventions in the organization of the driver's workplace in order to improve driver-vehicle interaction as well as to promote the health and well-being of drivers can be implemented in various ways. Workplace health promotion planning and relevant interventions should, as far as possible, be combined with risk prevention activities and measures. In the road transport sector, it is important, as in any other sector, to pay attention to working conditions to ensure qualified and motivated employees. However, some industry specificities make risk management more difficult than other sectors. Active safety systems are part of a holistic solution that helps reduce risks in traffic, but it is important to remember that this problem cannot be solved by technology alone. Traffic safety requires active interaction between all its participants and the best (though not reliable) means of preventing accidents is still a well-trained experienced and attentive driver who is responsible for driving his vehicle. Countless goods are shipped around the world every day. The biggest contributor to this is the industry, which has been suffering from a shortage of labour for many years. There are not many drivers but many of them will soon retire. We are talking about an age category that started at the turn of 90 and is currently over 50. This group is the most numerous in road freight transport, and when it comes to leaving in about 10 years, there will be no substitute for them, and the gap that is already created to a large extent will be irreversible. There is no interest among young people in the driver profession. The place of work certainly plays an important role in career choice. Many people cannot deal with the feeling of being separated from their family and close friends. This is also the reason why many professional road haulage drivers are divorced or themselves. An important factor in the selection and performance of the work is the possibility of career growth. There are not many opportunities for it in the road haulage profession and this is one of the many reasons why there is so little interest in this profession. Based on the research results it is necessary to continue the research in the field of motivation, work-life balance of truck driver's profession and protection against new biological risks.

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INTERNATIONAL SANCTIONS AS AN ECONOMIC SECURITY THREAT

Ekaterina Vostrikova
Astrakhan State University
Astrakhan, Tatischev str. 20a, 414056, Russia
katrin-16@yandex.ru

Samedova Mehriban
Associate Professor at
Azerbaijan State University of Economics (UNEC), Azerbaijan
mehriban.samedova@inbox.ru

Huseynova Shahla Akif
Associate Professor at
Azerbaijan State University of Economics (UNEC), Azerbaijan
h-sehla@mail.ru

Aliyeva Mehriban
Associate Professor at
Azerbaijan State University of Economics (UNEC), Azerbaijan
mmaa8899@mail.ru

Leyla Alikhanova
Azerbaijan State University of Economics (UNEC), Azerbaijan
leyla-alikhanova@mail.ru

ABSTRACT
The article reveals topical issues of influence of international economic sanctions on economic security of the state. In conditions of sanctions many countries resort to import substitution policy, and as a consequence, the economy faces sharp increases in trade barriers and find itself at the edge of the outbreak of trade wars. Risks associated with the escalation of trade barriers, however, seem to be not fully realized. In fact, they are likely to be much more serious than most experts tend to believe. And this has to do with the diversity of reasons inviting economic agents and political decision makers to support protectionist policies. Anti-Russian sanctions make it difficult for Russian banks to access foreign financial markets, which in turn restricts access of domestic firms to credit capital and provokes a decrease in investment, as well as increases the cost of servicing the foreign debt of domestic campaigns, resulting in a threat to the economic security of the state and slows down economic development. However, the regime of international sanctions opens up opportunities for import substitution policy, which may become a driver of the Russian economy development.
Keywords: *economic development, economic security, economic threats, import substitution, international sanctions.*

1. INTRODUCTION

Currently, economic sanctions remain an important component of modern foreign economic policy and international diplomacy. Economic sanctions concern politically justified restrictions imposed on trade relations, financial flows, information exchange or economic and political agents' movement between countries. Such measures are usually taken for a limited period of time, but may have a lasting impact on a country's economy.

Often, the effects of sanctions are not immediately apparent. This is due to the fact that a number of macroeconomic indicators characterizing the level of development of a country's economy (GDP growth rate, unemployment rate, inflation, etc.) respond to negative external shocks with a time lag. In general, sanctions are restrictive measures of an economic nature, which are used as a means of pressure from one state or group of states on another in order to force its government to adjust its foreign or domestic policy and change its current behavior to the desired one for the countries initiating sanctions. There are multilateral mechanisms for the application of sanctions, including those relating to major international organizations. The dynamic nature of the development of modern economic relations makes its adjustments in the context of the restrictive measures' application. While in 1995 the volume of international trade was only $6 trillion, in 2014 (at the time of the intensification of the sanctions confrontation) it increased significantly to $77 trillion. The contribution of foreign economic activity to the GDP of most countries is also growing and the interdependence of the world's economies is increasing. Therefore, the application of traditional economic sanctions, which are of a broad nature and aimed at whole countries, will have more serious negative consequences than it was in the 90s of the twentieth century. Nevertheless, in the modern world international economic sanctions, the so-called "war without bullets"[13, p.88], have become a popular instrument of foreign policy. The growth of interest in the use of non-military methods of pressure was the result of both the high cost of military operations in modern conditions and the growing restraint in the use of military forces of the leading countries [5, p.24]. At the same time, in the economic and political activities of the world's leading countries, the trend towards internal rationalization and recalibration of production sectors in key sectors of the economy, based on national interests, is gaining momentum. The main characteristics of import substitution are: state support within the framework of appropriate strategy and policy; orientation, first of all, to the domestic market; reliance on modernization of existing sectors or creation of new ones [7, p.162]. Under these conditions, the relevance of research into economic sanctions as an instrument of international coercion and conflict management is undoubtedly growing.

2. ECONOMIC SECURITY OF THE STATE

2.1. The Concept of Economic Security of the State

The term "economic security" was first introduced by US President T. Roosevelt in 1934. The President created the Federal Committee on Economic Security in connection with the awareness of state regulation of the economy [19, p.424]. The President created the Federal Committee on Economic Security in connection with the recognition of the need for state regulation of the economy. In the middle of the 20th century, as economic problems around the world increased, contradictions between rich and poor sharply escalated, and economic security became the focus of attention of researchers who joined the Club of Rome (D. Meadows, A. Peccei, M. Mesarovic, and others). In the 60-70s of the 20th century, the term "economic security" began to be considered by all scientists and economists as the most important component of national security. V.K. Senchagov considers the essence of the country's economic security from the point of view of the economy and institutions of power, under which guaranteed protection of national interests is provided. Economic security provides socially directed development of the country as a whole, defense potential even under the most unfavorable conditions of internal and external processes development. Thus, economic security is both protection of national interests and readiness of the institutions of power to create ways of realization and protection of national interests of development of national economy, maintenance of social and political stability of society [6, p.110]. The Decree of the President of the Russian Federation dated 13.05.2017 № 208 «On the Strategy of Economic Security of the Russian Federation for the Period up to 2030» notes that the economic security of the state is the protection of the national economy from external and internal threats, which

ensures the economic sovereignty of the country. Having studied a large number of definitions of the "economic security" concept we will summarize them all in a table.

Groupe	Definition	Authors
Economic Security as "sustainability"	"...a set of conditions and factors that ensure the sustainability and stability of the domestic economy..."	L. Abalkin, S. Afontsev and others
Economic Security as “interests”	"...as a state of the economy in which interests are protected..."	V. Savin, A. Smith, D. Ricardo and others
Economic Security as "independence"	"...the state of the economy that ensures the exercise of economic sovereignty, the increase in economic strength..."	N. Blinov, V. Mitrokhin
Economic Security as "security"	"...the protection of economic relations from external and internal threats..."	Strategy of Economic Security of the Russian Federation for the Period up to 2030

Table 1: Definition of "Economic Security"

It is important to note that, in this context, the economic security is part of the national security of the State. And to ensure it, state institutions can apply both administrative measures and instruments of fiscal, monetary and foreign trade policy.

2.2. Threats to Economic Security

Nowadays various concepts of security have been formed in Russian science, according to which, under the threat should be understood:

- "an actual or already existing danger, which is represented by a specific form of expression and way of influencing" [15, p.7];
- "dysfunction of a system and causing it considerable damage";
- "significant changes manifested in the external or internal environment leading to undesirable reorganization of the security object", etc.
- If we examine the system as economic security, then the threat is considered as:
- "an economic situation in which the state, due to various factors, may lose control over production and circulation, as well as lose economic and legal leverage";
- "a set of factors and conditions that can create a dangerous situation for the stable operation of the economy at the national level and the international economic system" [1, p. 33].
- "endogenous and exogenous shocks that arise in the economy and politics and contribute to destabilizing the economic system, both national and international".

An important role is played by the classification of threats according to certain criteria, which helps to improve the organization of countering threats, taking into account their specific characteristics. The initial structural classification of threats to the country's economic security is shown in Table 2.

Table following on the next page

Classification of Threats on the First Level Basis	Types of Economic Security Threats	Classification of Threats on the Second Level Basis	Subtypes of Economic Security Threats
1. Source of occurrence	a) external b) internal	1. Consist	a) simple b) complex
2. Nature of occurrence	a) natural b) anthropogenic (man-made)	2. Timing	a) short-run b) long-run
3. Probability of occurrence	a) potential b) real	3. Scale	a) local b) regional c) national
4. Consequences	a) significant b) insignificant	4. Measurability	a) measurable b) immeasurable
5. Regulation	a) regulated b) unregulated	5. Subject	a) physical b) intangible

Table 2: Classification of Threats to Russia's Economic Security [11, p. 153]

This differentiation makes it possible to identify the main types of threats to economic security. Such classification feature of the first level as a source of occurrence distinguishes two main types of threats to Russian economic security, which are divided into external and internal. External threats are characterized by the attitude of political and economic interests of trade partners operating in the world arena, as well as aggravation of global environmental issues. Internal threats are caused by the position of the Russian economy, the orientation of political processes, the degree of social tension, the state of natural resources, etc. At the same time, external factors may aggravate or weaken internal and vice versa [6, p. 23]. If we consider the types of threats depending on the nature of their occurrence, there are natural and anthropogenic (man-made) types of threats. Natural threats can be characterized by global natural and environmental processes and phenomena that can destroy the economic system. For example, climate change, the issue of the ozone layer, natural disasters, etc., can be described as a threat. Anthropogenic threats, in turn, are the result of human activity. This may be related to environmental pollution, degradation of scientific and technical potential, etc. The criterion of probability of occurrence singles out potential and real threats to economic security, where potential are negative events, the consequences of which have not yet been realized (for example, capital flight or purchase of enterprises by foreign firms in an effort to displace domestic products); and real, i.e. already occurred negative changes (here we can distinguish: sanctions, policy of discrimination or "brain drain", connected with the fact that today Russia is one of the main exporters of highly qualified specialists). The level of consequences divides the types of threats into significant and insignificant ones. Standard examples of significant types of threats are trade wars, impact of the global financial crisis, and economic consequences of the coronovirus pandemic (COVID-19). The ability to regulate or the degree of impact implies the existence of regulated and unregulated threats to economic security. An example of regulated threats that require prompt intervention can be a deformation of mechanisms of economic policy formation (here we can distinguish: high nature of lobbying; inconsistency and incoherence of operations of the system of public administration). Determination of the nature of threats of this type is of paramount importance in the process of monitoring, as it largely determines the effectiveness of the proposed strategy.

3. STATE SANCTIONS AND ECONOMIC SECURITY

However, despite the widespread use of the term "economic sanctions", international organizations' documents do not provide any clear definition of the term, generally limited to a mere listing of specific measures. For example, the Charter of the United Nations (UN) does not contain the terms "sanctions" or "embargoes".

However, Article 41 of the Charter of the United Nations provides the possibility of application of certain coercive actions against the “violating state”, which may include a total or partial interruption of economic relations, rail, sea, air, postal, telegraphic, radio or other means of communication, as well as the severance of diplomatic relations. A similar definition is given by David Baldwin, who defines economic sanctions as a threat or an action by one state or states concerning the severance of economic relations with another state, which is the purpose of sanctions, until the target state changes its behavior in the desired political direction [3, p.190]. In general terms, sanctions can be referred to as restrictions imposed by one State or a group of States on the exercise of economic relations with the target country with a view to forcing it to change its conduct [20]. Economic sanctions traditionally have been implemented by States in the form of a national legal act imposing any prohibitions or restrictions. These bans and restrictions may concern the conduct of any economic activity with the country subject to sanctions, or may only apply to certain sectors of its economy. Thus, adopted bans and restrictions affect the ability to conclude and execute foreign economic contracts. In the process of introducing economic sanctions, international relations of entities under the jurisdiction of third states can be significantly affected, since they traditionally require guarantees that their goods and services are not intended for re-export to the country under sanctions. Thus, the main purpose of the economic sanctions application is to change the behavior of the Government of a country - the purpose of those sanctions. A country or countries imposing economic sanctions usually expect the mechanism to be simple and the results of sanctions to be effective [4, p.83]. Recently, comprehensive sanctions have given way to narrowly targeted economic sanctions. Within the framework of such policies, attempts have been made to minimize the harm to the population of the country, i.e., preference has been given to such measures which would harm the ruling elite or even individual individuals. Analyzing the experience of the international sanctions application in the second half of the XX and early XXI centuries, it can be concluded that the difficulty may consist not only in the introduction of sanctions, but also in their abolition. Two main reasons that lead to such a problem can be identified: bureaucratic inertia and the emergence of lobbying groups (countries or organizations interested in maintaining restrictions). For example, in the case of sanctions adopted against Iraq, in the presence of the desire of individual players in the international space to lift sanctions, economic pressure continued, even after the sanctions reached their original declared goals. In addition, it is important to stress that the costs of sanctions for the economy of the country that initiated them are almost never calculated in advance. This is primarily because it is quite difficult to assess their magnitude. Second, because, traditionally, damage to developed economies which impose sanctions is considered insignificant and does not exceed on average 1% of GNP [9]. However, it also does not take into account the damage that may be caused to the country initiating sanctions from the so-called "retaliatory sanctions" of another country. Therefore, the imposition of sanctions may result in damages for both parties. In case if a trade embargo is imposed by all partner countries of the offending country, if the import/export of those countries is significant to the offending country and there is no possibility of third party intervention and there is no possibility of using trade routes to bypass the sanctions, the fall in the offending country's foreign trade would be significant and have a significant impact on the offending country's welfare. In this case, high efficiency of sanctions can be expected. However, under current conditions such a combination of conditions is highly unlikely. Thus, the negative impact of the trade embargo on the offending country will be lower, although it will suffer economic losses. Since the sanctioned country will have to look for alternative trading partners, alternative ways of importing or exporting goods and eventually buy imports (in case of an import embargo) at a higher price, and sell its exports (in case of an export embargo) at a lower price than the world one. If an embargo is imposed on the import or export of a particular item, it would be logical to assume that the result of such sanctions would be the total disappearance

of the item from the country's international trade indicators, unless alternative routes for the delivery of the item are possible. However, if the trade embargo is not complete from a geographical point of view, the offending country will be able to redistribute its exports or imports to other countries with which it has not previously had such trade links and where markets for the goods in question will be found. However, change in the price of sanctioned goods within embargoed countries (both for the country imposing the sanctions and for the offending country) means a change in what is known in economic science as the "conditions of international trade". The impact of trade embargoes on the economies of countries extends to the currency market. This is because both export and import embargoes affect the value of a country's trade balance. If a country's important trading partner refuses to buy its export goods, it may increase the country's trade deficit, which is subject to sanctions. If it is a matter of banning the import of goods into the offending country, the trade deficit may drop at least in a short period. In assessing the impact of the embargo on a country's trade balance, it is necessary to consider whether the sanctioned goods are important and whether they have substitutes in alternative markets or in domestic production. In particular, the embargo on the supply of raw materials or equipment to the offending country for industries producing goods for export will subsequently also reduce exports from the offending country. Therefore, the long-run impact of the trade embargo on the trade balance of the offending country will not be unambiguous. In the short-run, the trade deficit is likely to decrease, but in the long-run, unless substitute goods or alternative ways of supplying products necessary for production in export industries are found, the trade deficit may start to increase. If the country on which the sanctions were targeted experienced a trade deficit and a floating exchange rate regime, and the embargo led to an increase in the country's trade deficit, there will be an acceleration in the depreciation of the national currency. The embargo also affects the labor market and the capital market. The fall in exports from the defaulting country reduces the number of jobs in export industries, reduces the demand for investment in these industries, which subsequently leads to lower revenues in these industries, which in turn affects the demand for the products of other (non-exporting) industries. Thus, a key conclusion can be made that an embargo on one specific industry leads to a drop-in revenues in the economy as a whole. Citizens' incomes of an embargoed country do not decline evenly. This leads to a drop-in household spending on insignificant goods and luxury goods and a decrease in life satisfaction. Import embargoes also often result in the emergence of a black market, which also worsens the distribution of goods. The income differentiation between rich and poor is increasing. If a sanctioned country can find alternative markets for the supply or sale of sanctioned goods, the effects of income redistribution and declining wealth will fade with time. Change in production structure as a result of the embargo (import or export) have an impact on the rate of economic growth in the country under sanctions. A number of studies confirm the importance of international relations to a country's economic growth, in particular, the development of exports and the search for new markets outside the home country. For example, it is stressed that export promotion policies lead to more efficient resource allocation, benefits from economies of scale, encourage the adoption of new technologies and increase employment, which, for example, allows developing countries work against unemployment [2, p.18]. At the same time, some authors see import substitution strategies (which are often resorted to by countries in the case of import embargoes) as an economic problem that makes economic growth more costly [16, p.121]. Producers in an open economy refuse to produce a commodity if they cannot produce it cheaper than the producer abroad, even taking into account all trade and transport costs. By refusing to produce a commodity, the economy would receive the commodity at a lower relative price if it produced it itself. This is the key mechanism for benefiting from international trade [18, p. 144]. An increase in imports leads to an increase in the rate of economic growth in case the imported goods are of better quality than domestic ones or have no domestic analogues.

Thus, import embargo on means of production (capital goods) will lead to the reduction of economic growth rates in the long-run [12, p.100]. The introduction of mutual economic sanctions by Russia, the U.S. and the EU countries has intensified interest in the question of what will be the impact of sanctions and the subsequent import embargo imposed by Russia on a number of European food products on the Russian economy. There is no definite answer to this question within the Russian economic community. On the one hand, there are assurances that the imposition of sanctions against Russia and Russia's response in the form of a food embargo is a chance for the domestic economy to expand its own production, establish domestic markets for domestic products, increase the competitiveness of domestic production in the domestic market. Hence the calls for "import substitution". On the other hand, it is obvious that we are talking about imposition a range of domestic products on the domestic consumer. In other words, the consumer is forced to buy it, as there is no alternative. Obviously, the restriction of access to the domestic market for foreign producers does not motivate domestic firms to produce better quality products, and thus leads to inefficient distribution of resources, higher prices for the final consumer. Besides, "import substitution" occurs not only at the expense of domestic goods, but also at the expense of imports from other countries not participating in sanctions: China, Argentina, Brazil, Belarus, etc. The food embargo imposed by Russia in 2014 and the subsequent call for import substitution is not something unexpected and new. Often, the governments of the countries under sanctions seek to pursue policies that stimulate their own production, facilitate the production of substitute goods for imported ones, and start looking for alternative trading partners, technology and capital. Economic theory argues that many of these measures, such as restricting imports or rationing consumption, do not contribute to overcoming the crisis in the economy, rather they make it more difficult to recover from it. Nevertheless, such measures are popular with the governments of the countries under sanctions and find a positive response in the masses of the population, allowing the ruling circles to extend their term in office [20, p.69]. This effect has received in the economic literature the name "rally-around-the-flag effect": the rating of authority increases during tragedies and the international conflicts, and it is accurately enough traced in the countries exposed to sanctions (Cuba, North Korea, Russia, etc.). At the same time, it should be kept in mind that some types of goods, raw materials and technologies of the countries participating in sanctions (for example, in the sphere of oil production) are often unique, have patent protection, which makes it difficult to replace them with similar positions on other markets [10, p. 69]. The development of own analogues is complicated by technical backwardness, lack of qualified specialists, lack of investments for development and others. In the current conditions, the success of import substitution policy can be traced mainly to the production of foodstuffs, which is not surprising, since the food embargo on imported goods is akin to protectionism. And from the point of view of domestic producers, there is a favorable situation in the protected sector: they can now sell their products at higher prices, with all other things being equal, it is possible to put into production capacities that had higher costs at old prices. In addition, due to the ruble devaluation, the attractiveness of imported goods that were not subject to sanctions has fallen. However, import substitution in Russia had a short-term effect. As a result, the prices of foodstuffs rose significantly against the backdrop of deteriorating quality. It should also be noted that the success of the import substitution policy can only be talked about when the conditions and terms of termination of its implementation are determined in advance: so that the producers in the industries that were 'under protection' would have an incentive to increase the efficiency of production. Otherwise, the industries working for such an import-substitution policy will continue to absorb budget subsidies and exist in the conditions of limited competition for an unlimited time without incentives to improve the quality of products and reduce costs. Thus, the country (and first of all consumers) becomes a kind of “hostage” of the import substitution policy.

And the import substitution policy becomes a tool for obtaining long-term rents for special interest groups, rather than a tool for improving the efficiency of the economy.

4. CONCLUSION

The fact that the introduction of economic sanctions often does not require mobilization of public opinion, additional expenditures of the state budget, but at the same time demonstrates the rigidity of the position and determination of the country initiating the sanctions, makes economic sanctions the most convenient and affordable means of international coercion. And while there is ongoing debate in academic circles about the ineffectiveness of such economic and political measures, economic sanctions will continue to be important as a means of pressure and conflict management, both in the policies of individual States and in the activities of major international organizations. Obviously, sanctions, which coincided with a fall in oil prices, cannot be considered the only reasons for the worsening of the economic situation in Russia, although they have contributed to inflation, ruble devaluation, a drop in real incomes and reduced investment against the backdrop of growing capital outflow. Most economists tend to think that the fundamental causes of the current recession in Russia are of a deep nature and are caused by the continuing imperfection of the institutional structure of the Russian economy. Nevertheless, in the fact that the problems that have accumulated over the years have come to the surface right now, sanctions have played an important role.

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FINANCIAL SECTOR DEVELOPMENT: EFFICIENCY OF THE REGULATION AND PUBLIC TRUST

Zohrab Ibragimov
Azerbaijan State University of Economics (UNEC)
Baku, Istiqlaliyyat str., 6, AZ1001, Azerbaijan
z.ibrahimov@unec.edu.az

Maryna Brychko
Sumy State University
Sumy, Rimsky-Korsakov str., 2, 40007, Ukraine
m.brychko@uabs.sumdu.edu.ua

Serhiy Lyeonov
Sumy State University
Sumy, Rimsky-Korsakov str., 2, 40007, Ukraine
s.lieonov@uabs.sumdu.edu.ua

ABSTRACT

Financial sector development, ensured by trust in the banking system, is an essential prerequisite for sustainable economic and social growth. The foregoing contributions to building a solid and reliable foundation for economic growth depend to a large extent on the efficiency of the state regulation in terms of monetary policy strategy, which has been adopted. Measuring its efficiency is one of the challenging research and practice questions of central banks. The purpose of the paper is to contribute to the methodology of indicators that allow for the measurement of the benefactions of efficient monetary policy to observed changes in public trust in the financial sector. A fundamental standpoint adopted is to view the maximization of public trust as a necessary (but not sufficient) step towards the goals that the Central banks have been tasked with within their mandates. An output-oriented data envelopment analysis method, which is widely used to measure efficiency within the banking industry, was developed and applied in order to measure the efficiency of the regulation in a central banking context. In order to get a reliable, relevant, and interpretable result, input and output variables were selected according to the Central banks' majority core strategy and objectives. Input factors are represented by Central banks' balance sheets that record assets and liabilities resulting from monetary policy instruments. While the Heritage Foundation index on monetary freedom and coefficient of economy monetization was used as outputs in a quantitative dimension. The proposed measure of monetary policy efficiency could be used as an aid to detect so-called reserves of unused capacities, and hence to provide for recommendations as to the regulations and incentives, or managerial practices, that will contribute to promoting greater trust in the financial sector and price stability that each central bank seeks to maximize given its limited amount of inputs.

Keywords: *Financial sector, Monetary policy, Central bank, Regulation, Efficiency, trust*

1. INTRODUCTION

A large and growing body of academic literature on macro and regional economic growth and sustainable development has revealed the emergence of several candidate explanations. Politics and political stability (Bakari et al., 2018), innovations (Kendiukhov, Tvaronaviciene, 2017; Eva, Marcel, 2017), investments (Lyulyov, Pimonenko, 2017; Vasylieva et al., 2017), fields of behavioral finance (Prince, 2017; Nur-Al-Ahad, Nusrat, 2019), among other things, public trust (Bilan et al., 2019; Brychko et al., 2019) are prerequisites for any widespread improvement in

macroeconomic outcomes. Much of the literature since the global financial crisis pays particular attention to that macroeconomic performance and development requires a well-functioning financial sector. The existing literature on the financial sector development is extensive and focuses particularly on the role of systemically important banks (Buriak et al., 2015), transnational banks' influence (Fernandes, 2018), banking competition (Didenko et al., 2018), financial instruments (Tiutiunyk, 2018) for sustainable economic and social growth. Current financial systems have a complex organizational and functional structure, characterized by the public trust (Buriak et al., 2019; Savchenko, Kovács, 2017), stability, safety, reliability (Leonov et al., 2018) and a variety of risks, associated particularly with the rapid development and growth of alternative finance (Bilan et al., 2019; Rubanov et al., 2019). However, the danger signals brought on by dissemination of the financial sector negative trends and deformations through all participants and stakeholders across the economy is still an issue. And therefore, without efficient state regulation, the financial sector could be viewed as a source of financial shocks. It is widely admitted that state regulation builds a solid and reliable foundation for economic growth. Thus, there is a large number of published studies that describe changes in state regulation in the context of current changes in banking (Zarutska et al., 2018; Vasylieva et al., 2017; Islam, Khan, 2019), consumer protection (Poliakh, 2018), independence of financial supervision (Kremen et al., 2018), shadow economy (Bilan et al., 2019), reporting transparency (Vasylieva et al., 2017; Vasilyeva, Makarenko, 2017; Vasylieva et al., 2017). Measuring efficiency is one of the challenging academic and practice questions. While the overwhelming majority of research is directed toward the investigation of the efficiency of banks (Agnihotri, Gupta, 2019; Obeid, Brychko, 2017), deposit services marketing (Vasylieva, Didenko, 2016), risk management methods (Pukala et al., 2018), and tools, corporate governance (Brychko, Semenog, 2018), only a few researches have been focused on the efficiency of state regulations (Karintseva, Benetyte, 2018; Subeh, Boiko, 2017; Jiang, Wang, 2017), especially in monetary policy context (Ihaddaden, 2019; Rasche, Williams, 2007; Cecchetti et al., 2006). A relatively small number of publications on the efficiency of the state regulation in terms of monetary policy strategy, which has been adopted, related to the existence of a plurality of monetary policy objectives central banks charged with (Mester, 2003), that are also generally heterogeneous across the countries, the difficulty in the quantitative measurement of the central banking achievements, the complexity of instruments and mechanisms that central banks could use in order to pursue its goals (Ihaddaden, 2019). The purpose of the paper is to contribute to the methodology of indicators that allow for the measurement of the benefactions of efficient monetary policy to observed changes in public trust in the financial sector. The value-added of this paper compared to the existed literature lies within the determination of the maximization of public trust in the financial sector as a necessary (but not sufficient) step towards the goals that the central banks have been tasked with within their mandates as a fundamental standpoint. The rest of the paper is organized as follows. Section 2 outlines the research methodology adopted in the study. We start by presenting the theoretical framework for efficiency computations (2.1). Then, the data and empirical definitions are introduced (2.2). In this section, the DEA model is formulated (2.3), and the concept of returns to scale is defined (2.4). Section 2 also outlines calculations that should be done for the identification reserve of unused capacities (2.5). Section 3 concludes and provides directions for future research.

2. RESEARCH METHODOLOGY

2.1. Theoretical framework

Such a long-standing issue of measurement monetary policy efficiency had remained unresolved in the monetary economics and central banking literature. Concepts and suggestions aimed at addressing this question have been influenced in part by conceptualizing of what

constitutes an efficient monetary policy and in part by selecting of quantification methodologies and appraisal tools. Computation methods and models for assessing the efficiency of the state regulation in terms of monetary policy are not applied due to the nature of central banks. This is no doubt connected with the fact that the goal of the central banks' creation and activity is not deriving the maximum profit at the lowest possible risks, as in the case of commercial banks. It could be taken advantage of the diversity of existing traditional and contemporary conceptual frameworks of measuring central bank efficiency. The monetary policy efficiency can be evaluated on the perspectives of striking a balance between the money demand and supply as the principal prerequisites of price stability. The central banks could also be viewed as efficient if there is an absence of booms and busts in the financial sector. The alternative approach to recognize central bank efficiency is an empirical evaluation of the efficiency of monetary policy transmission mechanisms across its core channels. Being the followers of a goal-based approach, we consider efficient state regulation in terms of monetary policy is an achievement of the goals that the Central banks have been tasked with within their mandates. In this line, a narrow and broad-based goal approach could be used. A narrow approach is suggested that the central bank is efficient and, therefore, related monetary policy, if the stated inflation targets in the short and long term are fulfilled. This approach is due to the fact that today price stability is a primary goal not only in countries with inflation targeting. However, such a narrow approach could hardly contribute to the expanded central banks' priorities after the Global financial crisis. A broad-based approach is more appropriate to monetary policy efficiency measurement since it included the essential criteria and indicators that fairly reflect the achievement of the entire hierarchy of central bank goals established within their mandates. In this study, the broad-based goal approach has been adopted. A non-parametric approach of measuring efficiency had been widely used previously for comparative purposes as an assessment tool of commercial banks or bank branches efficiency. However, neither parametric, no non-parametric approach is not adequately reflected in the central banking context. Among the non-parametric methods, Data Envelopment Analysis (DEA) was increasingly in demand. There are several reasons related to the above DEA model dissemination among researches. First, unlike the parametric approach, DEA does not rely on assumptions about the functional form of a cost or production frontier; hence, the derived efficiency scores are more robust. Secondly, owing to the absence of a random error in the model, DEA does not shift efficiency measurement results and could overstate the actual levels of relative inefficiency. It is observed that the use of this method might be appropriate in practice during measuring the efficiency of state regulation in terms of monetary policy implementation since it enables the following estimations to be performed:

- The efficiency of state regulation in terms of achieving the goals set by central banks within their mandates that is measured by the distance from central bank under evaluation to the efficiency frontier;
- Efficient frontier, which constitutes the "best practice" central banks;
- A (small) subset of efficient central banks closest in the balance sheet characteristics to the central bank under evaluation, in other terms, an efficiency reference peer group;
- Reserve of unused capacity, which could also be considered as the degree of inefficiency in the use of inputs;
- Efficient targets for each inefficient central bank, which is derived by a projection of inefficient central banks to the efficient frontier.

2.2. Data and empirical definitions

In order to get a reliable, relevant, and interpretable result, input and output variables were selected according to the Central banks' majority core strategy and objectives. Given the imbalances that have taken place in the global and national financial markets over the last

decades, many central banks, in particular the National bank of Ukraine and Central Bank of the Republic of Azerbaijan, have responded by transforming their strategy and expanded core functions. This has triggered most countries, in accordance with the national legislative framework, for a radical redefinition and regularization of the hierarchical subordination of central banks' objectives. Additional goals, along with the primary goal of the central banks in achievement and retention of the price stability in the country were proclaimed: to promote the stability of the banking/financial system (for instance, Azerbaijan, Armenia, Belarus, Czech Republic, Georgia, Poland, Israel, Germany, Norway, USA, Sweden, Ukraine), maximum employment (for instance, Australia, ECB, Israel, USA, Sweden), the sustainability of the economic growth and/or supporting the government's economic policies (for instance, Australia, Georgia, Israel, Switzerland, Sweden, Turkey, Hungary, Czech Republic), to organize and ensure operation of centralized interbank and other unlicensed payment systems (for instance, Azerbaijan, Armenia, Belarus, Germany, USA, Japan, Sweden), etc. Meeting the goals, that central banks" was mandated, or approximation to corresponding quantitative criteria for their assessment creates the necessary level of public trust in the central bank (institutional level) and the financial sector (systemic level) as a whole, which is a prerequisite for economic growth. For this reason, maximizing public trust in the financial sector is a unifying characteristic of the efficient state regulation in terms of achieving the goals set by central banks within their mandates. The Heritage Foundation index on monetary freedom (y1) and coefficient of economy monetization (y2) were used as output parameters of the model that, respectively, characterize price stability, reliability, and stability of the financial system in a quantitative dimension. The justification for using the Heritage Foundation index on monetary freedom as a proxy is based on similar contemporary studies such as (Mckinley, Banaian, 2005), (Ihaddaden, 2019). The Monetary Freedom Index is part of the Index of Economic Freedom, developed and annually published by the Heritage Foundation, which is used to evaluate the Regulatory Efficiency of various government activities. The monetary freedom index demonstrates the ability of the central bank to control inflation and to ensure price stability. It combines a measure of inflation with an assessment of various government activities that distort prices and, in quantitative terms consists of two components (The Heritage Foundation, 2020):

1. The weighted average inflation rate for the most recent three years;
2. A qualitative judgment about the extent of government manipulation of prices through direct controls or subsidies.

Thus, the monetary freedom index is defined by the formula:

$$\text{Monetary Freedom}_i = 100 - \alpha \sqrt{\text{Weighted Avg. Inflation}_i} - \text{PC penalty}_i,$$

Where: Weighted Avg. Inflationi is the weighted average inflation rate for the most recent three years in the country i; α represents a coefficient that stabilizes the variance of scores; PC penalty – the penalty is an assigned value of 0–20 penalty points based on the extent of price controls; Monetary Freedomi is the Heritage Foundation index on monetary freedom. The base score for the Heritage Foundation index on monetary freedom that serves as the primary input into an equation is the weighted average inflation rate for the most recent three years. It is calculated as follows:

$$\text{Weighted Avg. Inflation}_i = \theta_1 \text{ Inflation}_{it} + \theta_2 \text{Inflation}_{it-1} + \theta_3 \text{ Inflation}_{it-2}$$

Where: θ_1, θ_2, θ_3 represent three numbers that sum to 1 and are exponentially smaller in sequence (in this case, values of 0.665, 0.245, and 0.090, respectively); Inflation is the absolute

value of the annual inflation rate in the country i during year t as measured by the Consumer Price Index. The extent of price controls, as the second component of the monetary freedom index, is formed based on information on the status and implementation of the reform process in the country in the year under study and the second half of the previous calendar year. It is then assessed as a penalty deduction of up to 20 points from the base score. The banking system stability can be measured in terms of its ability to withstand various external and internal shocks (sustainability of the system), mitigate their adverse effects (resilience of the system), and, maintain public trust (reliability of the system) in case banking system deviates from the equilibrium. Therefore, the quantitative indicator of the stability of the banking system measuring is the coefficient of economy monetization, as it describes the financial situation of the economy, reflects public trust in the national monetary unit as well as the policies of monetary authorities. Indicators that describe compliance by commercial banks with economic standards and financial sustainability indicators, in particular, those developed by the International Monetary Fund under the Financial Sector Stability Assessment Programme, have no support or justification provided due to they are the result of regulatory actions by central banks and not the purpose of their activities. Quantitatively, the coefficient of economy monetization is calculated as the ratio of the monetary aggregate M2 as a percentage to GDP. Thus, the deepening and diversification of the financial system, increasing its size and liquidity, thereby determining its stability, is ensured by an increase in the level of economy monetization. The model inputs are represented by the components of Central banks' balance sheets that record assets and liabilities resulting from the use of a set of monetary policy instruments and methods. Accordingly, securities (x1), reserves (x2), foreign assets (x3), and refinancing operations (x4) are used as input parameters of the model. The turbulence and distortions created by the global financial crisis have provoked the central banks of many countries to instruments and mechanisms of unconventional, at least in the contemporary context, monetary policy including quantitative easing, credit mitigation, and term lending to achieve monetary policy goals and addressing financial system stability issues. Therefore, changes in the size and composition of central banks' balance sheets since 2008 have been an indicator of monetary policy stance (Curdia, Woodford, 2011). Confronted with risks and grave negative consequences of the financial crisis, many central banks have implemented one or several actions of the stabilization program such as term lending and other modalities of liquidity provision to give funding reassurance, direct lending operations for the non-bank private sector, purchasing medium and long-dated public sector securities on a large scale, offering explicit verbal guidance on the evolution of policy in the future (ECB, 2015). All these actions that represent instruments and mechanisms of monetary policy lead to increasing the size of the central bank's balance sheet and/or modifying its composition. The only monetary policy instrument that does not lead to a direct change in the size or / composition of the central banks' balance sheet is the short-term interest rate and, accordingly, does not provide information on the monetary policy position.

2.3. DEA model formulation

In this paper, the data envelopment analysis model was developed and applied in order to measure the efficiency of the regulation in a central banking context. Since the main task of the efficient government regulation in terms of monetary policy implementation is to maximize the level of public trust in the financial sector of the economy, expressed in the achieved goals, the modification of the model is oriented to output parameters (output-oriented). Thus, the achievement of maximization of output parameters at given resources will be considered efficient state regulation with zero reserves. Therefore, for central banks with inefficient government regulation in terms of monetary policy implementation, recommendations will be given for proportionally increasing the output parameters by φ times with unchanged input

parameters. In order to calculate the measure of the government regulation efficiency in terms of the implementation of monetary policy of the central bank, it is necessary to solve the following problem of linear programming:

$$E_{sr}^{mp} = (\varphi_i)$$

Where: E_{sr}^{mp} is the government regulation efficiency in terms of the implementation of monetary policy of the central bank; φ_i represents a coefficient that determines how many times a central bank can increase output when using inputs in a technically efficient configuration. The main provisions of the model are the following assumptions. Let there be N central banks that use K input parameters to produce M output parameters. For the i-th central bank, these data are expressed by vectors xi and yi, respectively. Matrix input parameters X (K×N matrix) and output parameters Y (M×N matrix) contain information about N central banks. In general terms, the objective function is defined as:

$$F = (\varphi_1, \varphi_2, \dots, \varphi_N) \rightarrow max$$

Furthermore, the system of basic limitations is as follows:

$$\sum_{i=1}^{N} \lambda_i \cdot y_{mi} - \varphi_i \cdot y_{mi}^* \geq 0, m = 1, \dots, M$$

$$x_{ki}^* - \sum_{j=1}^{N} \lambda_i \cdot x_{ki} \geq 0, k = 1, \dots, K$$

$$\lambda_j \geq 0, j = 1, \dots N$$

Where: λ_i is a vector of the weights (intensity variables) of the i-th central bank to be determined by the above programming problem (in the simulation process, all possible combinations λi, for which there is a solution, are sorted out in order to select only those values φ_i at which E_{sr}^{mp} = max); i is a sequential central bank number (i ϵ [1; N], N – observations (number of central banks whose primary goal is to ensure price stability and promote the stability of the banking system); x_{ki}, x_{ki}^* is observed amount of input of the k-th type of the i-th central bank (k ϵ [1; 4]); y_{mi}, y_{mi}^* is observed amount of output of the m-th type for the i-th central bank (m ϵ [1; 2]); E_{sr}^{mp} is the efficiency score to be calculated. Thus, the level of government regulation efficiency in terms of monetary policy is not determined as a single integral indicator, but by generalizing (in the corresponding mathematical configuration) the values of the relevant parameters (hierarchy of central bank goals) that form it. The system of purpose function restrictions for each i-th central bank having M + K + 1 constraint and, for a given task with four input parameters (x1, x2, x3, and x4) and two output parameters (y1 and y2), is the following:

$$\begin{cases} -\varphi_i \cdot y_{1i} + (y_{11} \cdot \lambda_1 + y_{12} \cdot \lambda_2 + \dots + y_{1N} \cdot \lambda_N) \geq 0 \\ -\varphi_i \cdot y_{2i} + (y_{21} \cdot \lambda_1 + y_{22} \cdot \lambda_2 + \dots + y_{2N} \cdot \lambda_N) \geq 0 \\ x_{1i} - (x_{11} \cdot \lambda_1 + x_{12} \cdot \lambda_2 + \dots + x_{1N} \cdot \lambda_N) \geq 0 \\ x_{2i} - (x_{21} \cdot \lambda_1 + x_{22} \cdot \lambda_2 + \dots + x_{2N} \cdot \lambda_N) \geq 0 \\ x_{3i} - (x_{31} \cdot \lambda_1 + x_{32} \cdot \lambda_2 + \dots + x_{3N} \cdot \lambda_N) \geq 0 \\ x_{4i} - (x_{41} \cdot \lambda_1 + x_{42} \cdot \lambda_2 + \dots x_{4N} \cdot \lambda_N) \geq 0 \\ \lambda_j \geq 0 \end{cases}$$

Finding a solution using the linear programming method is that it overcomes all possible combinations of λ_i for which there is a solution. The next step is to select only the value φ_i at which the goal function reaches its maximum. Thus, each output parameter of the central bank is scaled by the same factor φ_i until the limit of efficiency of the given central bank reaches a correspondingly determined limit of efficiency by Farrell. The defined measure of the efficiency with output-oriented DEA model determines the proportion (number of percentages) by which central bank management could increase the outputs in order to achieve the highest level of the government regulation efficiency with zero reserves in relation to other central banks that exist, real or hypothetical, and function optimally. The calculated value of the indicator E_{sr}^{mp} varies between one and positive infinity. An efficiency score equals one means that the central bank is efficient and thus located on the frontier. However, there are cases when the value of efficiency is less than one and means that even with the efficient use of input parameters across the various monetary policy instruments, the level of public trust in the financial sector is less than potentially possible. This indicates that public trust in the financial sector can be increased due to growth in the productive activity of central banks without any changes in the level of the input parameters used.

2.4. Model modification according to the scale effect

The DEA model allows to determine both long-term and short-term government regulation efficiency in the context of monetary policy implementation. By restricting the weights in the programming problem, two different efficiency measures could be obtained and interpreted with different scale assumptions: CRS-model (constant returns to scale) and VRS-model (variable returns to scale). CRS-model will be referred to as long-run efficiency. It was developed by Charnes, Cooper, and Rhodes (Charnes et al., 1978) and became one of the most widely used DEA models in a banking industry context. The algorithm of the CRS model corresponds to the solution of the problem in general terms described above. In this case, any comparisons between central banks of different sizes are allowed, as a constant return to scale is considered. In other words, the operating size of the central banks does not have an impact on the efficiency of the monetary policy they implement. This implies that in the long term, the central bank size is mostly irrelevant, and so the central bank can raise any combination of input and output parameters. Depending on the scale of production, the VRS model or the variable returns to scale model was developed by Banker, Charnes, and Cooper (Banker et al., 1984) and aimed to determine short-term efficiency. VRS model is used when the operating scale of the central bank plays an essential role in its goals achieving. In contrast to the previous model, in this case, the presence of the optimal value of the central bank is assumed. That is, a central bank of precisely this size can theoretically be more efficient in its activities aimed at increasing public trust in the financial sector than small or medium-sized central banks. Thus, the output-oriented VRS model evaluates the government regulation efficiency in terms of monetary policy implementtation of an ith central bank in comparison to other central banks that can be compared to it in terms of scale in the short term. Therefore, model estimation determines the pure technical efficiency of the central bank. For allowing variable returns to scale, it is necessary to add the convexity condition for the weights λi, i.e., to include in the described above model, the restriction imposes variable return to scale assumption on the reference technology:

$$\sum \lambda_i = 1$$

Thus, this constraint ensures that the central bank is only compared against central banks of a similar size.

2.5. Reserve of unused capacities

The Reserve of unused capacities could be viewed as an ability of the central bank to improve the efficiency of government regulation in terms of monetary policy implementation. However, the reserve of unused capacities and government regulation efficiency are inversely dependent. Therefore, the reserve of unused capacities of the central bank can be considered as lost opportunities for monetary policy implementation. Thus, the larger reserve of unused capacities the central bank has, the more inefficient it is. Mathematically, the method of finding a reserve would have the following expression:

$$\theta_i = E_{sr}^{mp} - 1$$

Approaching its expected value to 0 indicates the approximation of the public trust in the financial sector to its optimum. Other values reserve of unused capacities could be interpreted as the generalized characteristics of the shortfall in public trust in the financial sector as a result of irrational use of the monetary policy instruments and mechanisms.

3. CONCLUSION

Financial sector development, ensured by trust in the banking system, is an essential prerequisite for sustainable economic and social growth. The foregoing contributions to building a solid and reliable foundation for economic growth depend to a large extent on the efficiency of the state regulation in terms of monetary policy strategy, which has been adopted. Measuring its efficiency is one of the challenging research and practice questions of central banks. The existence of a plurality of monetary policy objectives central banks charged with, that are also generally heterogeneous across the countries, the difficulty in the quantitative measurement of the central banking achievements, the complexity of instruments and mechanisms that central banks could use in order to pursue its goals makes the application of the standard techniques pose challenges. An output-oriented data envelopment analysis method, which is widely used to measure efficiency within the banking industry, was developed and applied in order to measure the efficiency of government regulation in a central banking context. In order to get a reliable, relevant, and interpretable result, input and output variables were selected according to the Central banks' majority core strategy and objectives. Input factors are represented by the components of Central banks' balance sheets that record assets and liabilities resulting from the use of a set of monetary policy instruments and methods. While the Heritage Foundation index on monetary freedom and coefficient of economy monetization characterize price stability, reliability, and stability of the financial system in a quantitative dimension and, therefore, was used as outputs in the model. The proposed measure of monetary policy efficiency could be used as an aid to detect so-called reserves of unused capacities, and hence to provide for recommendations as to the regulations and incentives, or managerial practices, that will contribute to promoting greater trust in the financial sector and price stability that each central bank seeks to maximize given its limited amount of inputs.

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FISCAL EFFECTIVENESS OF ENVIRONMENTAL TAXES: CASE OF EUROPEAN COUNTRIES

Avaz Alakbarov
Azerbaijan State University of Economics (UNEC)
Baku, Istiqlaliyyat str., 6, AZ1001, Azerbaijan
avaz.alakbarov@unec.edu.az

Alina Vysochyna
Sumy State University
Sumy, Rimsky-Korsakov str., 2, 40007, Ukraine
a.vysochyna@uabs.sumdu.edu.ua

Yaryna Samusevych
Sumy State University
Sumy, Rimsky-Korsakov str., 2, 40007, Ukraine
y.samusevych@uabs.sumdu.edu.ua

ABSTRACT

This research is devoted to solving the issue of clarification of approaches to assessment fiscal effectiveness of environmental taxes and identification the most influential from the volatility of this indicator macroeconomic and environmental security parameters. The urgency of this problem has been determined by the vector at synchronization of Ukraine's and Azerbaijan's tax systems with the European tax practice and key global principles in this area. The main changes are focused on simplification of the mechanisms of accrual and charging of taxes, as well as elimination of inefficient fiscal instruments in favor of more efficient. Moreover, Global Development Goals by 2030 focused on the importance of the environmental issues in ensuring country sustainable economic development. The authors realized comprehensive research aimed at finding out approaches to the assessment of fiscal effectiveness of environmental taxes both from the business and government authorities perspective. It is also analyzed the main trends of changes of key proxies of fiscal effectiveness of environmental taxes for the sample of European countries. It is also realized panel data regression analysis aimed at clarification of influence of environmental tax fiscal effectiveness proxies on basic macroeconomic indicators (budget revenue, gross domestic product growth rate, valued added in economy, foreign direct investment inflow, gross capital formation, shadow economy, R&D expenditures, renewable electricity output, greenhouse gas emission etc.). Based on the empirical research results it was developed set of recommendation on transformation of environmental taxation in order to ensure its fiscal effectiveness. The authors also developed a map of the most sensitive to the environmental tax fiscal effectiveness volatility macroeconomic and environmental security parameters that might be considered under development of state economic and fiscal policies.

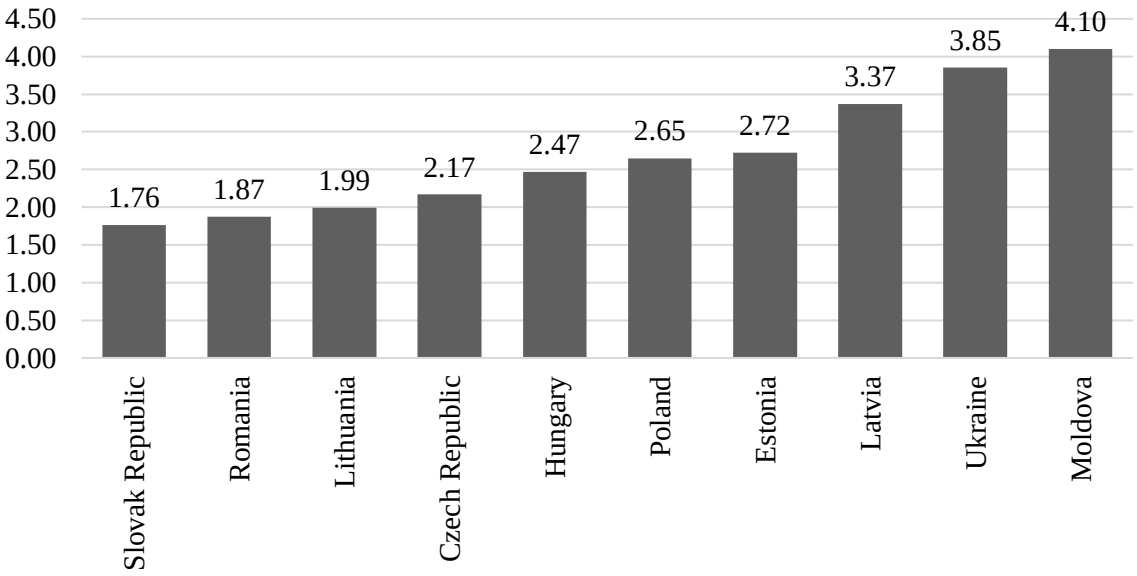
Keywords: *Environmental tax, Environmental security, Economic security, Fiscal effectiveness, Panel data regression analysis*

1. INTRODUCTION

Sustainable Development Goals [1] by 2030 that were introduced in 2015 at the United Nations General Assembly, underline key priorities of the world community development for the next decade. They are focused on reduction of poverty and hunger, improvement of health care, well-being and education quality, elimination of gender inequality, promotion of cooperation and peace-building etc. Besides there is block of goals concerning environmental issues: namely, expansion of the population's access to clean fuels and clean water, dissemination of

recycling technologies, implementation of more ecological water and land management etc. Nevertheless, realization of these goals considers complex of individual, local, national and supranational efforts, which might consist of voluntary and obligatory measures. In order to manage environmental problems and tasks, environmental taxes seems to be one of the most effective regulatory instruments. It should be noted that in the world practice environmental taxes vary significantly across different countries. In general terms environmental tax system consists of transport taxes, pollution taxes, energy taxes and resource taxes. It worth noting that in European countries environmental taxes play crucial role in solving of environmental problems. Environmental taxes, on the one hand, allow restrict pollution processes, and, on the other hand, help to collect budget financial resources that might be redistributed to solve environmental problems. Moreover, in European countries environmental tax revenues exceed environmental expenditures that, in turn, helps to form some reserves. While, Ukrainian practice of environmental taxation has no such mechanism. According to the Tax Code of Ukraine [2], environmentally oriented are such taxes as environmental tax, transport tax and resource fees. Unfortunately, there is no correlation between collection of these taxes and their redistribution. This leads to the conclusion that system of environmental taxes in Ukraine has insufficient fiscal and regulatory power, and needed to be improved. Nevertheless, comparison of environmental tax revenue to GDP ratio in neighbor European countries (Figure 1) allows underlining that Ukraine has one of the highest ratio between 10 analyzed countries but it does not mean that it has high effectiveness both in terms of environmental and fiscal perspectives.

Figure 1: Total environmental tax revenue to GDP ratio in 2018, %



Source: Eurostat [3]

Considering all the above-mentioned, assessment of fiscal effectiveness of environmental taxes and identification the most influential from the volatility of this indicator macroeconomic and environmental security parameters become an urgent task, which has huge empirical, theoretical and regulatory implications.

2. LITERATURE REVIEW

There are plenty of researches aimed at clarification of importance of environmental issues and expansion of environmental responsibility for sustainable development at supranational, national, local and individual levels. Specifically, Makarenko, Sirkovska (2017), Vasilieva et al. (2017) pointed out that implementation of sustainability reporting might help to get United

Nations Sustainable Development Goals by 2030. Moreover, authors mentioned that Ukrainian business' progress in this direction is still not significant in comparison with European countries. Such negative trend grounds necessity of further implementation of environmental-friendly voluntary and obligatory initiatives and recommendations in Ukraine. In turn, Grenčíková et al. (2019) empirically proved that environmental factors significantly influence entrepreneurship development in the Central and Eastern European countries. Namely, increase of CO2 emission leads to the expansion of new business registration and its density, but forces decrease of both amount of listed companies and their market capitalization. Lyeonov et al. (2019) also realized empirical research aimed at clarification of green investments impact on the GDP per capita, renewable energy to total energy consumption and greenhouse gas emission. Authors proved that an increase of independent variable in 1% leads to the increase GDP per capita and renewable energy consumption by 6.4% and 5.6% respectively, while results in greenhouse gas emission decline by 3.08%. Bilan et al. (2019a) also investigated how renewable energy sources influence GDP dynamics. Authors concluded that some European countries have already achieved one of the targets #7 Sustainable Development Goal concerning substantial increase of the share of renewable energy. Nevertheless, for the less successful countries expansion of renewable electricity output seems to be one of the possible ways of limitation greenhouse gas emission without worsening GDP growth. In turn, Chygryn, Krasniak (2015) pointed out that environmental investments might become an essential part of Ukraine' sustainable development, but at the current stage of development Ukraine has no comprehensive and well-thought-out strategy of the investment-driven development with the purpose of attraction green foreign investment. Moreover, Pimonenko (2012), Pimonenko et al. (2020) analysed influence of green investments at micro level and revealed that green brand and environmentally-responsible business image are among key preconditions of company performance increase. Moreover, a group of scientists (Kotenko, Illyashenko, 2015; Kamara, 2017; Ivanová, Kordoš, 2017; Lyulyov, Pimonenko, 2017; Singh, 2018; Vasylieva et al. (2018); Tiutiunyk, 2018; Teletov, Letunovska, Melnyk (2019); Rubanov et al. (2019)) found empirical and theoretical evidences that environmental issues play a crucial role not just for country development but also might trig or inhibit regional (local communities, sub-central governments) development. There is also a specific block of papers (Dave, 2017; Louis, 2017; Pilia, 2017; Pomianek, 2018; Kyrychenko et al. (2018); Chygryn et al. (2018); Hens et al. (2019)) arguing that social inequality leads to environmental insecurity and vice-versa (existence of environmental problems and damages results in social problems escalation). Considering an increasing importance of environmental responsibility dissemination at micro and macro levels, some scientists (Kostel et al., 2017; Dkhili, 2018; Levchenko et al., 2018; Levchenko et al., 2019) deepen in research of clarification of cohesion between environmental progress / performance and institutional quality / efficiency. In general terms, researchers argued that country environmental performance mostly depends on institutional efficiency and regulatory quality. Whilst the other group of scientists (Pakhnenko, 2011; Hrytsenko, 2015; Kuzmenko, Roienko, 2017; Logan, Esmanov, 2017; Ch, Semenog, 2017; Morscher, Horsch, 2017; Kouassi, 2018; Rekunenko et al., 2019; Bilan et al., 2019b; Bilan et al., 2019c), in contrast, specify that country financial capacity is the main determinant of country environmental performance specifically and its sustainable development as a whole. Based on the analyzed empirical research results we might conclude that environmental issues become an integral part of global community, certain legal entity or household reality. Thus, nowadays it is impossible to ignore such concepts as green investments, environmental responsibility and eco-friendly business and personal management. Nevertheless, in developed countries support of environmental projects becomes a mainstream, while developing countries are still on the way to because of numerous economic, financial, social and institutional limitations. Whilst there is also a small group of researches (Boiko, Samusevych, 2017; Mukherjee, 2018;

Tiutiunyk et al., 2019) that claiming on using fiscal instruments (specific environmental taxes / fees of general taxation schemes) in order to promote environmentally responsible behavior in developing countries, like it is in developed European countries. Thus, this research is focused on clarification whether fiscal effectiveness of environmental taxes in developing European countries (Slovak Republic, Romania, Lithuania, Czech Republic, Hungary, Poland, Estonia, Latvia, Ukraine, and Moldova) are enough high to become a strong regulatory instrument of state fiscal and environmental policies, or it needed to be improved.

3. RESEARCH METHODOLOGY

The aim of the paper is an assessment of fiscal effectiveness of environmental taxes and identification the most influential from its volatility macroeconomic indicators and environmental security parameters. Firstly, analysis of the existed literature allows highlighting different approaches to the assessment of fiscal effectiveness of taxes. The most popular are total tax revenues, certain tax revenue to total tax revenue ratio, certain tax revenue to total budget revenue ratio, and certain tax revenue to GDP ratio. In this research we are focused on two measures such as environmental tax revenues (Tax) and environmental tax revenue to total tax revenue ratio (ETTR). These two indicators were chosen because of the availability of appropriate statistical information in open access and collinearity issues (GDP is one of the independent variables, so tax revenue to GDP ratio is not the better option). These indicators were collected from the Eurostat database [3]. While environmental tax' fiscal effectiveness proxies form a set of independent variables, it is also created a set of dependent variables that characterize macroeconomic and environmental security. Such indicators as GDP growth (annual %) (GDPg); GDP per capita, PPP (constant 2011 international US$) (GDPpc); Industry (including construction), value added (annual % growth) (IVA); Foreign direct investment, net inflows (BoP, current US$) (FDI); Gross capital formation (current US$) (GCF); Research and development expenditure (% of GDP) (R&D); Renewable electricity output (% of total electricity output) (REO). All the above-mentioned indictors were collected from the World Development Indicators of the World Bank DataBank [4]. This research is realized for 10 European countries: Slovak Republic, Romania, Lithuania, Czech Republic, Hungary, Poland, Estonia, Latvia, Ukraine, and Moldova for 2004-2018. Identification the most influential macroeconomic indicators and environmental security parameters from its volatility of fiscal effectiveness of the environmental taxes is realized with the panel data regression analysis in Stata software. It should be noted that with the aim of increasing of the quality of regression model, we would test the cohesion between one of the dependent and one of the independent variables, while the other dependent variables will be included as, so-called, control variables. Descriptive statistics for the whole set of variables is presented in Table 1.

Table 1: Descriptive statistics

Variable	Observations	Mean	Standard Deviation	Min	Max
Tax	120	2743.259	2963.567	203.87	13500.41
ETTR	147	7.675	1.471	5.18	11.63
GDPg	150	3.21	4.761	-14.814	12.109
GDPpc	149	16762.9	6835.427	3715.713	31326.29
IVA	148	3.147	7.624	-24.823	19.188
FDI	150	5.51e+09	1.27e+10	-6.55e+10	7.51e+10
GCF	150	3.03e+10	2.96e+10	6.85e+08	1.32e+11
R&D	142	.85	.424	.254	2.307
REO	120	16.605	17.385	.582	69.588

4. RESULTS

Based on the panel data regression analysis it was not revealed statistically significant impact of both environmental tax' fiscal effectiveness measures on GDP growth, industry value added growth, net inflows of foreign direct investments, renewable electricity output to total electricity output. Moreover, GDP per capita is not sensitive to the change of environmental tax revenue to total tax revenue ratio, while research and development expenditure to GDP ratio does not dependent on the volatility of environmental tax revenue. Nevertheless, it was revealed statistically significant influence of environmental tax revenue changes on GDP per capita (Table 2) and gross capital formation (Table 3). Moreover, dynamics of environmental tax revenue to total tax revenue ratio has statistically significant impact on gross capital formation (Table 4) and research and development expenditure to GDP ratio (Table 5).

Table 2: Regression analysis results on identification of influence of environmental tax revenue on GDP per capita

GDPpc	Coefficient	Standard Error	t-value	p-value	Significance
Tax	1.297	0.292	4.44	0.000	***
IVA	-6.636	16.785	-0.40	0.693	
FDI	0.000	0.000	0.34	0.736	
GCF	0.000	0.000	1.25	0.211	
R&D	1868.620	636.957	2.93	0.003	***
REO	52.914	20.591	2.57	0.010	**
Constant	11547.010	1474.389	7.83	0.000	***
Overall r-squared		0.628	Prob > chi2		0.000
*** p<0.01, ** p<0.05, * p<0.1					

The model has sufficient level of quality based on its R-squared. Namely, independent variables explain 62.8% variation of GDP per capita. Moreover, regression analysis revealed that an increase of environment tax revenue in 1 mln Euro leads to the increase of GDP per capita in 1.297 US Dollars. Moreover, increase of R&D expenditures in 1% triggers GDP per capita growth in 1868.62 US Dollars, increase of renewable electricity output in 1% leads to GDP per capita growth in 52.92 US Dollars.

Table 3: Regression analysis results on identification of influence of environmental tax revenue on gross capital formation

GCF	Coefficient	Standard Error	t-value	p-value	Significance
Tax	11100000.000	901000.000	12.32	0.000	***
GDPg	-75700000.000	334000000.000	-0.23	0.821	
IVA	150000000.000	209000000.000	0.72	0.474	
FDI	0.097	0.071	1.36	0.173	
R&D	-2720000000.000	3330000000.000	-0.82	0.415	
REO	-122000000.000	102000000.000	-1.20	0.230	
Constant	9010000000.000	5400000000.000	1.67	0.095	*
Overall r-squared		0.899	Prob > chi2		0.000
*** p<0.01, ** p<0.05, * p<0.1					

The model has high quality, but only one variable has statistically significant influence on gross capital formation. Specifically, at 1% level increase of environmental tax revenue in 1 mln Euro leads to the increase of gross capital formation in 11.1 mln US Dollars.

Table 4: Regression analysis results on identification of influence of environmental tax revenue to total tax revenue ratio on gross capital formation

GCF	Coefficient	Standard Error	t-value	p-value	Significance
ETTR	-1960000000.000	1040000000.000	-1.88	0.060	*
GDPg	-220000000.000	424000000.000	-0.52	0.603	
IVA	169000000.000	269000000.000	0.63	0.529	
FDI	0.202	0.103	1.96	0.050	*
R&D	5140000000.000	4870000000.000	1.05	0.291	
REO	3990000.000	161000000.000	0.03	0.980	
Constant	39400000000.000	13000000000.000	3.02	0.003	***
Overall r-squared		0.766	Prob > chi2		0.000
*** p<0.01, ** p<0.05, * p<0.1					

Regression analysis results underline that an increase of environmental tax revenue to total tax revenue ratio in 1% results in decrease of gross capital formation in 1960 mln US Dollars at 90% confidence interval. Besides an increase of foreign direct investments net inflow in 1 US Dollar allows to increase gross capital formation in 0.202 US Dollar.

Table 5: Regression analysis results on identification of influence of environmental tax revenue to total tax revenue ratio on research and development expenditures to GDP ratio

R&D	Coefficient	Standard Error	t-value	p-value	Significance
ETTR	-0.038	0.021	-1.83	0.067	*
GDPg	-0.010	0.008	-1.21	0.227	
IVA	0.006	0.005	1.09	0.278	
FDI	0.000	0.000	-1.75	0.080	*
GCF	0.000	0.000	1.08	0.279	
REO	0.008	0.003	2.87	0.004	***
Constant	0.986	0.220	4.49	0.000	***
Overall r-squared		0.608	Prob > chi2		0.000
*** p<0.01, ** p<0.05, * p<0.1					

The last model underlines that R&D expenditures depends mostly on volatility of environmental tax revenue to total tax revenue ratio, foreign direct investments net inflow, and renewable electricity output. Namely, an increase of environmental tax revenue to total tax revenue ratio in 1% leads to the decrease of R&D expenditures in 0.038%; an increase of renewable to total electricity output ratio stimulates R&D expenditures increase in 0.008%.

5. CONCLUSION

Considering empirical research results, it was revealed that environmental taxes have low level of fiscal effectiveness and regulatory power in analyzed countries, because it was not confirmed statistically significant impact of environmental tax revenues and environmental tax to total tax revenue ratio on the most of the dependent variables (GDP growth, industry value added growth, net inflows of foreign direct investments, renewable electricity output to total electricity output). In turn, at least one of the above-mentioned independent variables influences such parameters as GDP per capita, gross capital formation and research and development expenditures to GDP ratio. Thus, it leads to the conclusion that in developing European countries environmental taxation system closely connected with investment and innovation processes, while cohesion with social and economic perspectives is weaker.

Thus, in order to improve fiscal effectiveness and regulatory capacity of the environmental taxation system in Ukraine it is proposed:

- Develop a system of tax benefits for companies that use resource-saving technologies and use eco-friendly equipment;
- Set limits on emissions and discharges of harmful substances, increase tax rates over excess limits, collect fees for exceeding the limits on corporate profits;
- Establish a progressive scale of environmental tax rates depending on the amount of emissions;
- Keep records of paid environmental taxes on personalized accounts of enterprises, with the return of the share of funds for the implementation of green investments;
- Introduce taxation of packaging and products containing environmentally harmful substances;
- Pay attention to preventive measures to reduce sources of pollutant emissions4;
- Install transparent system of redistribution of budget revenues collected from environmental taxes;
- This recommendations might help synchronization of Ukraine's tax system with the European tax practice and key global principles in this area.

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CURRENT TRENDS IN THE STATE AND DEVELOPMENT OF THE INSURANCE SECTOR

Nizami Khudiyev
Azerbaijan State University of Economics (UNEC)
Baku, Istiqlaliyyat str., 6, AZ1001, Azerbaijan
nizami_khudiyev@unec.edu.az

Natalia Putivtseva
Belgorod National Research University
Belgorod, Pobedy St., 85, 308015, Russia
putivzeva@bsu.edu.ru

Tatyana Zaitseva
Belgorod National Research University
Belgorod, Pobedy St., 85, 308015, Russia
zaitseva@bsu.edu.ru

ABSTRACT

Insurance is one of the ancient categories of relations between the insured and the insurer, which is recognized as an element in the relations of production, and is related to the protection of the property interests of individuals and legal entities (policyholders) when certain events (insured events) occur at the expense of cash funds. This article is devoted to the issue of trends, the impact of problems and barriers on the development of the insurance sector. Since the insurance services market has several shortcomings, although it is one of the main areas of the economy in the Russian Federation, there is a need to form effective insurance protection, which is the main task of insurance companies and the state as a whole. To identify problematic issues in the functioning of the insurance sector and develop directions for their solution, it is necessary to monitor its condition. The paper studies the dynamics of changes in the structure of insurance companies by the concentration of the insurance market. The figures are also presented that positively characterize the interest of insurers for entrepreneurial activity and the development of insurance products. The article analyzes the current state and development trends of the insurance sector. The authors study the development strategy of the insurance industry of the Russian Federation, identify the factors affecting the development of the insurance industry. A forecast is made of the dynamics of the insurance market and its individual segments. As a result of the study, factors were identified that affect the state and development of the Russian insurance sector, and in conclusion, conclusions are drawn.

Keywords: *Insurance industry, Insurance sector, Insurance, CTP, CASCO, Life insurance, Introduction of innovations to the insurance market*

1. INTRODUCTION

Insurance, being a unique way of ensuring the preservation of property interests of individuals and business entities, is currently in a policy and institutional trap that does not allow this industry to fulfil its basic purpose. Undergoing significant changes under the influence of the unfavorable challenges of the turbulent global economy and a number of domestic economic factors, the financial markets of transitive countries inevitably causes the transformation of established relations in the insurance environment, thus affecting the deep foundations of the national insurance market.

Taking into account modern economic trends, it is possible to single out the main trends characterizing the development of the insurance industry in Russia as follows:

1) Low rate of the penetration level of insurance in GDP, due to the lack of growth in effective demand for insurance products;
2) An increase in the share of life insurance in the fee structure for voluntary types of insurance against the background of falling fees for classical types of property insurance;
3) The growth of the importance of mandatory and imputed types of insurance in the structure of insurance fees and payments;
4) Reorientation of outgoing reinsurance flows towards Asian countries and growth of the importance of the Russian National Reinsurance Company (RNRC) in the domestic reinsurance market;
5) Decrease in the total number of subjects of insurance business due to the continuing consolidation of insurers against the background of tightening of the regulator's requirements to the level of their financial stability (Nerovnya, Samoilova, 2017; Nerovnya Yu.V., Romanov D.G., Shirshov V.Yu, 2018).

The level of development of the insurance market makes it necessary to modify the system of insurance regulation, taking into account the interests, specificities of the territories, to align the strategy of development of the insurance sector with the with strategies and needs for insurance protection, including for small and medium businesses in certain industries and for individuals. In the course of the research, the authors rely on the work of domestic and foreign scientists on the development of the modern insurance market, regulation and supervision in the insurance system, state licensing of insurance activities, the introduction of new insurance products. Problems of insurance market development theory and practice were addressed by V.Yu. Abramov (2007), A. Bredikhin (2018), E.V. Chernikina (2018), G.V. Chernova (2019), S.P. Danchenko (2013), V. Kalinin (2012), N.V. Kirillova (2018), T.V. Kotova (2018), Yu.V. Nerovnya (2015, 2017, 2018), T.V. Nikitina (2012), V.Yu. Shirshov (2015, 2018a, 2018b), E.V. Sokolova (2018) et al. Certain aspects of these issues are also considered by foreign scientists: Asmussen, S., Steffensen, M. (2020), Cappiello, A. (2020), De Haan, J., Oosterloo, S., Schoenmaker, D. (2015), Olajide, S. (2013), Outreville, J.F. (1998), Albrecher, H., Bommier, A., Filipovi´c, D., Koch-Medina, P., Loisel, S., Schmeiser, H. (2019), Bacani, B., McDaniels, J., Robins, N. (2015), Balasubramanian, R., Libarikian, A., McElhaney, D. (2018) Catlin, T., Lorenz, J. T., Nandan, J., Sharma, S., Waschto, A. (2018), Cummins, J.D., Venard, B. (2008) etc. The aim of the research is to disclose modern trends in the state and development of the insurance sector of Russia and to reveal effective directions of insurance market development. The article uses insurance analysts, generalization and identification of factors of insurance market development, as well as deductive, statistical and graphic research methods. The problems and positive and negative aspects affecting the functioning of the insurance market of the Russian Federation are systematized. Current problems, factors are considered, and hence possible forecasts and prospects of the insurance industry are proposed.

2. DISCUSSION

Despite the nominal 57% increase in insurance premiums that had been demonstrated since 2012 (Figure 1), the level of insurance penetration in GDP was still low and amounted only to 1.38% of GDP in 2017. This indicator is insufficient and testifies to underestimation of insurance mechanisms in the system of redistribution of GDP of the Russian Federation. Meanwhile, in OECD countries, the share of insurance against GDP varies from 1% to 20%. The leader is Luxembourg, where the ratio of insurance premiums to GDP is 36.5% due to life insurance (33.7%).

In the regional section of the groups of countries, the highest rates are observed in the countries of the North American union North American Free Trade Area (NAFTA) about 10.3% of GDP, mainly due to high US indicators (CBR, 2018).

Table 1: Dynamics of insurance premiums and payments in the global insurance market

Indicators	2012	2013	2014	2015	2016	2017
Total amount of premiums received	812469	904863	987772	1023819	1180631	1278841
Total amount of payments	370781	420769	472268	509217	505790	509722

Source: CBR, 2018

According to the established trend, the main generator of insurance premiums growth in the target segment of voluntary types of insurance and the market as a whole is life insurance (Figure 2). It should be noted that, in accordance with the consolidated accounts of the subjects of insurance business published by the Central Bank of the Russian Federation, the volume of the insurance market without taking into account life insurance revenues showed negative dynamics of growth in 2017 decreased by 1.8%. While in absolute terms the increase in insurance premium receipts is fixed at 98 billion rubles. At the same time, almost 116 billion rubles in total growth were provided by the segment of life insurance. Thus, without taking into account life insurance, the insurance market lost more than 17 billion rubles of the premium. As a result of 2017 compared to 2016, the overall growth rate of the insurance market amounted to 8.3%, its aggregate volume reached 1.278 billion rubles (Figure 2).

Table 2: Dynamics of insurance premiums for voluntary insurance from 2013 to 2017 in Russia Federation, bln. RUR.

Indicators	**2013**	**2014**	**2015**	**2016**	**2017**
Entrepreneurial and financial risks insurance	21,9	22,5	22,6	30,1	35,6
Liability insurance	29,7	37,9	41,0	54,9	47,7
Property insurance	393,8	420,4	374,7	374,8	353,0
*Personal insurance**	208,7	219,6	209,8	245,8	261,3
Life insurance	84,9	108,5	129,7	215,7	331,5

** Except for life life insurance*

Source: CBR, 2018

The countries of this group, as well as Russia, are characterized by a higher index in insurance other than life insurance (6.1%). The ratio of the total insurance premium to GDP for the EU countries is 8.1%. At the same time, the indicator for life insurance (5.3%) is almost twice as higher than for life insurance (2.8%). Countries in Latin America, Eastern Europe and Africa traditionally have a lower penetration rate of insurance, from 2% to 3.5% of GDP on average. The values of a similar indicator of Hong Kong, China, and also South Africa are higher (14.7%-14.8%) due to a much higher weight of life insurance (13.3% and 12% respectively). The insurance market is one of the elements of the financial market, which is aimed, on the one hand, at the development of social reproduction and, on the other hand, at the active influence on a country's financial flows (CBR, 2018). The functioning of the insurance market occurs within the financial system, both on a partnership basis and in a competitive environment. This is a great competition between insurance companies (Table 1) for the temporary available money of citizens and economic entities.

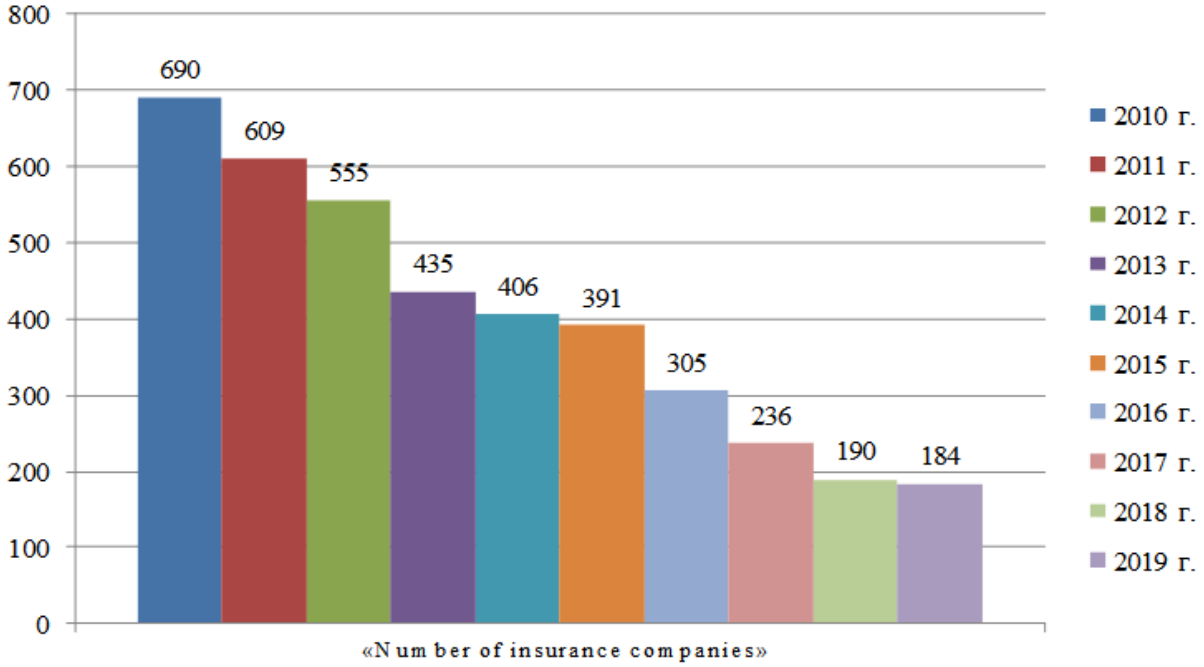
Table 3: Financial performance of the top 5 insurance companies in Russia

Insurance company	Sum of insurance collecting for the 3 quarter (thousand rubles)		Dynamics (thousand rubles)	Dynamics (%)
	2018	2019		
1. SOGAZ	140 815 996	159 108 199	+18 292 203	+12.99%
2. Sberbank Life Insurance	123 009 676	119 258 722	-3 750 954	-3.05%
3. Ingosstrakh	61 368 787	77 998 250	+16 629 463	+27.10%
4. Alfa Strakhova- nie	72 602 056	77 977 054	+5 374 998	+7.40%
5. VTB Insurance	76 732 798	76 052 372	-680 426	-0.89%

Source: Federal Service for State Statistics (Rosstat) Official Website

The Russian insurance market has a level of distrust, both for the insurers and the insured. This is primarily due to the low financial stability of insurers, the revocation of licences and the poor market infrastructure. Currently, there are 184 insurance companies in Russia (Figure 1) which carry out activities monitored by the state's main supervisor − Central Bank of Russia.

Figure 1: Dynamics of the number of insurance companies in 2010-2019 in Russia



Source: The Central Bank of the Russian Federation (Bank of Russia) Official Website

The dynamics showed that on average about 30 insurance organizations ceased their activities each year. The main reason for this was the merger of insurance companies, but the reduction of license reviews had also affected. Thus, as of 01.01.2020, 21 insurance companies are currently operating in the insurance market of Azerbaijan, including 1 reinsurance company and 6 brokerage companies. Azerbaijan's insurance companies provide a wide range of compulsory and voluntary insurance services. At the beginning of 2020, 80 types of insurance were registered in the Azerbaijan Republic, 30 of which are in force. Whereas there are about 500 types of insurance in Europe and up to 3,000 in the US. Insurance companies, both compulsory and voluntary, provide many different types of insurance services. However, the proportion of compulsory and voluntary insurance has been changing in different years (Table 2).

Table 4: Insurance premiums by type of insurance in 2009-2019 in Azerbaijan Republic (million manats)

Types of insurance	2009	2019
Insurance premiums total	163.3	681.2
including		
Under voluntary insurance:	132.9	456.4
- life insurance	28.0	219.3
- property insurance	79.2	133.1
- liability insurance	25.7	20.9
Under compulsory insurance	29.6	224.6

Source: CBA Official Website, 2020

An analysis of the insurance premiums of the Republic of Azerbaijan showed that in 2019 there was a fourfold increase relative to 2009. Compulsory insurance premiums in 2019 increased by approximately 7.2 times over 2009. In general, voluntary insurance accounted for about 60-70% of total premiums in 2009-2019. Big changes have also occurred in the structure of payments, namely, in voluntary insurance in 2019 compared to 2009, insurance payments increased 5 times. However, the structure of personal and property insurance shows an increase of 6.3 and 1.9 times, respectively, as can be seen from the table below.

Table 5: Insurance payments by type of insurance in 2009-2019 in Azerbaijan Republic (million manats)

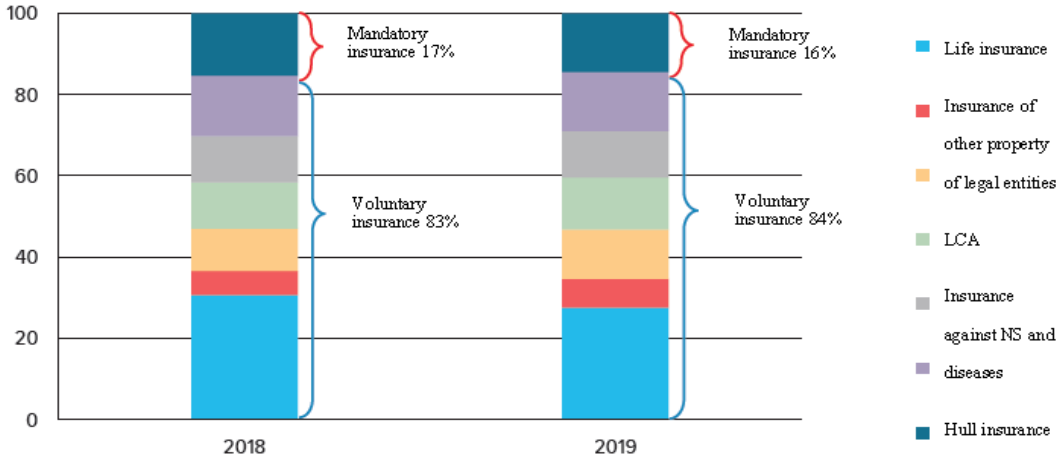
Types of insurance	2009	2019
Insurance payments total	53.07	301.6
including		
Under voluntary insurance:	42.8	220.9
- life insurance	17.4	121.8
- property insurance	23.4	37.6
- liability insurance	2.0	1.2
Under compulsory insurance	10.4	80.6

Source: CBA Official Website, 2020

According to the data of the insurance supervision service, the insurance company "Pasha Heyat Sigorta" retained the leadership among insurance companies operating in Azerbaijan by the amount of premiums in 2019. Last year it collected 265.19 million manats, or 34.5% of all insurance premiums. Among the 10 leading insurance companies to collect premiums were also included: "Ateshgah", "Azal Sigorta", "Xalq Sigorta" et al. In Russia, in 2019, the indicators of the insurance market were constantly changing, thus that the amount of premiums in the market ceased to grow due to the reduction of the product «life insurance», which was the main source of the branch [6]. Despite this situation, new directions for the development of the insurance market such as voluntary medical insurance (VMI) and property insurance, have begun to develop. The insurance market in 2020 will depend on the growth rate of lending to individuals and the subsequent promotion of the VMI Insurance Program [9]. Therefore, it is necessary to analyse the structure of the insurance market (Figure 2 and Table 4), review and suggest changes in the strategy of development of the Russian insurance market.

Figure following on the next page

Figure 2: Structure of the Russian insurance market by amount of premiums



Source: Expert RA Rating Agency

At the end of 2019, the amount of collected insurance premiums amounted to 1480 billion rubles. For the first time since 2009, the market has not grown. The previous year, premiums had increased by more than 15%. In 2019, the ratio of collected insurance premiums to gross domestic product decreased by 0.07 percentage points, to 1.35%.

Table 6: Dynamics of insurance premiums and insurance payments in 2010-2019 in Russia

Date	Insurance premiums (billion rubles)	Rate of change in premiums (%)	Insurance payments (billion rubles)	Rate of change in payments (%)	Payout ratio (%)
2010	555,8	4.2	295.97	3.8	53.25
2011	665.02	19.65	303.76	2.63	45.68
2012	809.06	21.66	369.44	21.62	45.66
2013	904.86	11.1	420.77	12.9	46.5
2014	987.77	8.5	472.27	11.4	47.81
2015	1023.82	3.3	509.22	7.1	49.73
2016	1180.63	15.3	505.8	-0.67	42.84
2017	1278.84	8.32	509.72	0.77	39.86
2018	1479.5	15.69	522.47	2.,5	35.31
2019	1480.2	0.04	609.46	16.47	41.21

Source: Insurance portal

The market has performed worse in the last 10 years. The amount of net premiums decreased by 46 billion rubles. In contrast, payments for the market as a whole increased by 16.5%. The analysis of the insurance market made it possible to identify the main factors that have a significant and multidirectional impact on the development and dynamics of the insurance market:

- New rules for the processing and disclosure of information on life insurance contracts;
- Expiration of investment life insurance policies acquired 3-5 years ago;
- High interest in loan products from individuals;
- Active development of VMI programmes;
- Extension of the tariff grid and administration of OSAGO coefficients;
- Decline in new car sales;
- Low incomes of citizens;
- Low financial awareness of insurance services;

- Gaps in insurance legislation;
- Lack of highly qualified personnel;
- Lack of widespread market practices and a clear understanding of the benefits of new technologies;
- Lack of necessary data;
- Unpreparedness of the user of insurance services;
- Lack of ready-made IT solutions [1].

The formation of an effective insurance market is constrained by the factors listed above and by the influence of the foreign and domestic policies of the state [7]. Fraud and unfair competition must not be forgotten. In turn, budget constraints, high 2uncertainty about the efficiency of investment in new technologies also constrain companies in this direction. Let us make a forecast for the next year and present it in table 5.

Table 7: Forecast for the coming year

Indicator	Factors	Results
Market participants	Strengthening the conditions for financial sustainability, 2nd stage of raising the statutory capital, non-competitiveness of small insurers	Voluntary relinquishment of licences, including partial business consolidation through portfolio transfers, reduction in the number of regional companies
Life insurance	Banking activity, fight against misselling	Growth in the sales of life insurance savings products against the stagnation of total premiums
Accidental death and dismemberment insurance	Reduction in lending to individuals, «base effect»	Deceleration of premiums to 5-7%
Voluntary medical insurance (vmi)	Reduction in the availability of assistance under the compulsory medical (CMI) insurance programme, active introducetion of information technology	Reduction in number of companies in segment due to discontinuation of licenses for voluntary insurance by medical insurance organizations, increased sales of policies for individuals, increased popularity of telemedicine, including as a stand-alone product
Personal property insurance	Reduction of the key rate of the Bank of Russia, commencement of the Emergency Housing Insurance Act	Moderate growth in demand for mortgage and housing insurance under regional programmes
Compulsory liability insurance of vehicle owners	Active work of the financial ombudsman, postponement of the next stages of the reform, increase in the cost of spare parts due to foreign currency appreciation	Increase of the tariff in the regions of the «red zone», decrease of the share of court payments, increase of loss
Comprehensive cover	Increased cost of spare parts due to foreign currency appreciation, lower sales of new cars, increased popularity of carpooling and increased development of public transport in major cities	Increase in losses, increase in tariffs, decrease in the number of contracts

Source: Expert RA Rating Agency

The formation of an effective insurance market requires new modernized approaches and information solutions, in connection with this, the Strategy of the development of the insurance industry up to 2021 (hereinafter referred to as the Strategy) [2] was supplemented and approved

by the Government of the Russian Federation. The Strategy is aimed at the comprehensive development of the insurance industry, which will contribute to the economic stability of society, and to increase the social security of citizens of the country by building effective insurance protection of property rights of individuals or legal entities, as well as attracting investors to the country's economy. This document is intended to promote insurance services for consumers by means of simplified contracting or settlement of losses. This will encourage the contracting. Information and telecommunications networks (e-service) may also be used to increase the availability of insurance services. It is also possible to propose certain measures for the development of the insurance market: firstly, to create a favourable tax regime - everyone seeks to maximize profits and reduce the costs of doing business, which is the main economic reason for the concentration and centralization of capital and the increase in the size of insurance companies; secondly, state supervision - for example, the regulation of the price scale for services; thirdly, tough competition - market saturation by small players (fraud or one-way firms); fourthly, a global pandemic that affects the economy, the budget of the country and the population, the financial markets, including the dynamics of the insurance market. Thus, in the Russian Federation, the insurance market is a powerful lever affecting the economy, as it has an impact on financial stability. The insurance market is developing, the pace of development is increasing, and new types of insurance are being improved [10].

3. CONCLUSION

The insurance market has great promise; thus adjustments are needed in the supervisory field as well as in the insurance potential itself. Supervisor - The Central Bank of Russia should monitor the activities of insurance organizations with a view to activating investment policy, since insurers are a powerful instrument of investment. Financial literacy of the population, influence of advertising, improvement of sales, IT solutions in the field of new insurance products should be improved.

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EVALUATION OF THE FINANCIAL HEALTH OF NON-PROFIT ORGANIZATIONS: A CASE STUDY IN THE SLOVAK REPUBLIC

Ivana Podhorska
Department of Economics, University of Zilina
Univerzitna 1, 010 26, Zilina, Slovak Republic
Ivana.podhorska@fpedas.uniza.sk

ABSTRACT

Paper deals with description of five bankrupt prediction models in Slovak Republic. The issue of enterprise bankruptcy is still actual topic in Slovakia but also in abroad. Works dealing with the enterprise bankruptcy have already appeared in the 30s of the 20th century. Many enterprises deal with the question of their probability of default or bankruptcy and financial health as a whole. Fear from possibility of bankrupt forces enterprises to obtain necessary information which could warn them of their negative development. Financial analysts are looking ways for prediction of enterprise bankrupt. One of the useful tools for measure probability of bankrupt are predictive models belong to the ex ante financial analysis. This paper is focused on the elementary analysis of bankrupt prediction models which were created in specific Slovak conditions. The main aim of the paper is evaluation of financial health of organizations from non-profit sector. Data consists of financial statements of 1,320 Slovak non-profit organizations in 2018. According to the results of these models in the database, will be created analysis of their usefulness.

Keywords: *Financial health, Prediction models, Non-profit sector*

1. INTRODUCTION

Nowadays, the problem with failure of business entities is very actual topic in market economy. One of the biggest business risks is credit risk, which relates with secondary insolvency of business entity. The failure of business entity has negative influence on all subject with relationship with this business entity. Possibility of evaluating and predicting credit risk and financial situation of business entities is advantage for creditors, investors and business owners. Based on the assessment and forecasts of credit risk and financial health of business entities, we are able to take necessary corrective action, in time. (Hallowell et al., 2019) Economists are able to evaluate and predict credit risk and financial health of business entities due to ex-ante financial analysis - through prediction models. Prediction models can early predict the probability of failure of business entity. The problem which is necessary to solve, for application of prediction models, is the selection of prediction model which is able to provide the best evaluation of probability of failure of analysed business entity and of course, model which is able to provide exact and relevant results (Siekelova, Moravcikova 2015). The possibilities of forecasting the development of financial health of business entity and its future solvency or insolvency have taken attention of economists since last century. The issue of relevant prediction model is very actual topic not only in Slovakia but also in abroad. Prediction models are suitable for management of business entity because they allow to correctly interpret relevant indicators of potential problems in the future. Thanks to these indicators, the negative development in entity may be identified before its results bring more serious financial and economic problems or financial crisis. In case, when business entity was not able to find any crisis solution, these financial problems can end up like its bankrupt (Karas & Srbova, 2019). The designation 'non-profit sector' emphasizes that, unlike commercial and profit-making organizations, the aim is not to generate profits and distribute them among owners. If any profit is achieved, it goes back to the organization's programs and operations. Evulation of their financial health and probability of their bankrupt is considerably complicated.

The main aim of the paper is evaluation of financial health of organizations from non-profit sector. Data consists of financial statements of 1,320 Slovak non-profit organizations in 2018. For evaluation of their financial health will be used 5 prediction models, which were created in Slovak Republic. According to the results of these models in the database, will be created analysis of their usefulness.

2. LITERATURE REVIEW

The first studies devoted to bankruptcy prediction were based on one-dimensional analysis of the financial ratios. These studies simply analysed financial ratios and compared the results of these indicators in creditworthy enterprises and enterprises in bankrupt. In 1930, the Bureau of Business Research presented a study that analysed the development of 24 financial ratios from 29 industrial enterprises in bankrupt (Fitzpatrick, 1932, Malin, 2017, Yakymova & Kuz, 2019). In 1935, R. F. Smith and A. Winakor verified the BBR study results. They analysed financial indicators of 183 enterprises in bankrupt and their results confirmed BBR study (Bellovary et al., 2007, Siekelova et al., 2019). W. H. Beaver was the first economist who used statistical methods for prediction of financial health of enterprises. In his study, "Financial Ratios of Prediction of Failure", in 1966 he divided enterprises into the two category of creditworthy enterprises or bankrupt enterprises, based on the certain number of financial indicators (Beaver, 1966, Jones, 1987). In 1968, E. I. Altman created one of the most famous and also the first bankruptcy prediction model, which is known as "Z-score". This model interconnected explanatory power of several variables. This model is the basic stone of multiple discrimination analysis (Altman, 1968, Jakoubek & Brabenec, 2012). Since this time, the number of bankruptcy models has risen up. In 70s of 20ty century, were published 28 studies about prediction models, in 80s of 20ty century were published 53 studies and in 90s of 20ty century were published 70 studies about prediction models. Other authors who have tried to improve Altman´s multiple discrimination analysis are for example Deakin (1972), Taffler (1974), Loris (1976), Springate (1983), Fernandez (1988), Neumaier and Neumaierova (1995, 1999, 2000, 2005), Gajdka and Stos (1996), Virag and Hajdu (1996), Chrastinova (1998), Binkert (2000), Gurcik (2002), Sharita (2003) and so on (Virag & Kristof 2005, Mousavi et al., 2015, Gurcik, 2002, Agarwal & Taffler, 2007, Kubickova, 2015, Zavrgen, 1985, Siekelova, 2017, Poddig, 1995, Ohlson, 1990). In 70s of 20ty century, also raised prediction models based on the logistic regression - logit and probit models. The first authors who used logistic regression for prediction the bankrupt of enterprise were Santomero and Vinso (1977) and Martin (1977). They only analysed bankrupt of American banks. In 1980, Ohlson analysed bankrupt of enterprise by logistic regression in general. The result of his model is one value which directly determining the probability of bankrupt of enterprise. Logit analysis was also analysed in works of Casey and Bartczak (1985), Zavgren (1985), Pantalone and Platt (1987), Jakubik and Teply (2006), Sajter (2008), Hurtosova (2009), Bredar (2014), Gulka (2016) (Zavrgen, 1985, Siekelova, 2017, Poddig, 1995, Ohlson, 1990, Hiadlovsky & Kral 2014). A pioneer in the area of probit regression was M. Zmijewski (1984) whit his work "Methodological Issues Related to the Estimation of Financial Distress Prediction Models". Other authors followed up his results, for example Gloubos and Gramamatikos (1988), Skogsvik (1990), Theodossiou (1991), Boritz and Kennedy (1995), Lennox (1999) (Gulka, 2016, Zmijewski, 1984, Skogsvik, 1990, Svabova & Kral, 2016, Durica & Adamko, 2016). Since the 90s of 20ty century have been created studies focused on the development of prediction models by neural network methods. The basic stone of this method put Odoma and Sharda in 1990. Later Coats a Fant (1992), Altman a Varetto (1994), Wilson a Shardy (1994), Rudorfer (1995), Alici (1996), Serrano-Cinca (1996), Kivilluoto (1998), Sung, Chang and Lee (1999), Zhang (1999) Lee (2001), Witkowska (2002) (Bellovary et al., 2007, Hiadlovsky & Kral 2014, Press & Wilson, 1978).

3. METHODOLOGY

In this chapter we describe theoretical aspects of bankruptcy prediction models created in Slovak Republic. We focused on the 5 Slovak prediction models, namely: Binkert model, Chrastinova model, Gurcik model, Delina-Packova model I and Kliestik et al. model. The main aim of the paper is evaluation of financial health of organizations from non-profit sector. Data consists of financial statements of 1,320 Slovak non-profit organizations in 2018. According to the results of these models in the database, will be created analysis of their usefulness.

3.1. Binkert model

During years 1997-1999 CH. Binkert carried out the analysis in which he tried to created tool for placement enterprises into two groups, namely: bankrupt zone and creditworthy zone. He worked with 160 enterprises. He created his model by multiple discriminant analysis and he worked with 72 input variables. Finally, his prediction equation consisted of 8 variables. All of them are identified by two indexes. (Belas et al., 2018, Svabova & Durica, 2019) The upper index identifies the year from which the value was taken, the lower index represents the ratio in the database of variables. Final equation of multiple discriminant analysis has following form:

$$B_s^{1-3} = 0.180U^1_1 + 0.147U^2_{40} + 0.237U^2_{49} + 0.337U^2_{63} + 0.514U^3_{13} + 0.505U^3_{29} + 0.271U^3_{30} + 0.207U^3_9 \quad (1)$$

Following table (1) shows 8 financial variables which represent individual parameters of prediction equation.

Table 1: Financial variables of Binkert model

Variable	*Calculation*
U^1_1	current assets^1/current liabilities^1
U^2_{40}	equity^2/long-term assets^2
U^2_{49}	EAT^2/total revenues^2
U^2_{63}	total revenues^2/added value^2
U^3_{13}	(total assets^3/total assets^2) - 1
U^3_{29}	(equity^3/equity^2) - 1
U^3_{30}	(total liabilites^3/total liabilites^2) -1
U^3_9	EAT^3/(equity^3 + reserves^3 + long-term liabilites^3)

Source: Own processing according to Valaskova (2014), Siekelova et al. (2017)

According to results of prediction equation of Binkert model, model classifies probability of enterprises bankrupt into two groups. Limits for classification are captured in table (2).

Table 2: Limits of Binkert model

Limit	*Category*
$B \geq 4.35$	prosperity zone
$B \leq -4.35$	bankrupt zone

Source: Own processing according to Valaskova (2014), Siekelova et al. (2017)

3.2. Chrastinova model

The second model for prediction of enterprise bankrupt, which was created in Slovak Republic, was Chrastinova model, CH-index. Model was created by Z. Chrastinova in 1998. CH-index was adapted to the specific needs of enterprises operating in the agricultural sector. Final model prediction equation is the product of multiple discriminant analysis. Chrastinova analyzed 1,123 enterprise from agricultural sector and she worked with 10 input variables.

$$CH = 0.37x_1 + 0.25x_2 + 0.21x_3 - 0.1x_4 - 0.07x_5 \quad (2)$$

Following table (3) shows 5 financial variables which represent individual parameters of prediction equation.

Table 3: Financial variables of CH-index

Variable	*Calculation*
x_1	EAT/total equity and liabilities
x_2	EAT/total revenues
x_3	cash flow/total liabilities
x_4	(total liabilities/total revenues)*365
x_5	total liabilities/total equity and liabilities

Source: Own processing according to Kicova and Kramarova (2013), Chrastinova (1998)

According to results of prediction equation "CH", CH-index classifies probability of enterprises bankrupt into the three groups. Limits for classification are captured in table (4).

Table 4: Limits for CH-index

Limit	*Category*
CH ≥ 2.5	prosperity zone
2.5 < CH > -5	grey zone
CH ≤ -5	bankrupt zone

Source: Own processing according to Kicova and Kramarova (2013), Chrastinova (1998)

3.3. Gurcik model

The third Slovak model is Gurcik model, G-index, was created by L. Gurcik in 2003. His model is based on the multiple discriminant analysis. He analyzed 60 enterprises from agricultural sector in Slovak republic. Finally, his final form of model includes 5 variables:

$$G = 3.412x_1 + 2.226x_2 + 3.227x_3 + 3.419x_4 - 2.063x_5 \quad (3)$$

Following table (5) shows 5 financial variables which represent individual parameters of prediction equation.

Table 5: Financial variables of G-index

Variable	*Calculation*
x_1	retained earnings/total equity and liabilities
x_2	EBT/total equity and liabilities
x_3	EBT/total revenues
x_4	cash flow/total equity and liabilities
x_5	stocks/total revenues

Source: Own processing according to Gurcik (2002), Svabova and Durica (2016)

According to results of prediction equation "G", G-index classifies probability of enterprises bankrupt into the three groups. Limits for classification are captured in table (6).

Table 6: Limits for G-index

Limit	*Category*
G ≥ 1.8	prosperity zone
-0.6 < G > 1.8	grey zone
G ≤ -0.6	bankrupt zone

Source: Own processing according to Gurcik (2002), Svabova and Durica (2016)

3.4. Delina-Packova I

The fourth model which we analyzed is model created in Slovak Republic in 2013 by R. Delina and M. Packova. They analyzed financial statements of 1 560 Slovak enterprises. They created the model by logistic regression. Finally, they prediction equation included 6 financial variables:

$$P' = 2.86 - 0.0001278x_1 + 0.04851x_2 + 0.2136x_3 - 0.000071x_4 + 0.0001068x_5 - 0.0006116x_6 \quad (4)$$

Following table (7) shows 6 financial variables which represent individual parameters of prediction equation.

Table 7: Financial variables of P´model

Variable	*Calculation*
x_1	(financial assets – current liabilities)/(operating costs – depreciation)
x_2	retained earnings/ total equity and liabilities
x_3	basic capital/total equity and liabilities
x_4	cash flow/total liabilities
x_5	EBT/total revenues

Source: Own processing according to Gavurova et al. (2017)

According to results of prediction equation "P´", model classifies probability of enterprises bankrupt into the two groups. Limits for classification are captured in table (8).

Table 8: Limits for P´model

Limit	*Category*
P´ > 0	prosperity zone
P´< 0	bankrupt zone

Source: Own processing according to Gavurova et al. (2017)

3.5. Klieštik et al.

The financial statements of Slovak companies from the Amadeus database were again used to create the Slovak prediction model. The set thus created consists of 105,708 enterprises, of which 88,252 small, 15,275 medium and 2,181 large. (Valaskova et al., 2018, Valaskova et al., 2019, Kovacova et al., 2019) With regard to the future development of the company, its financial health and prosperity, the set consists of 81,292 prosperous enterprises and 24,416 bankrupt companies. Finally, prediction equation included following variables:

$$y_{SR} = -2.255 + 0.016x_1 - 0.385x_2 - 6.716x_3 + 2.244x_4 - 0.358x_5 + 0.761x_6 + 0.011x_7 + 5.431x_8 + 0.1x_9 + 0.548NACE_1 + 0.1NACE_N - 0.285NACE_Q + 0.980small + 0.326medium + 0.139Region_{BA} + 0.097Region_{KE} \quad (5)$$

Table following on the next page

Table 9: Financial variables of Kliestik et al. model

Variable	*Calculation*
x_1	short-term assets/short-term liabilities
x_2	net income/equity
x_3	net income/total assets
x_4	(long-term + short-term liabilities)/total assets
x_5	short-term assets/total assets
x_6	short-term liabilities/total assets
x_7	cash and cash equivalents/short-term liabilities
x_8	return on assets
x_9	return on equity

Source: Own processing according to Kovacova et al. (2019)

Dummy variables are NACE classification codes I, N and Q, size of small and medium enterprises, region Bratislava and Košice. For their determination in the prediction model zero - unit scheme was chosen, i. if none of these characteristics is present for the analyzed company, we use zero value and the unit indicates the opposite situation and thus the presence of the monitored attributes.

4. RESULTS

The results of the selected prediction models were captured in table. Table 10 show the results of 5 models in 2018 for 1,320 non-profit organizations. We divided the results into three categories, bankrupt, grey zone and prosperity. The bankruptcy zone is characterized by the high probability of bankruptcy. The opposite is the zone of prosperity, which indicates good financial condition of the company. The grey zone is an ambiguous situation.

Table 10: Results of prediction models in non-profit organizations

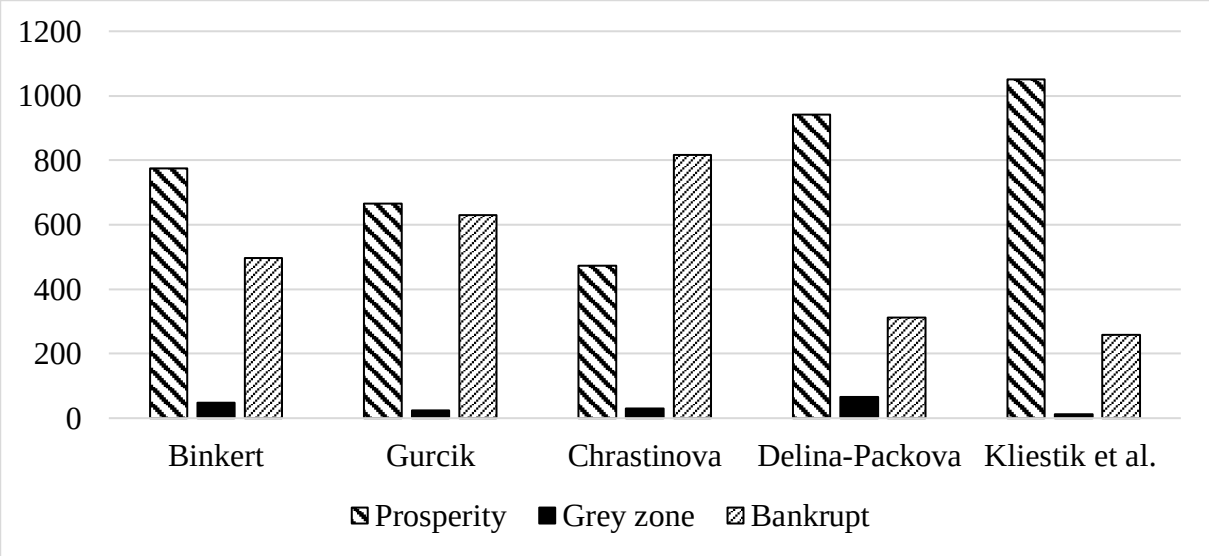
Model	Result			Total
	Prosperity	Grey zone	Bankrupt	
Binkert	775	48	497	1,320
Gurcik	665	25	630	1,320
Chrastinova	472	31	817	1,320
Delina-Packova	942	66	312	1,320
Kliestik et al.	1,050	12	258	1,320

Source: Own processing

Model Kliestik et al. placed the most non-profit organizations into the prosperity zone (1,050 organizations). The Delina-Packova model was on the second place with 942 organizations in prosperity zone. Models Gurcik and Binkert achieved similar results. The Gurcik model included 665 organizations in the prosperity zone and the Binkert model 775 organizations. On the other side model Chrastinova placed the most non-profit organizations into the bankrupt zone (817). Model Kliestik et al. placed at least non-profit organizations into the grey zone, Delina-Packova model placed the most organizations into the grey zone, where results are not clear. The reuslts of all tested models are also captured in picture no. 1.

Figure following on the next page

Figure 1: Results of prediction models in non-profit organizations



Source: Own processing

5. CONCLUSION

The main aim of the paper is evaluation of financial health of organizations from non-profit sector. Data consists of financial statements of 1,320 Slovak non-profit organizations in 2018. According to the results of these models in the database, will be created analysis of their usefulness. Paper research was focused on the 5 Slovak prediction models and their ability to predict financial health of non-profit organizations, namely: Binkert model, Chrastinova model, Gurcik model, Delina-Packova model I and Kliestik et al. model. Model Kliestik et al. placed the most non-profit organizations into the prosperity zone (1,050 organizations). The designation 'non-profit sector' emphasizes that, unlike commercial and profit-making organizations, the aim is not to generate profits and distribute them among owners. If any profit is achieved, it goes back to the organization's programs and operations. Evulation of their financial health and probability of their bankrupt is considerably complicated. The Delina-Packova model was on the second place with 942 organizations in prosperity zone. Models Gurcik and Binkert achieved similar results. The Gurcik model included 665 organizations in the prosperity zone and the Binkert model 775 organizations. On the other side model Chrastinova placed the most non-profit organizations into the bankrupt zone (817). Model Kliestik et al. placed at least non-profit organizations into the grey zone, Delina-Packova model placed the most organizations into the grey zone, where results are not clear. The reuslts of all tested models are also captured in picture no. 1.

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FROM CULTURAL HERITAGE TO CULTURAL TOURISM IN OSIJEK-CROATIA: CURRENT SITUATION AND DEVELOPMENT PERSPECTIVES

Marta Boric Cvenic
Academy of Arts and Culture in Osijek, Croatia
marta.boric5@gmail.com

Hrvoje Mesic
Academy of Arts and Culture in Osijek, Croatia
hmesic007@gmail.com

Marija Tolusic
Academy of Arts and Culture in Osijek, Croatia
mtolusic@unios.hr

ABSTRACT

The main objective of this paper is to study cultural tourism in Osijek (Croatia) and policies and programmes aimed at national and international promotion, as well as at the development and improvement of the quality of cultural tourism offer. The intention is to analyse and investigate the contribution of cultural heritage to the attractiveness of a tourist destination, as one of the prerequisites for tourists' choice. Based on the study, the paper proposes guidelines that could be useful in image development and improvement of the potential for cultural tourism offering in Osijek. There is still no clear definition of cultural tourism, as one of the selective forms of tourism. Tourism refers to the movement of people outside of their domicile environments in pursuit of cultural experiences, getting to know other peoples' customs and cultures, and expanding their own horizons. Cultural tourism consumers are referred to as cultural tourists. Their motivation stems from desire to participate in cultural activities. Like tourism in general, cultural tourism is not developing at the same pace in all countries. To change this, we need a good development strategy and the best use of all the heritage potentials in a destination. The in-depth study provides insights about the development of cultural tourism, the trends and the changes it brings, and cultural events and revitalisation of heritage spaces without which there would be no cultural tourism in Osijek. Study methodology is based on the use of the data analysis and synthesis method, inductive and deductive method, and abstraction and description method.

Keywords: *Cultural heritage, Cultural tourism, Development perspectives, Heritage tourism, Osijek*

1. INTRODUCTION

Culture is a dynamic model that defines a person's identity, whereas identity and culture are linked by an unbreakable bond that creates a sense of belonging. Culture creates identity, and identity creates culture. Cvjetičanin underlines that culture is an important component of human development and a source identity, innovation and creativity for the individual and the community. Culture is considered the crucial factor in efforts to end poverty and a contributor to economic growth and sustainable development of the local communities and population, encouraging them to take an active role in development initiatives (Cvjetičanin, 2014, 20). Furthermore, culture is also regarded as a product of a collective process, created over a prolonged period of time and linked with deep convictions and emotional needs of the individuals that belong to it. Cultural development is therefore considered an important dimension of the overall development of an individuum, but culture is also a mediator in the

socialisation process through which the individuum is engaged in the sum of collective meanings and values of its group, local community, and the society it lives in (Fulcher and Scott, 2011, 518). By adopting the culture of a society, one becomes a member of the society in question. This is where the need to preserve and develop culture and its heritage stems from. Thanks to new experiences, new contacts, discoveries and comparisons, the society generates added or new values in addition to acquired, inherited or familiar ones. In this process, there are two important aspects of culture. One comprises familiar meanings and orientations people have been raised, educated and trained in, while the other relates to new observations and meanings that have been offered and that are being tried out (Duda, 2002, 15). The importance of tourism has increased dramatically in the past decades, and we have seen tourism gain an increasing economic importance in most countries in Europe and worldwide. For this reason, we may deduce that tourism not only generates relevant profits, but also represents a successful export product for many countries, as well as a generator of employment, driving the opening of new jobs. The notion of culture as a constantly changing and evolving phenomenon must be expanded to tourism as a separate wealthy sector with a tendency of growth in any direction, depending on contemporary trends. Accordingly, service plays an integral role in creating the tourism experience (Jelinčić, 2008, 36). Tourism develops and upgrades the social relations of newly generated economic value in the personal and general sphere, generates added value, refines, selects, inspires, educates and relaxes. Tourism is "a reality and a measure of life, a new way of life, the comfort and the charm of a community, the driving force of the society, a window into the world, and a confirmation of belonging to this world" (Jadrešić, 2010, 18). In time, tourism started narrowing down to smaller, specific areas, changing under the influence of new needs and new trends that have arisen in the society. New selective and sustainable forms of tourism have emerged, adding value to the traditional mass tourism and redesigning it. Different classifications of selective tourism are available based on different amenities it offers. Alfier (1994, 231–232) differentiates between science, sports and recreational, rural or rustic (village) tourism and cultural tourism. Tourism, furthermore, embodies cultural and social contact and incorporates the search for the extraordinary. It has a twofold dimension, material and spiritual. The focus of this paper is on cultural tourism as a selective form of tourism, with a special emphasis on the city of Osijek (Croatia). It analyses cultural and heritage potentials of Osijek and the cultural events that have a direct impact on the development of cultural tourism. In culture, heritage is reflected as an expression of identity that the modern-era globalisation process makes us even more intent on protecting. By showcasing the actual situation, the authors tried to call attention to everything that cultural tourism of a city has to offer, as well everything that needs to be revitalised in order to further improve the quality of the cultural tourism offer.

2. CULTURAL TOURISM AND Cultural tourist typology

Cultural tourism, as one of the forms of selective tourism, appeared in late 1970s. Many definitions interpret this tourism product as movement of people outside of their domicile environment to gain cultural experiences and get to know the customs and culture of other nations in order to expand their personal awareness and horizons. This term often refers to a type of tourism where tourists visit "museums, exhibitions or concerts, or a type of tourism related to material or 'architectural' heritage, from large religious monuments to secular architecture" (Jelinčić, 2008, 42). The expression "cultural tourism" also refers to the form of travel that includes visits to certain cultural institutions or events, whether they are the tourists' primary or secondary motive (Hughes, 1996, 707). One of the most common definitions of cultural tourism explains that cultural tourism means "the movement of people outside their places of residence, motivated by cultural attractions, with the intention of gaining new information and experiences in order to satisfy their cultural needs" (Richards, 1999, 17).

Jelinčić (2008, 43), however, argues that this definition is incomplete because it disregards the fact that cultural motivation can be an additional, and not necessarily the primary determinant of travel. The Cultural Tourism Development Strategy of Croatia underlines that cultural tourism includes trips taken by individuals motivated by a desire to get to know the elements of tangible and intangible culture, defined by the legislation that places immobile, mobile and intangible cultural assets under protection. Tourists visit different localities, museums, galleries, festivals and other culture venues, and are considered cultural tourists in the context of cultural tourism regardless of whether they were wholly or only partly motivated by a desire to participate in cultural activities (Ministry of Tourism, 2003, 5). Đukić-Dojčinović (2005, 16) underlines that cultural tourism is the generator of sustainable development, because it gives cities and towns that do not have a highly developed tourism industry an opportunity to put in place creative development strategies based on the cultural potentials of their location and thus increase their attraction for local residents and tourists alike. Tourist destinations thus develop more cultural amenities that result in economic development, provided that they are correctly interpreted. Šuran (2016, 163) maintains that economy and tourism have an obvious impact on shaping outlooks and strategies regarding 'heritagization' as well as regarding the discussions about intellectual property and the rights of ethnical communities (or minorities) involved in the political strategies of conservation and/or development of territorial cultural heritage. Also, Šuran elaborates that "a comprehensive contribution, economic in nature, was present at the same time in form of opportunities provided by heritage marketing and cultural tourism for the protection of heritage and the development of local economies. This led to a point of convergence between the conservator preoccupations, in the historical and anthropological sense, intangible cultural heritage, and the intentions to use the cultural assets concerned in the valorisation and development of territories and communities" (Šuran 2016, 167). Speaking of cultural tourism, we must distinguish between different types of cultural tourism and different types of tourists, depending on their level of motivation and need for cultural amenities. Hughes (1996, 708) grouped tourists according to the nature of their interest in culture in their choice of destination and made a distinction between specific and non-specific interest in culture. In case of the former, the tourist knows in advance which cultural institutions or events they want to visit, and in case of the latter, the tourist/visitor is interested in culture in general and their interest is not confined to a specific form of culture. Croatia has a diverse and ample natural and cultural tourism offer and consequently a tourism market capable of satisfying the motives of all three types of cultural tourists (Jelinčić, 2008, 48). The first type is the tourist driven by casual or incidental cultural motivation and attracted by culture. During their travels, such tourists visit cultural amenities and attractions, among other things. The second type, the must-see tourist or the tourist inspired by culture, is motivated by the culture of a destination, but their horizons are limited to the big and trendy events in culture. The third type is the true cultural tourist, motivated by culture. This type of tourist gets involved in the cultural life of the location of their visit, attends cultural events and visits various cultural institutions, whose choice depends on their specific interests. According to Jelinčić (2008, 59), the starting view of social and cultural aspects – that culture in itself is not a sufficient reason to initiate a trip – is substantiated by the fact that few tourists are motivated solely by culture in their travels. Culture is usually a subordinate part of the entire vacation offer. However, tourists from more developed European countries have been noted to take a greater interest in cultural tourism amenities, which can be linked to their higher level of education. Through presentation and marketing activities, tourism has put culture on the market, making it available to more people. It definitely impacted the change in culture's approach to the outside world and vice versa. Even though more educated people, as stated above, are more interested in cultural tourism, cultural tourism nevertheless increasingly frequently becomes an extra motive for traveling for a variety of audiences.

Economic aspects of cultural tourism can be summarized in six most important points: "culture management for tourism purposes, effects of culture on tourism, impact of tourism on the culture of destination, perception of the image of a destination by potential tourists, consumption of cultural tourism, and cultural impact of tourism on the tourists" (Jelinčić, 2008, 60). Culture management for tourism purposes has three characteristics. The first has to do with different orientation of management in culture. Managers in culture often lack adequate marketing know-how necessary for success in cultural tourism because managerial positions are filled by art experts rather than marketing experts. The need therefore arose to employ culture managers who combine the two areas of expertise to work on promoting arts at a high level. The second characteristic is associated with culture management, which facilitates service at practical level. Culture should be managed by combining local and global forms of culture rather than by focusing on local or global forms only. The third characteristic, culture management that turns culture localities into animated localities, attests to the managers' ability to create a tourist attraction out of "thin air", an attraction that will look appealing and offer superb amenities. Due to the trend brought about by new consumers who are constantly on the lookout for new and authentic locations, this has caused major changes in some destinations. The influence of tourism on the culture of a destination is reflected in the behaviour of the local population, who strive to make themselves and their city or town seem better than they actually are, thus creating a false idea of the destination, causing it to lose its authenticity, and preventing visitors from truly experiencing the destination. Consumption of cultural tourism includes the problem of a location's "feeling", the reaches of cultural motivation, and the valuation of "high" and popular culture, whereas the dimension of cultural impact of tourism on tourists is concerned with the problem of tourist culture and the question what "being a tourist" even means and what long-term lifestyle effects it has (Jelinčić, 2008, 63–64). Important economic aspects definitely include the employment of the local population and consequently also the economic growth of a tourist destination. These changes are the results of the above effects and an indicator of successful management and presentation of the tourist destination. The number and diversity of cultural amenities and heritage influence the deeper segmentation of cultural tourism. Creativity becomes a new form of capital that the society uses for investments in its personal development. The increased use of creative activities has resulted in the need to develop new tourism offers. Richards (2011, 1239) classifies them into three basic categories: creative events, creative spaces, and creative tourism. The primary objective of creative tourism is to bring tourists closer to the local population and their culture through creativity and participation in various workshops and educational experiences. Raymond (as cited in Jelinčić, 2008, 72) defines creative tourism as a new form of tourism that has developed from cultural tourism and that includes learning particular skills belonging to the culture of the recipient country or community while on vacation. UNESCO underlines that creative tourism is the type of tourism where "travel is focused on an engaged and authentic experience, with participative learning through art, heritage or specific characteristics of a location, enabling a bond to be formed with the people living there and creating its living culture" (UNESCO, 2020).

3. (RE)PRESENTATION OF CULTURAL HERITAGE: HERITAGE TOURISM

By impacting tourism, culture created a new sphere of tourism offer that has then in turn started to directly impact culture. In other words, tourism and culture are interdependent, and some tourist destinations have lately focused their tourism offer on culture tourism only, thus reducing the number of visitors while increasing the tourists' interest in culture, heritage and life of the local population. Marasović defines cultural heritage as "a sort of an inheritance that ancestors leave to their descendants" (Marasović, 2001, 9). Jelinčić believes that heritage becomes "a national asset, and the strength it has as the holder of identity of a social community on the one hand represents the community's past, and on the other has implications for its

present and future" (Jelinčić, 2010, 17). Smith defines heritage as "a cultural process engaged in acts of remembrance that create ways to understand and engage in the present" (Smith, 2006, 44). For Kirshenblatt-Gimblett, heritage is "the new modus of cultural production in the present that addresses the past" (Kirshenblatt-Gimblett, 1998, 149). Interestingly, some authors, such as Porie (2010, 217–228), approach heritage from the viewpoint of experience, underlining that heritage is primarily defined by so-called "heritage experience" of the people who have participated in it rather than by its historical characteristics or its antiquity. The most important example of this is Ground Zero, the site of the attack on the World Trade Center on 11 September 2001, which is not considered heritage and is not included in any heritage lists, but is still perceived by many people as a part of their national heritage and identity. In the past ten years, scientific literature has focused on defining heritage tourism as a subtype of cultural tourism. On the other hand, some scientists regard heritage tourism as a special type of selective tourism, since it allows the quantification of demand in terms of the tourist turnover generated. In a Eurobarometer survey carried out in 2008 (Survey on the attitudes of Europeans towards tourists) on a sample of 27,000 respondents in the EU, 24% respondents confirmed that heritage impacted their choice of destination. The demand for cultural tourism products based on cultural (heritage) resources in a destination grows along with the general growth of tourism. An increasing number of tourist destinations therefore base their development strategies on cultural heritage. Economic utilisation of cultural heritage should lead to its sustainability, reflected in tourism. Heritage brings indirect economic benefit to the community by being the key element in building the tourism image of a destination. Heritage is not only our inheritance from the past: it is one version of this past, potentially competing with other versions, which is sponsored as adequate and acceptable. Dominant criteria that thus shape the heritage construct of the past are typically associated with the perceived needs of the tourism business (Allcock, 1995, 100–101). Visual representation of cultural heritage and its materiality are of special importance for the process of representation of heritage in tourism ("tourist gaze"). Watson and Waterton therefore emphasise that the processes "that create meaning, that frame, reveal and construct the past we see around ourselves, are essentially visual. Our ties to the past are largely tangible or dependent on tangibility that makes them the objects of heritage, whereas visual culture gives these objects the means of representation and attainment of meaning" (Watson and Waterton, 2010, 2). Within the authorized heritage discourse, the tourist has in time become synonymous with a typical heritage visitor, while the heritage management discourse increasingly approaches economic commodity discourse (Smith, 2006, 33). Cultural heritage is used as a cultural resource to create tourist attractions and represents so-called "symbolic capital", which is converted into a specific financial source of income in the cultural tourism process (Bourdieu, 1997, 46–58). Tourism is the process of communication of culture, and cultural heritage is composed of complex symbols functioning at the same time as tourist attractions and as cultural symbols participating in the construction of the national identity. The ICOMOS is the best-known association (council) that works to protect and conserve monuments and monument complexes, and to promote cultural heritage on national and international level. Even though specialising in specific tasks related to the conservation of heritage, its activity can also be viewed from the angle of "promotion of cultural diversity and intercultural dialogue. The International Committee on Cultural Routes and the International Scientific Committee on Cultural Tourism define the organisation's course in the promotion of cultural tourism. These two important ICOMOS bodies work on the conservation and promotion of heritage through tourism activities" (Jelinčić, Gulišija, Bekić, 2010, 44). The ICOMOS International Cultural Tourism Charter from 1999 expounds on the principles and guidelines for managing tourism at places of cultural and heritage significance. Its basic principles are as follows: 1. Raising public awareness of heritage – Conservation should provide responsible and well-managed opportunities for members of the host community and visitors to experience and understand

that community's heritage and culture at first hand; 2. Dynamic relationship management – The relationship between heritage and tourism is dynamic and may include conflicting values. They have to be managed in a sustainable way for present and future generations; 3. Ensuring a worthwhile experience for visitors – Conservation and tourism planning for heritage places should ensure a worthwhile, satisfactory and enjoyable experience for visitors; 4. Involving the local community – Local communities should be involved in planning for conservation and tourism; 5. Providing benefit to the local community – Tourism and conservation activities should benefit the host community; 6. Responsible promotion programmes – Tourism promotion programmes should protect and enhance natural and cultural heritage characteristics (ICOMOS, 1999, 23–26). Croatia is a country of extensive tourism potential, as attested by the increasing number of visitors. However, looking at cultural and historical heritage, we note that it has been insufficiently explored, presented and committed to tourism. The problem of determining the value of cultural tourism can be solved by identifying factors that influence the ability to include culture and its amenities in tourism. Only then can efficient management contribute to the economic development of the area and the local population. Well-designed management and attractive marketing activities would make sure that historical and cultural heritage is no longer neglected as a component of the tourism offer, which would endow Croatia and Osijek with a new cultural tourism dimension. The basic strategy underlining the potentials for the use of cultural heritage sources includes promotional, tourism, and scientific exploitation of cultural heritage. This strategy is designed to help a destination attract as many visitors as possible by promoting its own cultural heritage values. This increases the interest of potential tourists in the heritage of a location or a people, and well-designed promotion impacts the final travel decision. The utilization of cultural heritage starts by "sparking an interest in different types of promotion and stimulating the forms of promotion that have proven to be the most efficient in the efforts to create satisfaction with a visit to a destination" (Gredičak, 2009, 199). Promotional exploitation includes all forms of promotion, such as publications, visual media, exhibitions, and virtual IT networks. It is important to underline that promotional materials designed for these purposes must be simultaneously "launched in the potential destination country and the country where the potential source market is established" (Gredičak, 2009, 199). The objective of a cultural heritage manager is therefore to ensure that tourism provides the funds needed to conserve cultural heritage and encourage its development in line with sustainable development principles.

4. THE CULTURAL TOURISM SITUATION IN OSIJEK

In recent years, cultural tourism in Osijek has been developing and its quality has been improving, as attested by the increasing number of tourists and the increasing number of cultural tourism amenities and events. The Osijek-Baranja County and the City of Osijek as its seat abound in natural attractions, cultural heritage, and a number of cultural events, and all these resources form an ideal combination for successful development of cultural tourism. This continental county has been attracting an increasing number of visitors every year with its distinctive offer of cultural events and institutions. The tourists' interest in programmes offered by Osijek and the Osijek-Baranja County has been on the rise as a result of improving marketing activities and tourism organisation undertaken by the Tourism Board of the City of Osijek and the Tourism Board of the Osijek-Baranja County. The number of tourist arrivals 2016-2018 (Table 1) is a testament to the tourists' increasing interest.

Table following on the next page

Table 1: Tourist arrivals in the Osijek-Baranja County and the City of Osijek 2016-2018

Total arrivals by year	**2016**	**2017**	**2018**
Osijek-Baranja County	89060	92239	99025
City of Osijek	46522	52791	57300

Source: Compiled by authors based on the reports of the Croatian Bureau of Statistics about tourism for 2016, 2017 and 2018: Statistical Report 1594 – Tourism in 2016, Statistical Report 1616 – Tourism in 2017, and Statistical Report 1639 – Tourism in 2018, ISSN 1331-341X

The above table reveals an upward trend in the number of tourists 2016-2018, with an emphasis on the fact that tourists who have visited the City of Osijek account for more than a half of the total number of tourists in the Osijek-Baranja County. The Osijek-Baranja County has relatively well-developed cultural tourism in relation to the other continental counties, but its development is still way below its potentials, in terms of Osijek, where Tvrđa and the Secession are not tourism products. For the purposes of this paper, employees of the City of Osijek Tourist Board and the Tourist Board of Osijek-Baranja County, were interviewed. Based on their answers, some conclusions were reached on the state of cultural tourism in the city of Osijek such as: according to the list on the City of Osijek website, the City of Osijek records 15 events that take place throughout the whole year. Apart from them, the Antiquities Fair and the Advent in Osijek are also a great cultural value. Increasing cultural events, improving their quality and increasing the number of visitors to cultural events certainly influence the development of cultural tourism in the city of Osijek. In showing interest in cultural tourism and the possibility of getting money from EU funds, the visual identity of the City and its cultural heritage are slowly being restored. Great example is revitalized building named Educational and informative tourist center for young Old bakery with Vatroslav Lisinski Square in the heart of old part in Osijek Fortress. Still, there are bright examples of successful tourism activities, such as the CroCulTour Association, which has launched a pioneer effort to develop a cultural tourism product. CroCulTour is a non-governmental and non-profit association of freely associate citizens who have realized their personalities and common interests and public needs in the field of cultural tourism. The main activities of the CroCulTour is education, promotion and development of culture and tourism because this is important for the promotion and promotion of cultural tourism as an integral part of the continuous and sustainable development of the Republic of Croatia. CroCulTour's services include networking, production, professional events, education and theater and tourist performances. The most important for the development of cultural tourism in Osijek are cultural and tourist performances, which in an interesting way represent significant events from history. Currently, there are two performance Forgotten Fortress - Wine Square and Magnificent Bridge, which present the history of the city in an interesting and interactive way customized to tourists of all ages. If the Danubian Limes (ancient Roman border), industrial heritage, castles that are being gradually reconstructed, and the traditional crafts offer were included in the cultural tourism product, it would become much more complex and substantial. Cultural events are equally important in the cultural tourism offer. Some of them are very attractive, but most are traditional and need to be modernised, and their promotion needs to be improved. The fact that Osijek is increasingly using its very valuable tangible and intangible cultural heritage is a testament to its diverse cultural tourism offer and substantial progress. Tangible heritage is being intensively regenerated and increasingly used for tourism purposes, and the development of cultural and other events is encouraged by cultural and political stakeholders. We may conclude that activities aimed at the development of cultural tourism and the associated products and activities have intensified in Osijek in recent years. It all impacts the successful positioning of the city as a cultural centre in the increasingly competitive tourism market. We may conclude that Osijek and the County have considerable potentials that are slowly starting to be used as tourism resources and contribute

to their successful marketing. However, this process should be much faster. The problem, of course, is funding and lack of engagement on the promotion and advancement of cultural tourism amenities. Regardless, Osijek is experiencing a development of cultural tourism thanks to a number of cultural events and festivals that attract substantial numbers of tourists, as well as to large projects restoring the cultural heritage of the city. According to the Cultural Tourism Development Strategy of the Croatian Ministry of Tourism, in addition to rural and urban historical settings, Croatia has a high concentration of attractive cultural institutions, an abundance of intangible heritage and assets, and legends and myths that can be presented as interesting tourism stories (Ministry of Tourism of the Republic of Croatia, 2003, 10). The Strategy lists important facts that could contribute to the development of cultural tourism in Osijek and the Osijek-Baranja County, such as well-elaborated tourism and cultural tourism strategies, directly applicable to all destinations, and the development of attractive new products and activities that is crucial for the attraction of a broad spectrum of tourists and visitors, with an emphasis on good promotion and marketing. Good management of cultural assets and maintenance of their infrastructure is also important, along with coordination and inclusion of various stakeholders and interest groups in the development of cultural tourism. These measures apply to Osijek too, since an effort is made to modernise and improve the cultural offer in cooperation with different stakeholders from the private and public sectors.

4.1. Trends, events and changes that cultural tourism brings to Osijek

The increased number of tourists results in certain changes for the City and the County, such as increased investments in cultural tourism, the space, the restoration of cultural heritage, changes to the city's vista, and a gradual change of the citizens' awareness of the importance of cultural tourism. According to the findings of the Tourism Board of the City of Osijek, it has been noted that tourists, in particular cultural tourists, have lately been keen on learning new things in an interaction with the local population, and have been open to a different cultural tourism experience. The number of tourists attracted by tradition and culture is on the rise, along with the number of individual tourists who want to discover the allure of cities and locations on their own. In 2016, Osijek started the reconstruction of Europska avenija (European Avenue), one of the most beautiful streets in Europe, lined by a number of Secession-style buildings. The Sakuntala Park has gotten a facelift too, largely financed by EU funds within the project S.O.S. – Tourist Route Secession Osijek – Subotica, which works to reconstruct Secession-style cultural heritage and promote the cultural tourism offer of Osijek and Subotica. The objective of this cooperation is to develop package deals through which programmes would be offered to tourists, via travel agencies, combining elements of urban culture, gastronomy and nature, representatives of the Osijek-Baranja County Development Agency have stated. The City of Osijek has also started implementing EU projects of exceptional importance for the tourism offer of the City and the County. Osijek's Tvrđa is finally undergoing reconstruction too after a long number of years. In the project Youth Educational and Information Centre Old Bakehouse and Vatroslav Lisinski Square, Tvrđa, the Austro-Hungarian military bakehouse, part of an individual protected cultural complex, has been restored. The revitalised square will serve as a public stage and venue for different events and meetings. The reconstruction of the neglected space in the vicinity of Tvrđa, which will be converted into a regional informational and tourist reception centre, is another important project for the development of Osijek. Its function will be to promote "all tourist attractions of Eastern Croatia, and it will also include a stop for buses, taxis and cars. Cycling tourists will also get an indoor space at this location, where they will be able to refresh themselves and store or repair their bikes. The space will include a multimedia hall, souvenir shop, a shop offering local, regional and national products, an exchange office, and a catering establishment with a large restroom" (Osijek.hr, 16 September 2019).

A large number of people will be (and in some cases has already been) employed on these projects under construction, which will reduce unemployment and emigration, and all this will contribute to a larger economic market and the establishment of a better standard of living for the local population. The opening of the Osijek Cultural Centre (KCO), which aims to support different activities in culture and satisfy the citizens' cultural needs, will also result in the opening of new jobs. Cultural events are one of the key elements of cultural tourism. Osijek and the County receive the most visitors in spring and autumn, but the number of visitors also increases at the time of large and attractive events. Tourists who come in spring and autumn are mostly interested in weekend trips and city breaks. The most attractive events also take place during these seasons, and the weather is ideal for outdoor activities and active vacations. Events that attract tourists to Osijek include the Advent, shooting sports competitions, the Osijek Summer of Culture, Earth without Borders, the First Croatian Beer Days, the Pannonian Challenge, and others. Osijek's largest cultural event, the Osijek Summer of Culture, attracts about 10,000 visitors every year. Visitors of this event can enjoy film evenings, exhibitions, creative workshops, plays, concerts and other interesting activities. The Osijek Summer of Culture aims to promote Osijek's cultural institutions and associations, artists, and a number of guest performers, whose artistic expression adds value and incentive to the cultural life of Osijek. Through international cooperation with cities from the broader region and with Osijek's Sister Cities, the organisers of the event work on boosting Osijek's international visibility and promoting the development of its economy and tourism. Other important cultural events in Osijek include: City Concert Cycle – Osijek Music Wednesdays, Theatre Marathon, Croatian Tambouritza Music Festival, EPTA – International Competition for Young Pianists, the Darko Lukić Memorial, the Franjo Krežma Memorial, Krleža's Days, Sluk – Conference of Puppeteers and Puppetry Theatres of Croatia, the Dionysius International Theatre Academies Festival, Matica hrvatska Days, the Slavonian Biennale, the International Art Graphic Workshop, Slavonijo, u jesen si zlatna (Golden Slavonija in Autumn), Carnival Riding, and others. 2019 can be considered an important year for the development of tourism in the City of Osijek and the Osijek-Baranja County. Osijek's hosting of the Croatian Tourism Days, the largest conference of tourism professionals in Croatia, which was attended by 1500-2000 participants, certainly takes some of the credit for this fact. The Tourism Days were accompanied by the supporting three-day cultural and entertainment programme HeadOnEast, during which Tvrđa was fully transformed into a desirable tourist destination, hosting a number of cultural and entertainment events, such as the Gastro Duel, Festival of Light, Streetfood Zone, Beer Garden, and many others. Notable progress has been made in the cultural tourism sphere in Osijek, but its potentials remain largely unfulfilled due to the slow process of recognition and exploitation of cultural and heritage tourism potentials, the lack of funding, and inadequate promotion. Systematic tourist valorisation of cultural heritage is needed to further the development of cultural tourism in Osijek and the Osijek-Baranja County, and we must come up with ways for culture production and project identification on national and regional level. It is also important to design a common culture and tourism development model, in which culture and tourism will have reciprocal effects. As far as the cultural tourism offer is concerned, it requires innovation and creativity to help it make a significant breakthrough in the market. Innovation and creativity must be based on authentic culture – heritage (Šetka, 2018, 22).

5. CONCLUSION: TOWARDS GUIDELINES FOR THE DEVELOPMENT OF CULTURAL TOURISM

Modern tourists choose their travel destinations based on the offer of a particular destination and the satisfaction it provides. They strive to include new experiences in their itineraries that offer value for money. Destinations that offer tourists the possibility to engage in activities

nurturing tradition and heritage, sometimes at the expense of their own identity and authenticity, are in highest demand. Global tourism movements have become motivated by culture and the abundance of cultural heritage, which is one of the factors in the development of cultural tourism products, but also in maintaining vitality. Culture impacts tourism, and tourism increasingly impacts culture. The constancy of attractive cultural pull factors and a well-developed awareness of cultural tourism are the prerequisites for development of this type of tourism, for the satisfaction of tourist demand, anticipation of possible trends, and creation of competitive advantages. The theoretical analysis of cultural tourism and its specific subtypes presented its distinctive features and the potentials it provides for the development and branding of a destination. This is of special importance for continental regions such as the City of Osijek and the Osijek-Baranja County, which do not have seasonal tourism in the summer or winter and must find specific market niches in tourism. Cultural tourism is an excellent possibility. The trends and the potential tourists' needs for cultural events and for learning about the heritage of an area should be used in the best possible way and channelled into marketing efforts, especially promotion aimed at attracting new tourists. To improve the development of cultural tourism in the City and the County, the promotion of the region, as well as individual microregions/events, needs to be expanded and modernised. Even though the number and the quality of cultural events in the City have improved, there is plenty of room for progress still. Osijek, like other continental destinations in Croatia, has not been recognised enough in the tourism sense. They have plenty of potential in the form of events, authentic cultural heritage, and natural attractions and advantages. The Croatian Tourism Board should show a greater interest in Slavonija and Baranja as a tourist destination than it has shown so far and improve the quality and increase the frequency of its work on the promotion of cultural and heritage tourism values of continental Croatia. The tourism boards in the Osijek-Baranja County and the other counties in continental Croatia cannot accomplish much on their own without adequate support from the authorities. They can work on expanding horizons and on marketing a better and more authentic offer, setting them apart from other tourist destinations. Projects related to cultural tourism and tourism in general should be developed in cooperation with students, in form of practical trainings that both sides will benefit from. The creative tourism offer should also be improved. As stated above, investments in this form of cultural tourism are minimal, and yet capable of generating substantial profits if the offer is interesting and authentic. Promotion is the key component in the development of cultural tourism. There can be no development without good promotion. Efforts need to be invested in new marketing ideas. Guerrilla marketing, often a cheap or even free method of promotion, which entails boundless creativity, is one of the possibilities. Original marketing ideas can also be developed through the cooperation of tourism boards and institutions of higher education. Such an approach will provide students with a welcome opportunity to gain some experience, while the tourism boards will get a chance to improve the promotion of the City of Osijek and the Osijek-Baranja County. Limitations of this research study were that it was impossible to find out statistical data about cultural tourism and cultural tourists not only in Osijek, Osijek – Baranja County, but also in a Republic of Croatia, too. Tourist board in Osijek provided us statistical data in general about tourist arrivals, departures and their nationality so it was really hard to make conclusion about cultural tourism and cultural tourists. There are two future directions of the research. One direction is to categorize cultural tourist and cultural sites and events in statistical surveys of tourism, and second direction is to repeat such research in another city in Republic of Croatia and make a comparative analysis for a new research study.

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FINTECH IN ECONOMIC GROWTH: CROSS-COUNTRY ANALYSIS

Shahin Sadigov
Azerbaijan State University of Economics (UNEC)
Baku, Istiqlaliyyat str., 6, AZ1001, Azerbaijan
agshin.s.sh@gmail.com

Tetyana Vasilyeva
Sumy State University
Sumy, Rimsky-Korsakov str., 2, 40007, Ukraine
tavasilyeva@fem.sumdu.edu.ua

Pavlo Rubanov
Sumy State University
Sumy, Rimsky-Korsakov str., 2, 40007, Ukraine
p.rubanov@finance.sumdu.edu.ua

ABSTRACT

The development of the financial sector has always been regarded as one of the components of countries' economic development and GDP growth. However, the current state of the financial system is in a transformational phase in most countries. It is characterized by the processes of digitization and technologization of financial services. The purpose of the article is to investigate the role of the FinTech sector in ensuring the economic development in different countries' groups by means of regression and correlation analysis. The article substantiates that the most significant transformational impact of the FinTech segment on the financial services market concerns banking services, namely payments and transfers. Therefore, the indicators selected as the leading indexes of the development of the FinTech sector are the indicators of the digitalization of banking services. They are the share of the population using a mobile phone or the Internet to access a financial institution account, the share of the people using the Internet to pay bills, or to buy something online, the percentage of the individuals who made or received digital payments. Economic growth rates are estimated by the GDP growth rate and GDP per capita. The results of the correlation analysis made it possible to confirm the existence of a direct correlation between GDP per capita and selected banking sector digitization indicators. FinTech development contributes to economic growth by increasing GDP generated in the financial sector, and indirectly by increasing e-commerce turnover and real sector financing, in particular by creating more favorable lending conditions for small and medium-sized businesses.

Keywords: *Digital banking, Economic growth, FinTech, GDP, Digitization indicators*

1. INTRODUCTION

At the current stage, the economic systems of the developed countries can be called digital economies, and the corresponding technological shift – Industry 4.0 (Bilan, Rubanov et al., 2019; Milon et al., 2018). Developing countries are characterized by tendencies to strengthen the role of ICT in socio-economic development and the gradual growth of the level of digitalization in all spheres of society (Beyi, 2018; Grenčíková et al., 2019; Kostel et al., 2017; Kyrychenko, 2018). In scientific studies, modern information technology is determined as an essential or critical factor in economic growth (Khan, 2018; Marcel, 2019; Nguedie, 2018). The ICT sector provides GDP growth and helps to increase the efficiency of all other sectors of the economy through increased automation, optimization of production and marketing processes, acceleration of document flow, increased transparency, and more (Berzin et al., 2018;

Karaoulanis, 2018; Kendiukhov, Tvaronaviciene, 2017; Kozarezenko et al., 2018; Logan, Esmanov, 2017; Vasilieva et al., 2017). Innovative direction of economic development contributes to faster overcoming of economic instability and smoothing of cyclical fluctuations in the economy (Bilan, Brychko et al., 2019; Balas, Kaya, 2019). In the financial sector, the symbiosis of modern information technology with traditional financial services has led to radical changes in the industry, which have affected the way of providing financial services, the emergence of new types of financial services and new market players who provide these services (Lyeonov, Bilan et al., 2019). All these changes can be characterized by the general concept of FinTech innovation (Drugov et al., 2019). Due to the emergence of new market players, FinTech innovations have changed the nature of competition in the financial services market. Many studies are concerned with promoting FinTech innovation to improve the quality and availability of financial services (Dave, 2017; Didenko et al., 2018; Leonov et al., 2018; Rizwan, Semenog, 2017; Tiutiunyk, 2018). On the other hand, the favorable basis for the development of FinTech services (mobile applications for digital payments, mobile wallets, platforms for crowdfunding and peer-to-peer funding, etc.), as well as for new players in the financial services market (technology companies, developers, FinTech startups and others) are not formed in every country of the world (Alikariev, Poliakh, 2018; Rubanov et al., 2019). The functioning of the FinTech innovation market raises many issues regarding the state regulation of this market and minimization of possible risks created by new technologies and new institutional participants (Bilan, Vasylieva et al., 2019; Levchenko, Boyko et al., 2019; Lyeonov, Kuzmenko et al., 2019; Poliakh, Nuriddin, 2017; Vasylieva, Harust et al., 2018). Therefore, governments are often reluctant to promote the development of certain FinTech innovations, and in some countries even introduce bans (for example, on the circulation of cryptocurrencies). However, due to the online way of providing services and the absence of the need for a physical presence of an intermediary, national borders are not an obstacle to the spread of FinTech services (Njegovanović, 2018; Lebid et al., 2018; Vasylieva, Leonov et al., 2017). As for the third component – new ways of providing traditional financial services, they are manifested primarily in the increasing level of digitalization in the financial sector, the emergence of financial intermediaries without a physical branch network (neobanks), increasing the share of online services of financial intermediaries (Oweis, Alghaswyneh, 2019; Zekeri, Kadiri, 2018). The development of online payment technologies contributes significantly to the digitalization of other areas of the economy, including the development of e-commerce (Kwilinski, 2018). Both the financial sector development and innovative activities have always been regarded as the components of countries' economic development and GDP growth (Ibragimov et al., 2019; Kouassi, 2018; Levchenko, Kobzieva et al., 2018; Lyulyov, Pimonenko, 2017). Thus, it is worth exploring how current trends in digitalization and technologization of the financial sector affect the dynamics of economic growth in different countries. Therefore, the purpose of the article is to investigate the role of the FinTech sector in ensuring the economic development in different countries' groups using regression and correlation analysis. The choice of indicators and countries for analysis is significantly limited to the available data on the object of study. The most detailed list of statistical indicators on the digital economy and society is accumulated in the Eurostat database for the European Union countries since 2009. The sources of statistical data on particular indicators of digital financial services by countries of the world are the databases of the World Bank and the IMF. Taking into account that the most significant transformational impact of the FinTech segment on the financial services market concerns banking services, namely payments and transfers, the indicators selected as the leading indexes of the development of the FinTech sector are the indicators of the digitalization of banking services. They are the share of the population using a mobile phone or the Internet to access a financial institution account, the share of the people using the Internet for internet banking, or for ordering goods or services, the percentage of the

individuals who made or received digital payments. Besides, we will study the impact of digitalization of the economy through the indicator of the share of enterprises' turnover on e-commerce. GDP growth rate and GDP per capita indicators are used as parameters of economic growth rates. The sample of countries for the study and the period of the research in the correlation and regression analysis for different pairs of indicators differ slightly based on available statistics.

2. CORRELATION ANALYSIS RESULTS

The first stage of the study of the impact of the FinTech innovation on economic development is conducted using the method of correlation analysis. Correlation analysis is performed between pairs of the following parameters of digital banking, e-commerce, and economic growth:

- Share of population who used a mobile phone or the Internet to access a financial institution account in the past year – GDP growth and GDP per capita;
- Share of population who made or received digital payments in the past year – GDP growth and GDP per capita;
- Share of enterprises' turnover on e-commerce – GDP growth and GDP per capita;
- Individuals using the Internet for internet banking – GDP growth and GDP per capita;
- Individuals using the Internet for ordering goods or services – GDP growth and GDP per capita.

To ensure the comparability of the results, the values of all indicators are taken for 2017. Since the analysis uses the values of indicators for one year for different countries, it is advisable to use the method of Spearman rank correlation. Spearman rank correlation is a nonparametric measure of the statistical relationship between two variables, ranked in ascending or descending order. The advantage of the chosen method is that the Spearman correlation coefficient determines the strength and direction of monotonic relations between two rank variables, and not the strength and direction of linear relationships, which determines the Pearson correlation. The results of the correlation analysis for the selected pairs of indicators are presented in table 1.

Table 1: Spearman rank order correlations

	Used a mobile phone or the Internet to access a financial institution account in the past year (% age 15+)	**Made or received digital payments in the past year (% age 15+)**	**Share of enterprises' turnover on e-commerce (%)**	**Individuals using the Internet for internet banking (% of individuals aged 16 to 74)**	**Individuals using the Internet for ordering goods or services (% of individuals aged 16 to 74)**
Sample of countries	138 countries worldwide	141 countries worldwide	31 European countries	30 European countries	35 European countries
GDP growth (annual %)	**-0.2493**	**-0.2315**	-0.0867	-0.3335	-0.3289
GDP per capita (current US$)	**0.7908**	**0.8365**	**0.5672**	-0.1429	**0.8608**

Note: Marked in bold correlations are significant at p <0.05

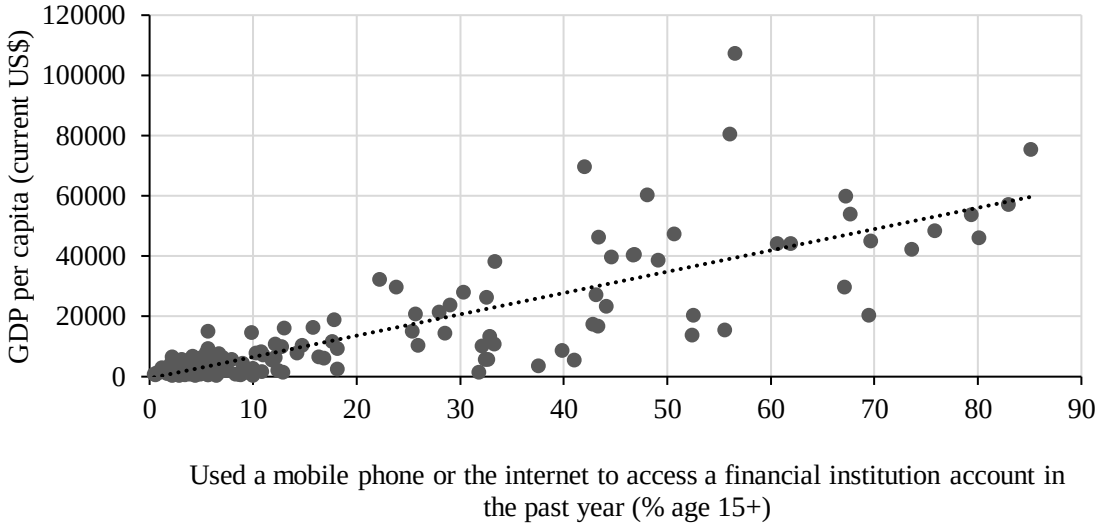
Source: Authors' calculations based on the World Bank and Eurostat data

The calculated Spearman rank correlation coefficients showed a close direct relationship between most indicators of digitalization of the economy, digital banking, and the indicator of GDP per capita. In particular, correlation analysis of the relationship between the share of population who used a mobile phone or the Internet to access a financial institution account, share of population who made or received digital payments, individuals using the Internet for

ordering goods or services and GDP per capita testified to the presence of a strong direct connection between these pairs of parameters. The corresponding values of the correlation coefficients are in the range of 0.79-0.86. The share of enterprises' turnover on e-commerce also shows a direct correlation with the GDP per capita indicator, but the strength of this relationship is moderate. E-commerce allows you to increase sales and optimize sales costs, which contributes to the growth of GDP per capita. The corresponding value of the correlation coefficient is 0.5672, i.e., the change in the values of the studied indicators is described by the same functional dependence only in 56% of cases. At the same time, most of the correlation coefficients of GDP growth and digitalization of the economy and digital banking are not statistically significant. Only correlation coefficients of GDP growth and the share of population who used a mobile phone or the Internet to access a financial institution account, and the share of population who made or received digital payments, are statistically significant. However, the values of these coefficients are negative and close to zero. That means that there is a weak inverse relationship between GDP growth and digitization indicators. The obtained results of the correlation analysis of the GDP growth are due, firstly, to the fact that the sample was formed in 1 year, while the manifestation of the correlation with the GDP growth should be studied in dynamics. Secondly, the general pattern (with some exceptions) is that developing countries show higher GDP growth rates, while the GDP per capita in these countries is lower. Therefore, the correlation between GDP growth and GDP per capita is negative. Accordingly, in the developed countries with a higher level of digitalization, the level of GDP per capita is higher. Similarly, in developing countries, the level of technologization of the financial sector and the level of GDP per capita are lower. These conclusions are confirmed by high values of Spearman rank correlation coefficients for the corresponding pairs of indicators. In general, Spearman correlation coefficients showed a lower level of closeness for the sample of European countries. The link between digital banking and economic growth in European countries is not clear, i.e., digitalization in the financial sector does not have a direct effect on GDP growth. That can be partly explained by the fact that most European countries have a high level of banking system development; the banking services market is significantly integrated within this group of countries; the activities of the largest banks are transnational, extend to all European countries, and not limited to one country. Besides, European countries have already reached a high or above-average level of digitalization of the banking sector, so this factor is not crucial to influencing economic growth. Correlation analysis is complemented by the construction of scatter charts for digital banking indicators, which showed the highest level of correlation with GDP per capita. Figure 1 shows a scatter plot of GDP per capita and the share of the population who used a mobile phone or the Internet to access a financial institution account for 138 countries in 2017. The appearance of the diagram indicates the presence of a correlation between the variables and the possibility of establishing a linear functional relationship between them. At the same time, there is an accumulation of values that correspond to low levels of both indicators – GDP per capita and the share of the population who used a mobile phone or the Internet to access a financial institution account. The scatter of indicators for larger values of the analyzed pair of indicators is broader, but the linear dependence remains.

Figure following on the next page

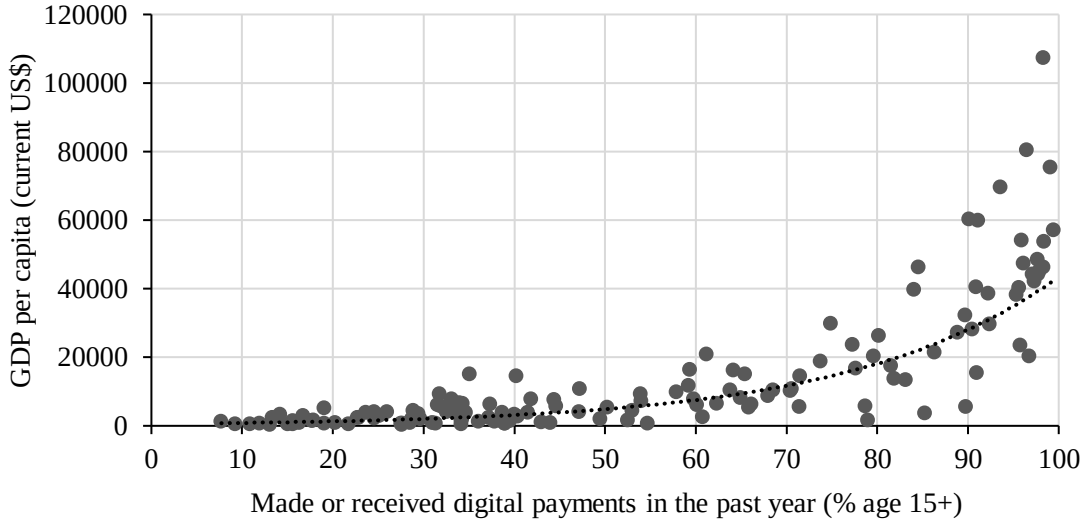
Figure 1: Scatter chart between GDP per capita and the share of the population who used a mobile phone or the Internet to access a financial institution account



Source: Authors' calculations based on the World Bank data

The analysis of the correlation between the indicators of GDP per capita and the share of the population who made or received digital payments showed the presence of an even closer relationship compared to the previous pair of indicators (Figure 2).

Figure 2: Scatter chart between the GDP per capita and the share of the population who made or received digital payments



Source: Authors' calculations based on the World Bank data

The scatter chart has the form of an exponential dependence, i.e., with the increase in the share of the population who made or received digital payments, the growth of GDP per capita accelerates.

3. REGRESSION ANALYSIS RESULTS

In the next stage of the study, we determine the presence of functional regression relationships between the value of mobile and internet banking and the share of enterprises' turnover on e-commerce, on the one hand, and GDP growth and GDP per capita, on the other hand.

The sample of countries taken for analysis and the study period are determined by the available statistics on the analyzed indicators:

- 18 countries for the period 2010-2018 for analysis of the impact of the value of mobile and internet banking on GDP growth and GDP per capita;
- 19 countries for the period 2009-2018 for analysis of the impact of the share of enterprises' turnover on e-commerce on GDP growth and GDP per capita.

The results of modeling regression dependences for selected countries and pairs of indicators are presented in tables 2 and 3. According to Table 2, a statistically significant regression dependence of economic growth indicators (GDP growth and GDP per capita) on the value of mobile and internet banking was found only in a small number of countries. For most countries, the functional relationship between parameters was not confirmed. Among the statistically significant results, the identified direction and strength of the regression relationship differ significantly between the studied countries. Therefore, the nature of the relationship of the studied parameters is influenced by other factors specific to each country. The development of digital banking cannot be considered an unambiguous factor in GDP growth rate or GDP per capita growth.

Table 2: Results of regression analysis of the impact of the value of mobile and internet banking on GDP growth and GDP per capita in some countries

Country	Y_1 – GDP growth; X – value of mobile and internet banking		Y_2 – GDP per capita; X – value of mobile and internet banking	
	Regression coefficient	R^2	Regression coefficient	R^2
Albania	**0.0485**	**0.4753**	**16.58**	**0.4804**
Brazil	-0.0487	0.4237	-10.34	0.0854
Cabo Verde	**0.1983**	**0.4505**	7.01	0.0330
Colombia	**-0.0546**	**0.6372**	-17.12	0.2354
Costa Rica	-0.0031	0.2345	**8.51**	**0.8907**
Dominican Rep.	-0.0399	0.0375	**-76.26**	**0.7442**
Estonia	-0.0063	0.2623	-2.83	0.0355
Latvia	-0.0008	0.0281	-1.33	0.2226
Mexico	0.0032	0.0554	3.34	0.0742
North Macedonia	-0.0107	0.0778	**8.60**	**0.5254**
Norway	0.0058	0.2271	-145.50	0.4190
Russian Federation	**-0.0170**	**0.6127**	-12.47	0.2103
Serbia	0.0709	0.3249	-2.26	0.0040
Slovenia	-0.0040	0.0769	-3.07	0.1017
Sweden	**-0.0548**	**0.5039**	**108.74**	**0.4934**
Switzerland	0.0271	0.0518	**-376.30**	**0.6543**
Thailand	-0.0073	0.0187	**13.29**	**0.8862**
Zimbabwe	-0.0383	0.1039	**5.02**	**0.8313**

Note: Coefficients marked in bold are significant at $p < 0.05$
Source: Authors' calculations based on the World Bank and IMF data

Table 3 shows the results of the regression analysis of the impact of the share of enterprises' turnover on e-commerce on GDP growth and GDP per capita. According to the results of the investigation, the moderate direct impact of the share of e-commerce in the turnover of enterprises on GDP growth was revealed. In particular, this relationship is statistically confirmed for Austria, Bulgaria, the Czech Republic, Hungary, Ireland, Romania, Spain and the United Kingdom. According to the regression coefficient, the most significant influence of growth in the share of enterprises' turnover on e-commerce on GDP growth is characteristic of Bulgaria and Romania.

An increase in the share of e-commerce in the turnover of enterprises by 1% in these countries leads to a rise in GDP growth by 1.3%. It is worth noting that most of the countries in which the relationship between the studied parameters is statistically confirmed are countries with a relatively lower level of economic development in this sample. For example, of the eight such countries, Romania, Hungary, the Czech Republic, and Bulgaria belong to the countries of the Eastern European region. For other countries, the strength of the relationship between the parameters is low and not statistically confirmed. Still, in most cases, the growth of e-commerce is a decisive factor in GDP growth. As for the other indicator – GDP per capita, a clear pattern of its relationship with the indicator of the share of enterprises' turnover on e-commerce was not found. In particular, such countries as Hungary, Ireland, Romania and the United Kingdom have a direct impact of the share of e-commerce on GDP per capita. And in Cyprus, Italy, and Norway, there is a reverse relationship between GDP per capita and the share of enterprises' turnover on e-commerce. In both cases the strength of the relationship is moderate. Thus, the results of the regression modeling for European countries cannot establish a single pattern of the relationship between GDP per capita and the share of enterprises' turnover on e-commerce.

Table 3: Results of regression analysis of the impact of the share of enterprises' turnover on e-commerce on GDP growth and GDP per capita in European countries

Country	Y_1 – GDP growth; X – share of enterprises' turnover on e-commerce		Y_2 – GDP per capita; X – share of enterprises' turnover on e-commerce	
	Regression coefficient	R^2	Regression coefficient	R^2
Austria	**0.9380**	**0.4842**	-871.27	0.2137
Bulgaria	**1.3095**	**0.6625**	271.72	0.2849
Cyprus	-0.1509	0.0074	**-968.44**	**0.5611**
Czech Republic	**0.4271**	**0.6157**	-13.18	0.0022
Estonia	-0.0414	0.0017	800.21	0.4397
France	0.2172	0.1823	-316.13	0.1422
Germany	0.3225	0.0814	-396.94	0.1322
Hungary	**0.9537**	**0.5205**	**293.72**	**0.5432**
Ireland	**0.8070**	**0.4345**	**1043.47**	**0.4924**
Italy	0.5446	0.3070	**-837.91**	**0.5518**
Lithuania	0.5870	0.0610	-6.66	0.0001
Netherlands	0.7604	0.2488	-938.56	0.1621
Norway	-0.1137	0.0479	**-3843.82**	**0.5346**
Poland	0.2335	0.2343	244.13	0.3577
Romania	**1.2919**	**0.6115**	**393.89**	**0.5660**
Slovakia	0.3061	0.1701	71.63	0.0771
Spain	**0.7065**	**0.4748**	-487.88	0.3723
Sweden	0.0893	0.0064	-501.33	0.0752
United Kingdom	**0.8877**	**0.5230**	**1341.76**	**0.6915**

Note: Coefficients marked in bold are significant at $p < 0.05$
Source: Authors' calculations based on the World Bank and Eurostat data

4. CONCLUSION

The results of the correlation analysis using the Spearman rank correlation method made it possible to confirm the existence of a direct correlation with the high strength of the relationship between GDP per capita and digitization indicators (share of population who used a mobile phone or the Internet to access a financial institution account, share of population who made or received digital payments, individuals using the Internet for ordering goods or services). Besides, a moderate direct relationship was confirmed between the indicators of GDP per capita and the share of enterprises' turnover on e-commerce. Thus, FinTech development contributes to economic growth by increasing GDP generated in the financial sector, and indirectly by

increasing e-commerce turnover and real sector financing, in particular by creating more favorable lending conditions for small and medium-sized businesses. The regression analysis allowed us to draw the following conclusions. First, a statistically significant regression dependence of economic growth rates on the value of mobile and internet banking is found in only a small number of countries. Therefore, the development of digital banking cannot be considered an unambiguous factor in GDP growth rate or GDP per capita growth, but it is necessary to take into account other country-specific parameters. Second, there is a moderate direct impact of the share of enterprises' turnover on e-commerce on the GDP growth. At the same time, a clear pattern of the impact of the share of enterprises' turnover on e-commerce on GDP per capita was not found.

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THE IMPACT OF FINANCIAL CRISIS ON THE BANKING DEVELOPMENT (WORLD EXPERIENCE AND UKRAINE)

Zahid Mamedov
Azerbaijan State University of Economics (UNEC)
Baku, Istiqlaliyyat str., 6, AZ1001, Azerbaijan
zahid.mammadov@unec.edu.az

Ulyana Vladychyn
Ivan Franko National University of Lviv
Lviv, Universytetska St., 1, 79000, Ukraine
ulyana.vladychyn@lnu.edu.ua

Sophia Lobozynska
Ivan Franko National University of Lviv
Lviv, Universytetska St., 1, 79000, Ukraine
sofiya.lobozynska@lnu.edu.ua

ABSTRACT

Banking is influenced by globalization processes, which often have negative consequences. Economic and financial insecurity, systemic risks and ineffective actions of government regulators make national banking systems vulnerable to external shocks. The global financial crises create significant barriers to bank activity. In recent decades, the negative aspects of the banking development of the in Ukraine have been noticed due to the impact of the global financial crisis of 2008-2009, the internal systemic crisis of 2013-2015. Trust in banking institutions has been lost, and increasing panic among the population has forced the regulator to impose tight restrictions. The cluster analysis of indicators in the pre-crisis and post-crisis periods demonstrates the level of regulatory effectiveness and allows examine the relationship between macroeconomic and financial indicators in different countries. Today's realities show that we are on the verge of a new global financial crisis. The introduction of quarantine and a state of emergency in many countries around the world in the early 2020s will negative affect the banking systems, the foreign exchange market and the ability to consume banking products. At the same time, opportunities for the development of Internet banking and the new financial technologies will increase significantly. The analysis of the anti-crisis measures taken by the countries of the world in the past and adaptation them to the national realities make possible to minimize the risks and develop effective ways of overcome the crises in Ukraine in the future.

Keywords: *Banking, Cluster analysis, Financial crisis, Globalization processes, Trust in banking institutions*

1. INTRODUCTION

The global financial crises create significant barriers to bank activity. They reduce the ability to provide banking services in emergent and well-developed countries. Crises force foreign investors to withdraw their capital from the banking systems of foreign countries. The global and national crises can cause the banking industry to grow or decline. The problems of global financial crises and their impact on the economic development and banking systems of different countries of the world have been researched by many scientists. In their papers the authors established the reasons for the occurrence of financial crises as well as their consequences for different countries (Arzhevitin, S., Baranovski, O., Bereslavska, O., Doroshenko, I., Kolinets, L., Liutyi I., Mamedov, Z., Nosova, O., Vain, S.), assessed the peculiarities of banking system regulation in the crisis period as well as identified most efficient anti-crisis activities aimed to

overcome the negative impact of crisis phenomena on national economies (Bohdan, T., Hrytsenko, V., Konopatska, L., Oleksenko, K., Raievski, K., Rudenko, Z., Tsyhanov, S., Vakhnenko, T.). Of importance for the determination of the efficiency of regulation in different countries is analysis of economic processes and core indicators of banking system development and countries' economic growth. On the basis of comparative data a conclusion can be drawn about the degree of influence of financial crises on the development of banking and the steps aimed at their prevention in the future can be established. The goal of the article is to characterize core indicators of the development of banking systems of different countries of the world in pre-crisis and post-crisis periods, to show the changes occurring in the countries in the conditions of the 2007-2009 global financial crisis, to consider the peculiarities of internal systemic crisis of 2014-2015 in Ukraine, to outline the causes of its occurrence and its consequences for the state's economy.

2. ASSESSMENT OF BANKING DEVELOPMENT INDICATORS IN DIFFERENT COUNTRIES OF THE WORLD IN THE CONDITIONS OF FINANCIAL CRISES

The crises occurring in the global financial system determine the status of economies in most countries of the world. And each state, regardless of the degree of its economic integration into the global financial system experiences the crises of different depth and intensity. As the result of impact of crisis phenomena state bodies take anti-crisis measures aimed to stabilize the financial, real, state sectors of the economy as well as try to comply with the periods of the country's reaching pre-crisis parameters in every way possible. At the same time, banking institutions themselves re-assess their activity, look for new approaches to problem solving, ways to minimize risks, to reduce costs and to support financial stability and liquidity. The 2007-2009 global financial crisis got the status of the global crisis since it embraced the overwhelming majority of countries. As the result, economies of many countries suffered considerable losses, there occurred stock market crashes, bank panic among residents, increase in interest rates, increase in the risks for investors, collapse of financial institutions, there could be traced overall tension and balance disruption in national economic systems of countries. Over the period of 2007-2008 financial crisis inflicted damages on the bank shareholders for the amount exceeding 690 bln. USD [14, 13]. This crisis is considered to be the crisis of trust, however, there are different opinions concerning the statement that this was the first globalization crisis since it embraced almost the whole international financial system [6, 21]. And it is the main trend determining the status of economies of most countries of the world [10, 8]. The consequences of the financial and economic crisis are as follows: in 2008 global GDP decreased by 3,689 bln. USD, or by 6.1%, though it still remained at the rate not lower than in 2004 [5, p. 61]. And in some countries of the world the 2007-2009 financial and economic crisis had a more significant impact on the financial system than on the economy in general.

2.1. Cluster analysis of the indicators of banking performance and development in different countries of the world in the conditions of the 2007-2009 crisis

Cluster analysis of indicators in pre-crisis and post-crisis periods shows the level of banking regulation efficiency and allows to clarify the connection between macroeconomic and financial indicators in different countries. Models based on the cluster analysis results enable to study social and economic objects and processes that are uniform by the key economic and technical characteristics and activity parameters as well as the degree of their business activity. The following core indicators have been selected to build clusters and to carry out further research: GDP per capita (current USD), bank concentration (percent of bank assets held by top three banks), branches of commercial banks per 100,000 adults, bank assets (% of GDP), bank return on assets (ROA), bank return on equity (ROE) and bank non-performing loans (NPL) to gross loans.

The selected indicators enable to assess the efficiency of the state policy in the periods before and after the 2007-2009 crisis. GDP per capita has been selected to reflect the overall level of state development. Branches of commercial banks and bank assets characterize the degree of banking operations and services use by residents. The most important indicators of the banking system operation are return on assets and return on equity. The banking system functions efficiently if it constantly supports profitability at a sufficient level (ROA over 1%, ROE over 7 %). Decreased level of return on equity is interpreted as availability of a problem with reserving in the banking system in the current period and decreased credit activity in the future. The quality of management of the banking system's credit risk is characterized by the ratio of non-performing loans to gross loans. Acceptable level of non-performing loans in the overall credit portfolio, with the adequate level of state control over the banking system, should not exceed 3.5 %. The share of non-performing loans coverage with insurance reserves must be close to 100 %. Under such conditions acceptable credit risks do not pose a threat to the overall stability of the banking system. The objects of research are 90 countries of the world, representing different continents. The information for cluster analysis has been developed on the basis of the data of official statistics of the International Monetary Fund, the World Bank, as well as financial reports on the functioning of the banking systems of different countries of the world [7, 9, 16]. Cluster analysis is made by us using the package of software programs STATISTICA 6 and using the following methods: hierarchical clustering (tree clustering), which enables to build a hierarchical cluster tree (dendrogram); K-means method (K-means clustering), in which the number of clusters is known and is set by the researcher for further analysis. Through hierarchical clustering using complete link method tree diagrams for 2007 and 2009 have been built (see Figure 1). Dendrograms visually show the distances between individual objects and clusters, the sequence of their development and enable to identify the number of clusters the initial integrity should be split into. According to the depicted clustering stages it seems most efficient to point out 4 clusters of banking system development in the two periods. These clusters show similarities between the objects grouped in them. One more cluster analysis methods is iterative K-means method, using which we set an already established number of clusters countries should be split into, with due account of the change in the core selected indicators in them. As the result of clustering using K-means method we got somewhat new compositions of individual clusters. We can see that 4 outlined clusters in these periods are at a sufficient distance from each other, this testifying to successful clustering (see Figure 2). In the pre-crisis period of 2007 clusters split as follows. Cluster 1 included 39 countries: Albania, Argentina, Belarus, Bosnia and Herzegovina, Brazil, Chile, Costa Rica, Croatia, Czech Republic, Ecuador, Egypt, Georgia, Guatemala, Honduras, Hungary, India, Indonesia, Lebanon, Macedonia, Mauritius, Mexico, Morocco, Oman, Pakistan, Panama, Philippines, Poland, Russian Federation, Rwanda, Saudi Arabia, Senegal, Serbia, Sierra Leone, Slovak Republic, Thailand, Tunisia, Ukraine, United Arab Emirates, Venezuela. The figures of the countries' banking system and economies development level in this cluster are low. In these countries in 2007 low GDP per capita could be traced, the lowest as compared to all other clusters figure for bank concentration calculated as percent of bank assets held by top three banks, banking operations and services are not popular among residents due to a small number of bank divisions in these countries. Low volume of bank assets does not enable the economies of those countries to develop on a full-fledged basis, this leading to inefficient performance of the banking system and, respectively, low return on assets and equity. This cluster has the highest mean in the indicator bank non-performing loans to gross loans.

Figure following on the next page

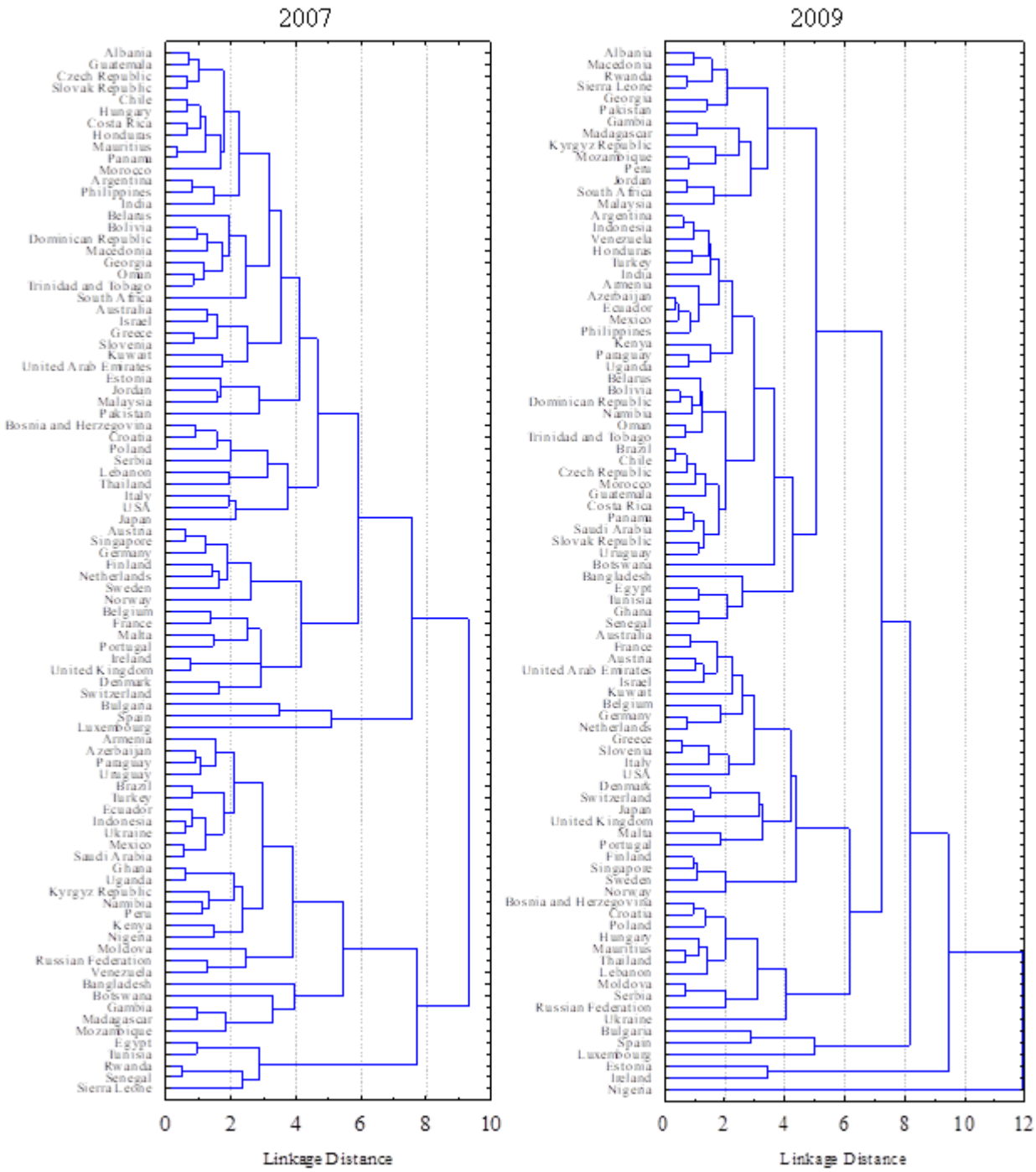

Figure 1: The dendrogram of grouping countries' banking system development and regulation efficiency indicators in 2007, 2009
(Source: constructed by the authors)

Cluster 2 includes 22 countries: Armenia, Azerbaijan, Bangladesh, Bolivia, Botswana, Dominican Republic, Gambia, Ghana, Kenya, Kyrgyz Republic, Madagascar, Moldova, Mozambique, Namibia, Nigeria, Paraguay, Peru, South Africa, Trinidad and Tobago, Turkey, Uganda, Uruguay. The figures for the countries from this cluster in 2007 were a bit better than in cluster 1. In particular, the level of bank concentration of top three banks was higher. And the number of bank divisions in these countries as well as the volume of assets are not high, however, the level of banking activity efficiency, as characterized by ROA and ROE, is the highest out of all clusters.

That is accounted for by the fact that with low amount of assets high loan interest rates ensure high level of return. Under such conditions most residents cannot afford loans that are provided only to financially reliable borrowers. That ensures low level of non-performing loans.

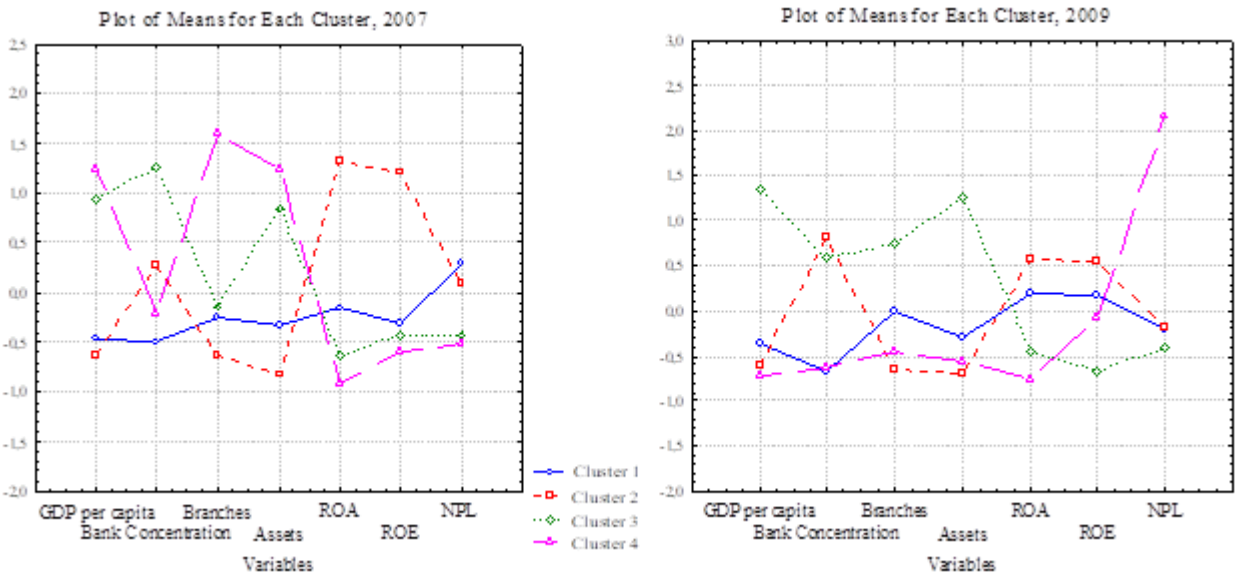

Figure 2: Mean values of clusters of countries' banking system development and regulation efficiency indicators in 2007, 2009
(Source: calculated and constructed by the authors)

Cluster 3 includes 13 countries: Austria, Estonia, Finland, Germany, Israel, Jordan, Kuwait, Malaysia, Malta, Netherlands, Norway, Singapore, Sweden. These countries were united in 2007 by high GDP per capita and high bank concentration level. However, the use of banking services via a network of divisions in the country is poor. Large volume of bank assets does not always prove the efficiency of their use, and at low loan interest rates profitability of banking systems of those countries is not high. Cluster 4 includes 16 countries: Australia, Belgium, Bulgaria, Denmark, France, Greece, Ireland, Italy, Japan, Luxembourg, Portugal, Slovenia, Spain, Switzerland, United Kingdom, USA. The efficiency of regulation in these countries is the highest, there is no monopoly in the banking market and bank concentration by assets held by top three banks of the countries is low. And considerable number of bank divisions ensures wide access to banking operations for clients. The level of bank assets (% of GDP) is high, and this testifies to the contribution of assets by banks into the development of the economy and sustainable economic growth. In the pre-crisis period of 2007 the best indicators of banking system development can be traced in countries with developed economy and highly efficient state regulation. While crisis phenomena and external turmoil in the global economy affect internal indicators of the countries' banking systems development. Analysis of absolute banking development indicators in foreign countries in the post-crisis period of 2009 showed how efficiently the state authorities coped with the impact of external shocks and whether they applied adequate regulation measures. Absolute values of the selected indicators showed a considerable decline in some countries. While some other countries were characterized by stability of development and even improved indicators. Thus, the number of branches of commercial banks per 100,000 adults went considerably down in such countries as Belgium (from 51.4 to 47.9), Denmark (from 51.9 to 45.8), Estonia (from 24.02 to 20.3), Netherlands (from 28.7 to 25.2), Spain (from 104.2 to 99.1), Switzerland (from 55.3 to 52.7), etc. In most countries the number of bank divisions almost did not change, while in some countries it even increased – these are Albania, Bolivia, Bulgaria, Georgia, Guatemala, Macedonia, Moldova,

Morocco, Poland, Portugal, Serbia and others. The volume of bank assets (% of GDP) increased in such countries as Albania, Australia, Azerbaijan, Belarus, Brazil, Chile, Estonia, Georgia, Hungary, Greece, Italy, Japan, Kuwait, Malaysia, Norway, Portugal, Turkey, USA and others. Bank asset to GDP decrease occurred in the following countries: Argentina, Belgium, Bolivia, Guatemala, Indonesia, Jordan, Namibia, Pakistan, Venezuela. Bank NPL to gross loans more than doubled in such countries as Estonia (from 0.5% to 5.2%), Georgia (from 0.8% to 6.3%), Hungary (from 2.3% to 8.2%), Ireland (from 0.6% to 9.8%), Kuwait (from 3.8% to 11.5%), Moldova (from 3.7% to 16.4%), Nigeria (from 9.5% to 37.3%), Ukraine (from 3% to 13.7%), USA (from 1.4% to 4.9%), and others. Clusters obtained in 2009 differ considerably from each other (see Figure 2). Clusters built in 2009 show changes in the indicators and prove the impact of financial crisis on the status of countries' banking systems and economies development. Thus, there can be traced deterioration in mean economic figures of the countries grouped into clusters. Generally, there can be traced reduced number of divisions and bank assets in the countries, ROA and ROE went down, while in some countries the shares of NPL in the overall bank credits went considerably up. In 2009 the clusters divided in the following way.

- Cluster 1 included 36 countries: Albania, Argentina, Armenia, Azerbaijan, Bosnia and Herzegovina, Brazil, Bulgaria, Chile, Costa Rica, Croatia, Czech Republic, Ecuador, Georgia, Guatemala, Honduras, Hungary, India, Indonesia, Kenya, Lebanon, Mauritius, Mexico, Morocco, Panama, Philippines, Poland, Russian Federation, Saudi Arabia, Slovak Republic, Slovenia, Thailand, Turkey, United Arab Emirates, Uruguay, USA, Venezuela. In 2009 in cluster 1 countries bank concentration of top three banks of the countries went down, ROA and ROE increased, and the share of bank non-performing loans to gross loans went down.
- Cluster 2 included 20 countries: Belarus, Bolivia, Botswana, Dominican Republic, Gambia, Jordan, Kyrgyz Republic, Macedonia, Madagascar, Malaysia, Mozambique, Namibia, Oman, Paraguay, Peru, Rwanda, Sierra Leone, South Africa, Trinidad and Tobago, Uganda. The following changes occurred in cluster 2: bank concentration of top three banks of the countries went up and the figures for banking performance efficiency went down (ROA i ROE).
- Cluster 3 included 24 countries: Australia, Austria, Belgium, Denmark, Estonia, Finland, France, Germany, Greece, Ireland, Israel, Italy, Japan, Kuwait, Luxembourg, Malta, Netherlands, Norway, Portugal, Singapore, Spain, Sweden, Switzerland, United Kingdom. In cluster 3 countries GDP per capita went up, bank concentration of top three banks went down, the number of branches of commercial banks per 100,000 adults and bank assets (% of GDP) increased, ROA remained almost at the same level, while ROE went down.
- Cluster 4 included 10 countries: Bangladesh, Egypt, Ghana, Moldova, Nigeria, Pakistan, Senegal, Serbia, Tunisia, Ukraine. Cluster 4 included countries with the worst figures. Almost all the indicators in this cluster deteriorated significantly. In particular, there can be traced a considerable decrease in GDP per capita, branches of commercial banks per 100,000 adults, bank assets (% of GDP) as well as a considerable growth in bank NPL to gross loans.

It can also be traced that in 2009 some countries changed clusters. For example, we can see that as the result of the crisis the figures in of such countries as Egypt, Ukraine, Bangladesh, Moldova, Ghana, Nigeria, and others got worse. Also, the figures in such developed countries as Austria, Belgium, Estonia, Denmark, Finland, Germany, Ireland, Netherlands, Spain, Sweden, and others changed for the worse. In particular, the number of bank divisions, ROE went down, while non-performing loans increased. This is also confirmed by absolute values of indicators in these countries.

For Ukraine the 2007-2009 financial crisis resulted in the following: reduced resident trust in banks; instability in the currency market; problems with payment of foreign borrowings by banks, received over previous periods; difficulties with investment attraction; increase in loan interest rates; increased role of the state in banking regulation. We can also see that many developed countries of Europe were affected by the global economic crisis more than some countries with developing economy. And though it is considered that countries with stable economy and sustainable financial sector development have wider opportunities for minimizing the consequences of crisis phenomena, sometimes this is all accounted for by the regulatory anti-crisis measures being not efficient enough. A deeper impact of the crisis on developed countries is caused by the following:

- Deep integration of the EU countries in the global financial space, in particular, in the fields of trade, investment, market of capitals, etc.
- High vulnerability of the economies of European countries to external threats due to macroeconomic disproportions caused by ill-judged economic policy of the governments of Eastern European countries in the years of economic boom [5, 65]
- Lack of development of financial markets of developing countries, which does not allow them to fully use the resources of the global financial system.

The analysis made shows that the financial crisis embraced all the countries of the world, but had a different impact on their economies and banking systems. Thus, in some countries it caused a considerable decline in the economy and deterioration by the core indicators of banking development, while in others it led only to reduced development pace.

2.2. Characteristics of the indicators of bank performance in Ukraine in the conditions of the internal systemic crisis of 2014-2015

Over the recent decades the negative aspects in the development of the Ukrainian banking system have been traced not only as the result of the impact of the 2008-2009 crisis, but of an internal systemic crisis of 2014-2015 as well. In this period systemic risks got substantially aggravated, the effect of the currency, banking, economic and political crises came together and, along with unfavourable external situation, led to deep crisis effects [1, 16].

The main factors causing the 2014-2015 crisis in Ukraine were as follows [13, 217]:

1. Political factors (lack of agreement and disputes between political forces in the development of legislative acts; development of executive management bodies, state institutions and organizations with the participation of the ruling political forces only; military actions in the east of Ukraine; lack of certainty about the international vector; unprotected and imperfect legislative base, etc.)
2. Economic factors (reduced inflow of foreign direct investment and decline in Ukraine's investment ratings; instability of the currency market and its speculative nature; outflow of foreign capitals from the banking system and reduced share of foreign investors in banks; increased state budget deficit and state debt; devaluation of the national currency unit, ongoing trend towards reduction of the international reserves of the National Bank of Ukraine (NBU), negative trade balance, etc.)
3. Social factors (considerable stratification of residents (division into the rich and those below the poverty line); excessive merger of business and power as well as satisfaction of own interests; loss of development reference points as well as trust in the financial system, economy, and authorities by residents, etc.).

There prevail opinions that economic crises in Ukraine result from financial imbalances related only to high budget deficit and excessive state debt, fixed hryvnia exchange rate and currency restrictions, shortage of external loans, foreign investment deficit and high inflation rate [8].

However, over the last 20 years in Ukraine crises in the financial domain have been resulting from production fall. Such fall is caused by its structural vulnerability, raw material specialization and deterioration of the external situation, reflecting the business cycles of the leading global economies and the policies of their states [8]. The changes in the core indicators of the Ukrainian banking system development over the crisis 2014-2015, as well as gradual restoration and stabilization of the banking system operation in the following periods will be analyzed according to the data presented in Table 1.

Indicators	2013	2014	2015	2016	2017	2018	2019
Number of licensed banks	185	163	117	96	82	77	75
of which: with foreign capital	49	51	41	38	38	37	35
Number of banks' branches	19290	15082	11871	10316	9489	8509	8002
Assets	159902	83511	52265	46203	47613	49146	63094
Equity	24096	9387	4321	4552	5829	5622	8480
Banks' liabilities	135806	74124	47943	41651	41784	43524	54614
Net profit (loss)	180	-3359	-43622	-37098	-35955	785	2518
Bank return on assets, %	0,12	-4,07	-5,46	-12,6	-1,93	1,65	4,35
Bank return on equity, %	0,81	-30,46	-51,91	-116,74	-15,84	14,26	34,18

Table 1: Key performance indicators of the Ukrainian banks, 2013-2019, mln USD (Source: compiled by the authors on data of National Bank of Ukraine. http://bank.gov.ua/en/statistic/supervision-statist/data-supervision)

Over 2013-2017 the number of banks in Ukraine decreased 2.3 times (from 185 to 82). And the number of foreign banks in 2014 even increased (from 49 to 51). And in the conditions of cyclic economic development foreign banking capital brings about positive changes and does not have any negative impact on the country's economic security [15, 163]. However, over the following years even in this segment a downward tendency can be traced. Correspondingly, in this period the number of banks' branches also went down. Such numerous bank bankruptcies are related to the following factors: unfavourable economic situation and deteriorating quality of bank assets, GDP reduction, rapid devaluation of the national currency unit and high inflation rate. That all caused increase in loan arrears of corporate clients and residents. Non-transparent structure of bank ownership became the grounds for NBU to take such banks out of the market. Also, almost all banks in Ukraine were faced with the need for additional capital, but not all their owners had an opportunity or a wish to carry out their additional capitalization. Illegal unpledging of corporate borrowers' property is also considered to be one more reason therefor. Decrease in the banking system development can also be traced by such indicators as bank assets, equity and commitments. On the one hand, that is partially related to reduced number of banks, while on the other hand – with increased risks and deteriorating quality of assets as well as decrease in the trust in banks on the part of depositors. Banking system operation resulted in considerable losses over 2014-2017, as well as low return on assets and equity. Only in 2018-2019 the Ukrainian banking system started its restoration and declared profitable activity and increase in the core indicators – assets, equity and commitments.

3. THE FIRST RESPONSE OF THE REGULATORY BODIES IN SOME COUNTRIES TO THE 2020 CRISIS

After the 2007-2009 crisis related to careless credit financing the banks were faced with the new challenges of the economic crisis of 2020, for which the pandemic caused by COVID-19 is to blame. At the same time many countries have developed economic mechanisms of responding to COVID-19, where banks are assigned the role of the channel for provision of mass state assistance to affected companies and households.

Thus, the EU has declared its support for firms and a guarantee that the EU financial sector liquidity will manage to further support the economy. 1 bln. Euros have been allocated from the EU budget to the European Investment Fund to stimulate banks to ensure the liquidity of small and medium-sized business. The ECB expands its bank crediting programs, credits are going to be cheaper, it is presumed that interest rates in some categories of credits will be minus 0.75% [2]. Italy has developed a package of credit guarantees to prevent credit crisis. The State Guaranty Fund for Small and Medium-Sized Enterprises has been increased by 1 bln. Euros, while the state creditor Cassa Depositi e Prestiti has been allowed to guarantee at least 10 bln. Euros of loans out of the Treasury Fund for 500 mln. Euros [3]. France has developed activities to provide support for negotiations with the bank concerning bank credit re-planning from the state and Bank de France (credit mediator) [4]. As compared to previous crises, the banks faced the new challenges being more prepared and with a sufficient level of capitalization. Banks have become more stable in relation to capital outflow. There are reasonable grounds to consider that measures applied after the 2009 crisis in relation to transfer of liquidity risks from banks to capital markets have yielded a good result. An important role in crisis overcoming has been undertaken by the central banks which have minimized the risks via their programs of market support. The regulators of financial banks of many countries have either terminated or loosened the effect of regulatory requirements set for banks, that allowing them to develop their credit potential. Besides that, European regulators have made the banks refuse to pay dividends and bonuses to their best employees. American banks have stopped share repurchase. In spite of the loosening in the banking sector regulation, small banks and non-banking credit organizations run the risk of not surviving in the crisis. The share of NPL in the banks' credit portfolio will rise, in particular, what refers to consumer credits, credits provided for the tourist industry, entertainment industry, air transportations industry. Thus, for example, in Italy creditors have reduced their expectations concerning bad loan recovery by half. Reduction of accounting rates by central banks will have a negative impact on the profitability of banks. Since early 2020 68 central banks have reviewed their accounting rates. Most of them have chosen to reduce them in order to slow down economic decline due to credit easing. In March 2020 the US Federal Reserve System reduced its base rate from 1.00-1.50% to 0.00-0.25%. That is the lowest level ever. The central banks of the leading countries of the world have also reduced their base rate: Canada – by 1.5 p.p. to 0.25%, Great Britain – by 0.65 p.p. to 0.10%, China – by 0.30 to 3.85%. To overcome recession and liven up the economy the central banks of developing countries had to more actively reduce the core interest rate: Russia reduced it by a 0.75 p.p. to 5.50%, Poland – by 1.0 p.p. to 0.50%, Moldova – by 2.25 p.p. to 3.25%, Turkey – by 3.25 p.p. to 8.75%, Georgia – by 0.5 p.p to 8.50%, Belarus – by 0.25 p.p to 8.75%. Over the quarantine period NBU has reduced its accounting rate twofold: by 3 p.p. to 8% [12]. The policy of low interest rates is likely to be followed in the future, hence, net interest income of banks will be going down. As far as Ukrainian economy in general is concerned, additional set of tools aimed to support it (ensuring of bank flexibility in liquidity management, introduction of long-term refunding and interest swaps, expansion of collateral list) will contribute to the reduction of interest risks and liquidity risks for banks, enhancement of their resource capacity as well as better transmission from accounting rate reduction into interest rates under their transactions. That will finally stimulate expansion of crediting of projects requiring long-term investment, in particular, infrastructural ones. Decreased accounting rate along with other measures introduced by NBU will give a boost to the economy, necessary to support residents and business in complicated current conditions and to quickly restore business activity and reduce unemployment after the end of the quarantine period.

4. CONCLUSION

Banking is influenced by globalization processes, which often have negative consequences. The main advantages of the globalized environment include liberalization of financial markets, opening of national borders for international capital flow, integration into the global financial space, etc. Along with that, one of the globalization problems is the impact financial crises have almost on all the countries of the world. Clustering of countries according to the main indicators of banking activity during 2007-2009 shows the different impact of financial crisis to developed countries and countries with developing economy, confirms the low level of economic growth of Ukraine and inefficient policy of state regulators. In next periods other crises took place in Ukraine. Liquidated during 2014-2015 Ukrainian banks were insolvent, had significant disruptions in their operations and problems with transparency. Today's realities show that we are on the verge of a new global financial crisis. In fact, due to COVID-19 banks all over the world have been faced with different problems: there have occurred large-scale changes in the demand for banking transactions and services; security threats for bank employees have grown considerably; the quarantine introduced has called into question the efficiency of business models of banks.

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THE IMPACT OF CURRENCY RESTRICTION ON THE FOREIGN EXCHANGE MARKET (EXPERIENCE OF UKRAINE)

Azer Babayev
Azerbaijan State University of Economics (UNEC)
Baku, Istiqlaliyyat str., 6, AZ1001, Azerbaijan
azik.347@yandex.ru

Iryna Skomorovych
Ivan Franko National University of Lviv
Lviv, Universytetska St., 1, 79000, Ukraine
iryna.skomorovych@lnu.edu.ua

Roya Khanlarova
Baku State University
Academician Zahid Halilov street, 23, AZ1148, Baku, Azerbaijan
roya.khkhv@mail.ru

ABSTRACT

In Ukraine, the central bank (National Bank of Ukraine) is the regulator of the currency market. Based on the legislation and the regulatory acts the NBU establishes the exchange rate regime of the national currency (hryvnia), determines the subjects of the domestic currency market and sets the rules for the functioning of the foreign exchange market. Since 2005, the Fundamental Principles of Monetary Policy have consistently declared a gradual transition to a floating exchange rate. However, the NBU tried to keep the hryvnia's official exchange rate at stable level. This stability was achieved through the introduction of various restrictive measures on the foreign exchange market, increasing foreign debt and eventually even reduces international reserves. Only after January 2014, when 12.8% of international reserves were spent on foreign exchange interventions, the NBU formally refused to maintain the external stability of the national currency, and a floating exchange rate regime was established in Ukraine. Having signed the Association Agreement with the EU, Ukraine has committed to liberalize capital movements. In this case, the priority is to ensure the internal stability of the hryvnia. The political, military and economic crises and the threat of rapid devaluation of the hryvnia forced the NBU to make the tough rules of functioning of the non-cash and cash segments on the foreign exchange market. In February 2019, as a result of the adoption of the Law of Ukraine On Currency and Currency Transactions, a significant number of restrictions was canceled. The NBU has refused to set targets for maintaining the hryvnia exchange rate at a certain level. At the same time, the NBU has kept the rights to conduct foreign exchange interventions to smooth out the sharp exchange rate fluctuations, accumulate international reserves and perform other strategic tasks.

Keywords: *Exchange rate, Foreign exchange transactions, Foreign exchange market, Hryvnia, National Bank of Ukraine*

1. INTRODUCTION

The establishment of the currency market in Ukraine in the format in which it exists now started in 2000, several years after the monetary reform was carried out in 1996 and the national monetary unit – hryvnia – was introduced into circulation. The central bank (the National Bank of Ukraine (NBU)) is the regulator of the currency market. NBU determines the participants of the domestic currency market and the rules of its functioning in line with the legislation and the regulatory acts passed on the basis of it, as well as sets the exchange rate regime for the hryvnia.

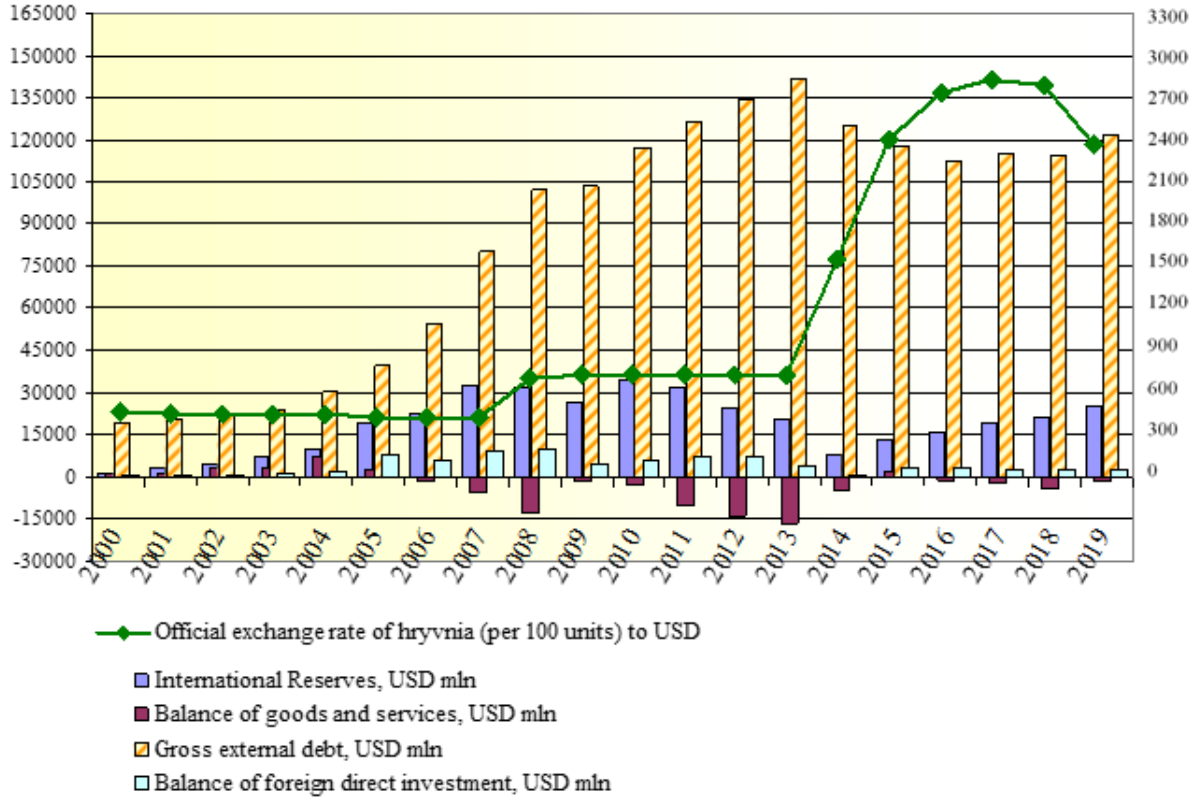
The National Bank of Ukraine, banks and financial institutions that have got NBU's licenses for carrying out currency operations, that entitle them to trade in foreign currency, are the participants of the Ukrainian currency market. Ordinary natural persons and legal entities must use the services of mediators (currency market participants) to carry out trade operations with foreign currency, of which banks are the most popular. As a buyer or seller of currency values in the currency market, NBU interacts only with financial institutions, making currency interventions. Ukraine's currency market is divided into non-cash and cash segments. To organize the functioning of the non-cash segment NBU introduced the Agreement Confirmation System, which is a set of organizational and technical means ensuring confirmation of agreements of purchase-sale of foreign currency and bank metals with non-cash hryvnias over the period set by NBU. To participate in the trading in the Interbank Currency Market of Ukraine (ICMU) a bank must file an electronic application with NBU within the established period. The currency segment of the currency market is represented by currency exchange operations which include purchase of cash foreign currency from natural persons with cash hryvnias, sales of cash foreign currency to natural persons with cash hryvnias and exchange of cash foreign currency for cash foreign currency of another state for natural persons. They may be performed by banks under the banking license, as well as by financial institutions, including postal operators having NBU's licenses for carrying out currency transactions, as well as their currency exchange officers and currency exchange offices acting under agency agreements concluded between banks, financial institutions and residential entities. As of January 1, 2020, foreign exchange operations could be performed by all banks functioning in Ukraine as well as by 30 non-bank financial institutions having NBU's license for trading in currency valuables in cash form [8]. The aim of the research is to characterize the impact of restrictive measures introduced in Ukraine by legislative and regulatory acts in different periods of the state's economic and political development on the intensity of the currency market functioning.

2. THE IMPORTANCE OF THE CURRENCY MARKET FOR ADEQUATE CURRENCY RATE SETTING

Connecting buyers and sellers of the national and foreign currencies, the currency market plays an important role in ensuring sufficient volume of the necessary monetary resources nominated in different currencies for economic entities. Due to the fact that such transactions should be taking place at a reasonable price, it is most efficient when such price, that is the currency exchange rate, is set in the market. However, the state, first of all represented by the central bank, is trying to interfere into the process of its setting, not just by performing currency interventions, but also through introduction of the notion of official currency exchange rate. That fully refers to Ukraine, where NBU is an active player in the currency market, which fact gets manifested to the highest extent in its regulatory actions. The study of regulatory documents by which NBU has systematized the process of setting official currency exchange rates of foreign currencies allows to draw a conclusion on the special status of US dollar, since its official rate has at least formally always depended on the trading in the Ukrainian currency market. This is primarily accounted for by the lion's share taken by this currency in the purchase-sale transactions in the non-cash and cash segments. On the basis of the data published by NBU [4] it is easy to calculate that over a twenty-year-period from 2000 to 2019 its share in both markets constituted on average 77 %. To determine official exchange rates of all other foreign currencies, NBU uses the exchange rate of the US dollar, the data provided by other central banks, the *Financial Times* newspaper and Bloomberg agency. After the introduction of hryvnia NBU declared that its official exchange rate to US dollar shall be set on the basis of trading in the Ukrainian interbank currency exchange.

Since the date when in 2000 it was taken out of the structure of the interbank currency market it has been taking into account information about all non-cash transactions in US dollar purchase-sale, concluded by banks with other banks and with NBU (Figure 1).

Figure 1: Official exchange rate of hryvnia to US dollar and the factors influencing it (at the end of the period)



Source: author's own compilation, based on data from [3; 4]

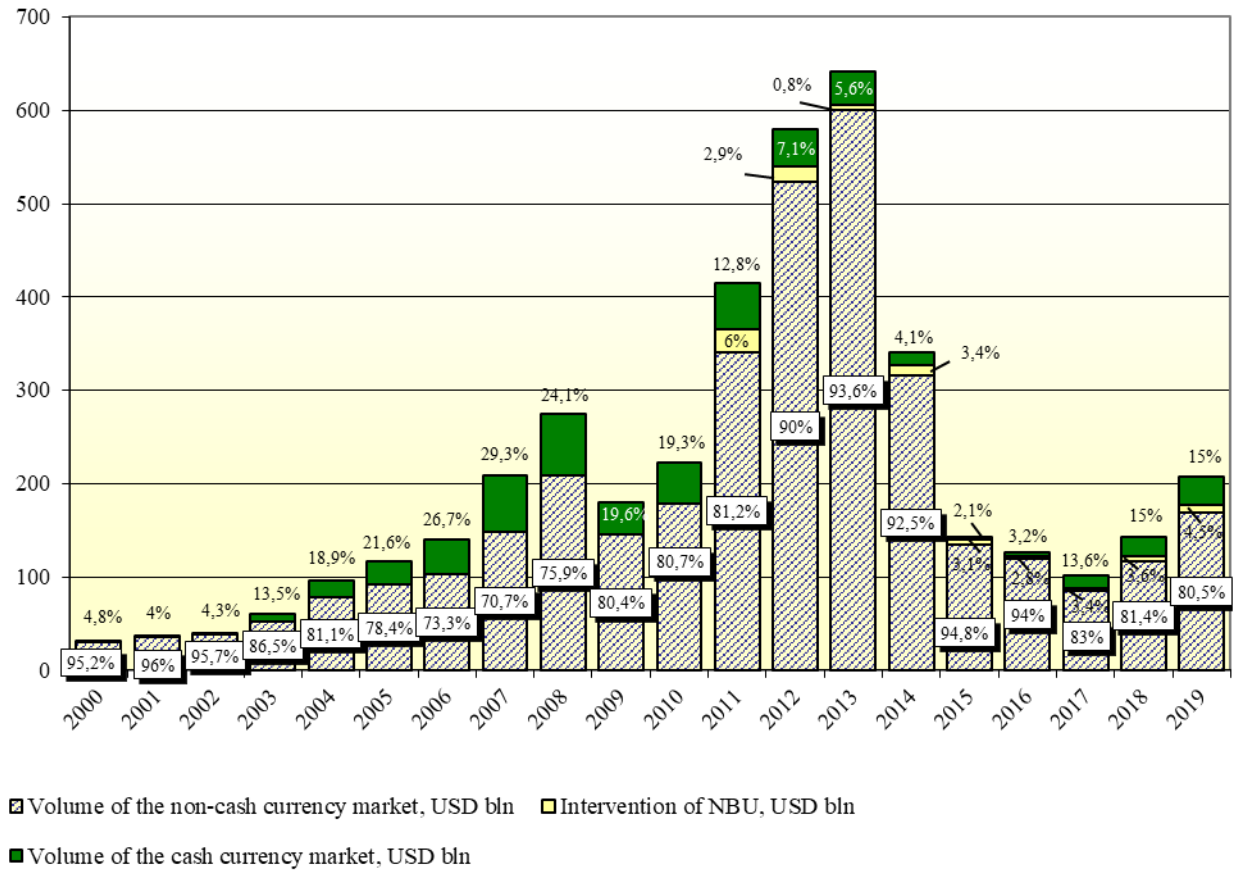
As it can be seen from Figure 1, such unchanging wording of the principles of official hryvnia exchange rate setting could also be seen in its value. Substantial changes in the figure could be traced only under the effect of global crises or considerable political turmoil in Ukraine. In other years the monetary authorities pretended that the demand and supply in the currency market got self-balanced through NBU's interventions. But that happened only due to prior accumulation of foreign debt and then also due to the use of international reserves of the central bank. According to the classification introduced in 2009, starting with March 2010 the International Monetary Fund referred the currency exchange rate regime set in Ukraine to the varieties of soft pegs, viz. the use of stabilized regime, though indicating that in reality there is an 'anchor' to US dollar [2]. Thus, the main advantage of fixed currency exchange rate, which is foreseeability of the results of foreign economic activity, was used by the state. And starting with 2005 the Core Principles of the Monetary and Credit Policy [1] constantly declared gradual transition to the regime of flexible (2005, 2008, 2010–2014), floating (2006, 2007, 2014) or managed floating (2009) exchange rate via 'ensuring of its foreseeable dynamics', 'expansion of the range of its possible fluctuations' up till the moment it loses the status of the 'anchor of the monetary and credit policy, and the currency exchange rate dynamics is subordinated to the tasks of leveling external risks posed to the stability of the monetary unit' (2009, 2010). NBU was assigned with the task of leveling drastic currency fluctuations via balanced currency interventions. Characteristic is the fact that since 2010 the NBU Board started paying attention to the need for maintaining international reserves at a safe level.

However, no gradual change in the applicable hryvnia currency exchange rate occurred. In the early 2014 NBU, on seeing that its interventions in the currency market did not produce any visible effect and on losing only in January 12.8 % of international reserves, refused to maintain external stability of the national currency. The IMF announced that since February Ukraine was transferred to the category of countries with floating currency exchange rate regime (though not with 'free floating'). It allowed the central bank not to set any specific guidance on what the exchange rate was supposed to be and to make currency interventions aimed at leveling its excessive fluctuations. And the regulator should be guided by the status of payment balance, international reserves, the rate of the currency market development [5].

3. THE STAGES OF THE CURRENCY MARKET FUNCTIONING IN UKRAINE IN THE XXIST CENTURY

Considerable effect on the currency domain in the state, on the freedom of action of its participants, adequate value of the currency exchange rate is produced by the rules of the currency market functioning, set by the regulator, which primarily affect the intensity of its performance (Figure 2).

Figure 2: Volume of trade in currency market of Ukraine



Source: Based on data from [4]

Though the volume of the cash currency market, as it can be seen from Figure 2, is much smaller as compared with non-cash segment, domestic practice shows that one cannot ignore it, in particular, in the period of currency crisis. This is primarily manifested in the expectations developed there, that are quickly taken over by economic entities. Therefore, it is necessary to consider how both segments of the currency market function in Ukraine. Detailed study of the rules by which the currency market in Ukraine functioned over the period of twenty years (from

2000 to 2019) allows to split this period into three stages. Such division is made according to the degree of regulation of this market, that is the rigidity of restrictive measures taken by NBU to systematize its operations.

3.1. The 1st stage of the currency market functioning in Ukraine

The first stage of the Ukrainian currency market functioning embraces the period from 2000 to late 2013. At that time, due to poor status of hryvnia and poor results of foreign economic activity of domestic economic entities, NBU rigidly regulated the procedure of making currency transactions both in the non-cash and cash segments of the currency market. Dividing the notion of 'exchange' of the foreign currency and its 'purchase' or 'sale', NBU introduced the most considerable restriction for the full-fledged participation of hryvnia in the currency markets. In particular, exchange (conversion) of foreign currency stands for a transaction in purchasing (sale) of one foreign currency for another foreign currency. It can be performed both in ICMU, and in the international currency market. 'Purchase' or 'sale' of foreign currency stands for the respective transaction for hryvnias. And competent banks and financial institutions are entitled to purchase, sell foreign currency exceptionally in ICMU. Through the prism of such restrictions it is not clear how national currency can become the currency in which active trading in the currency markets is carried out. The mediated ICMU presupposed that the bank acts as a mediator, performing applications made by clients at the clients' expense and using its own money within the limits of the open currency position and meets its own needs for purchase and sale of foreign currency. If the bank exceeded the established size limit of the general long open currency position, it was obliged to sell the amount of such excess not later that on the next banking day. Unsatisfied clients' needs as well as own needs as for purchase or sale of foreign currency were included by the bank to the application for participation in the Agreement Confirmation System in ICMU. Banks made mutual settlements under operations of purchase-sale of foreign currencies and bank metals only under confirmed agreements and via the NBU's System of Electronic Payments. An agreement is considered confirmed if during the functioning of the Agreement Confirmation System both participants of the agreement have got mutual confirmation via the system. Banks could carry out non-cash trade in foreign currency under 'tod, 'tom and 'spot' conditions. The period of 'forward' transactions could not exceed 365 days. Such transactions were made in the conditions when both currencies were foreign currencies and also if hryvnia was used. The use of national currency in such transactions was only possible for purchase-sale of foreign currency for making payments for export and import of goods. The only clients among all bank clients for whom restrictions on a specific currency they could buy with the mediation of banks were set were non-resident banks with opened correspondent accounts in hryvnias in those banks. NBU allowed them to only buy the foreign currency of the country where that non-resident bank was registered. To purchase non-cash foreign currency all other clients had to submit to their servicing banks the respective application and the documents confirming the legitimacy of this transaction. The volume of foreign currency bought or exchanged could not exceed the amount of actual bank client's commitments under the submitted confirming documents. The client had to use the foreign currency acquired or exchanged in ICMU for the needs indicated in the application for its purchase within ten working days after the day of its crediting to the resident client's current account. Otherwise, it was subject to obligatory sales in ICMU in full amount. Positive exchange rate difference that could arise as the result of such obligatory sale was transferred by the bank to the State Budget of Ukraine on a quarterly basis, while the negative difference was included into the results of the resident's economic activity. Over the major period of existence of the independent monetary system there existed the norm on obligatory sale of a part of currency earnings coming to Ukraine. The requirement on the sale of its half, introduced in 1993, was cancelled in 1997.

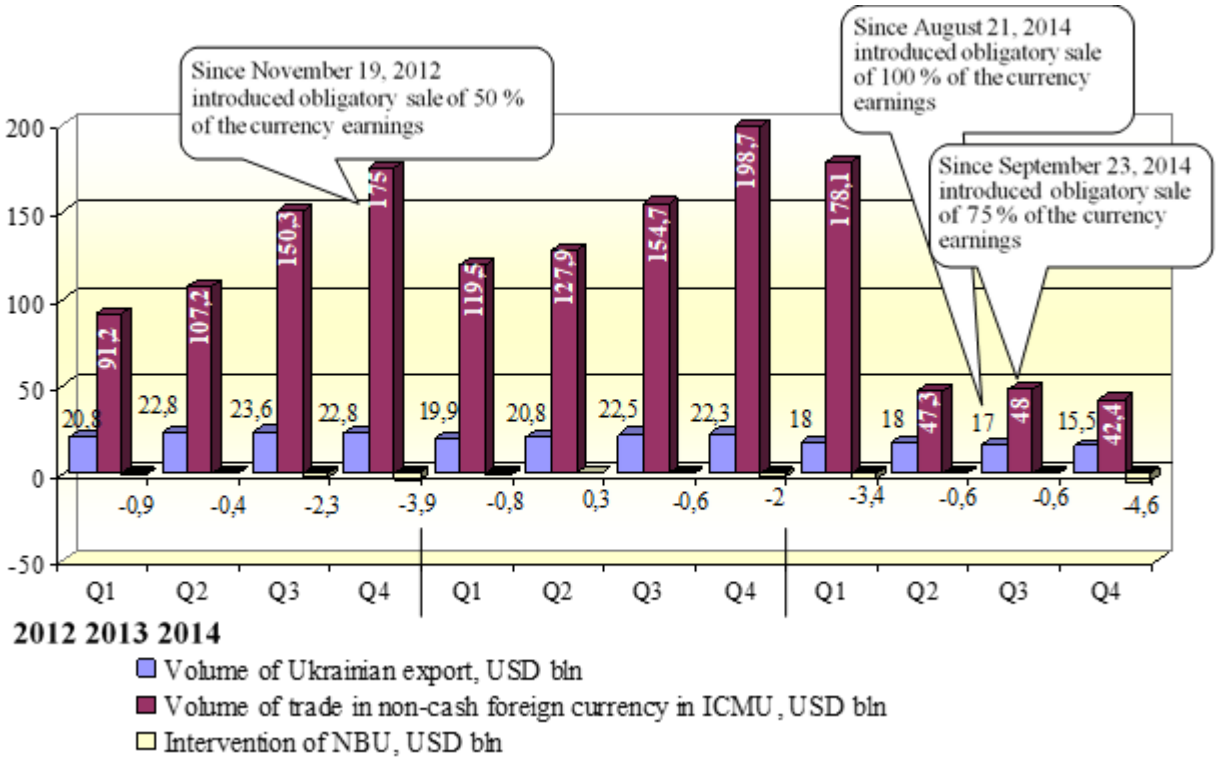
However, already in September 1998 NBU reacted to reduced volume of trade in ICMU again by introducing obligatory sale of 75 % of the foreign currency coming as revenues to resident legal entities. Several days after that the norm was reduced to already usual 50 %, but it was fully cancelled only in April 2005. Seven years and a half passed, and NBU was forced to again resort to introduction of obligatory sale of a half of the currency earnings. While carrying out currency exchange transactions, the same as with non-cash foreign currency purchase-sale transactions, banks and financial institutions independently established exchange rates for purchase and sale of cash foreign currencies. NBU determined the requirements to regulatory documents under which currency exchange transactions were carried out by the market participants, their hardware and software, premises security, the need not to exceed the maximum amount of residual cash foreign currency in currency exchange offices, to draw up primary documents confirming the fact of transaction, etc. Making currency exchange transactions cashiers were first of all to clarify the residence of the client, since non-resident natural persons were not entitled to buy cash foreign currency in Ukraine, but only make reverse exchange of not used cash in hrvynias for cash foreign currency. Therefore, they were to be informed that such reverse exchange could be performed by them only under the certificate received by them during the sale of foreign currency, that was valid for six months from the date of issuance. If the amount of currency exchange transactions did not exceed 50,000 hryvnas, the employee of the bank or currency exchange office was to indicate in the respective certificates and receipts the client's surname, name, patronymic. If the amount of the transaction exceeded the established amount, the data of the client's identity document as well as the registration number of the tax-payer registration card were to be indicated in the primary documents. The bank employee was to keep copies of the identity document pages containing the data on the basis of which the client was identified in the daily accounting documents. If the amount of cash foreign currency purchase or sale exceeded 150,000 UAH, it was necessary to carry out client identification. Since November 2009 to December 2012 in Ukraine there was a limitation for the sale of cash foreign currency per person over one operational day. At first this amount constituted 80,000 UAH, then it was increased to 150,000 UAH. Since January 1, 2013 the above limit was cancelled.

3.2. The 2nd stage of the currency market functioning in Ukraine

The second stage in the Ukrainian currency market functioning lasted from early 2014 to early 2019, that is it embraced the period of financial, political and military crisis in the state. At that time NBU tried to reduce speculative demand for foreign currency and to increase its supply using directive methods. Therefore, already starting with February 2014 during the purchase of foreign currency the amounts in hryvnias transferred by a client were first accepted by the bank to a separate analytical account, and then it submitted to NBU the register compiled on the basis of clients' application, which was supplemented with confirming documents if the amount of purchase equaled or exceeded 50,000 USD, and only on the sixth operational day it used hryvnias for the purchase of foreign currency. If in that period, as the result of exchange rate change, hryvnia equivalent was insufficient, the client was allowed either to add the necessary amount, or to agree to acquire less foreign currency. Later the established restrictions were supplemented with a ban for clients to buy foreign currency out of the credit taken as well as in case they had more than 25,000 US dollars in their current and deposit accounts, as well as had formed monetary cover under guaranties, counter-guarantees or reserve letters of credit in any bank for the same amount, and also to repay the money received by foreign investors as dividends or from their sale of the securities issued by Ukrainian issuers. Restricting demand for foreign currency NBU was trying to increase its supply using directive methods. In particular, it made it binding for domestic exporters starting with January 21, 2014 to sell all earnings received from abroad (Figure 3).

Since September 23 that same year the amount of obligatory sale was reduced to 75 %. However, the requirements set did not cause any increase in the trade volume, and the central bank then had to sell it from its reserves. Later, since June 9, 2016, the size of obligatory sale was again reduced to 65 %, and since April 5, 2017 – to 50 %. This requirement was applied to revenues in freely convertible currencies and in Russian rubles arriving in favour of legal entities (but for banks), sole proprietors, foreign representative offices (but for official ones) to accounts opened for joint activity without legal entity establishment, as well as to accounts of residents opened outside of Ukraine. Currency subject to obligatory sale was sold by the bank in ICMU without any client's assignments on the next business day after it was credited to the distribution account.

Figure 3: Volume of Ukrainian export and trade in non-cash foreign currency in ICMU



Source: Based on data from [4; 7]

However, the goal set was not achieved: trade volume in ICMU was going down, and no excessive supply of foreign currency appeared, since the central bank had to further sell it from its reserves. Besides that, the overall volume of Ukrainian export was going down. Thus, it is not expedient to introduce obligatory sale of export earnings, since in the crisis period enterprises working for export require support and not restrictions since they often are the only suppliers of foreign currency to ICMU. They need to sell foreign currency anyway to make settlements with their counteragents for the acquired raw materials. And if they buy abroad, they only lose as the result of compulsory sale of foreign currency and its reverse purchase, as well as possible currency fluctuations. Introduction of obligatory sale of export earnings urges market participants to look for illegal ways of avoiding the restrictions set, which fact has a negative impact on the activity of ICMU. NBU's interference into the functioning of ICMU took place not only during its regulation and ordinary currency interventions at a uniform rate, but when it conducted currency auctions and made targeted interventions, the importance of which rises in the period of crisis in the currency market. In particular, NBU introduced currency auctions in 2004, 2009 and 2014 to meet the needs of natural persons who had to

perform commitments under credits in foreign currency and were the primary victims of hryvnia devaluation or insufficiency of foreign currency in the cash currency market. According to the NBU data, 1.4 bln. USD were allocated in 2009, and1.8 bln. USD were allocated in 2014 for such purposes. An example of targeted interventions made by NBU to meet Ukraine's national interests is its sale of some 9 bln. USD in 2014 to NJSC Naftohaz Ukrayiny. The new version of the Guidance on the Procedure of Organizing and Carrying out Currency Exchange Transactions in the Territory of Ukraine from July 7, 2014 to July 15, 2016 presupposed that one natural person may buy cash foreign currency for the amount not exceeding 15,000 UAH a day. Back then it was about 1,200 USD. In this case the cashier did not only indicate the surname, name and patronymic of the natural person in the receipt, but also zeroxed the pages of his/her document and certified it with an imprint of the cash-desk seal and kept them in the daily accounting documents. However, such amount in the conditions of financial crisis seemed to be too large for NBU, and since September 2, 2014 with its 'interim' provisions it reduced the amount to 3,000 UAH, which then made up 230 USD. Later, since March 5, 2016, this amount was increased to 6,000 UAH (a bit less than 230 USD), and since June 9 that same year – to 12,000 UAH (a bit more than 480 USD). Only in April 2017 this limit was set at the rate of 150,000 UAH (a bit more than 5,500 USD). This restriction was not valid for cases when a client bought cash foreign currency to meet his/her commitments under the credit agreement.
One more factor contributing to shadowing of currency exchange transactions was availability from April 1, 2014 to January 1, 2017 of the norm for payment of a fee for obligatory state pension insurance amounting to 2 % of the amount of transaction during foreign currency purchase in Ukraine (the exception was made for purchase of foreign currency to repay consumer credits). That duty was also paid by legal entities purchasing foreign currency in non-cash form by January 1, 2015. The data depicted in Figure 2 shows that after the 2007–2008 boom when annual volume of trade in cash foreign currency exceeded 60 bln. USD it decreased for the first time in the crisis year 2009, and after restoration in 2011 to the level of almost 50 bln. USD it was only going down in the following years. In our opinion, such fall is primarily caused by reduced demand on behalf of bank borrowers after the ban for consumer crediting in foreign currency was set in 2011. However, the rapid fall over the period of 2014–2015 does not mean that the demand for respective financial services drastically went down. Simply due to restrictions set by the regulator natural persons were forced to more and more frequently address illegal market operators, which is ordinary money-changers. In the opinion of experts, their overall trade volume made up 30 bln. USD [6, 16], which exceeded the respective figures for the banking system 10 times. Considerable increase in the limit of the volume of one-time purchase of cash foreign currency, canceling of the fee for obligatory state pension insurance during such transactions, abolishment of the need to zerox pages of the passport of the client intending to perform currency exchange operations had an immediate impact on the return of the willingness of natural persons to use the services of financial institutions. According to the results of 2017, the volume of transactions with cash foreign currency made up 13,311.8 bln. USD, which is though 2.7 lower than in 2013, but 3.3 times higher than in 2016. Thus, liberalization conducted by NBU resulted in increased activity in the cash segment of the currency market.

3.3. The 3rd stage of the currency market functioning in Ukraine

The third stage of the currency market functioning was launched in Ukraine when the Law of Ukraine *On Currency and Currency Transactions* came into effect on February 7, 2019, since its adoption introduced, at least formally, the principle of freedom of currency transactions [9]. The main reason for the adoption of the law was conclusion of the EU-Ukraine Association Agreement under which Ukraine undertook a commitment to liberalize capital movement. As the result of approval of the new legislation NBU with its regulatory acts somewhat loosened

the requirements set for banks and their clients as far as their participation in non-cash currency market was concerned. In particular, it was allowed not to submit documents confirming legitimacy of the transaction when legal entities were purchasing foreign currency to make settlements with their counteragents abroad, if the amount of purchase did not exceed 400,000 UAH, which makes almost 15,000 USD (by April 28, 2020 the limit was 150,000 UAH). And banks had to carefully monitor abuse of the norm by their clients and prevent transaction fragmentation. Further restrictions cancelled were the established maximum period of 'forward' transaction and exceptionality of the foreign currency that could be purchased by non-resident banks having open correspondent accounts in hrvynia in Ukrainian banks. Besides that, the rule for banks participating in ICMU to use the Agreement Confirmation System was cancelled. Therefore, both banks and NBU are actively using the functionality of the trade information systems Bloomberg and Thomson Reuters. Due to that NBU has an opportunity to take part in bidding on an anonymous basis, which enables to minimize abuse by other market participants during currency interventions, while the regulator gets objective information to set the official hryvnia exchange rate. However, other established restrictions are removed by NBU gradually. In particularly, at first the volume of currency earnings subject to obligatory sale since March 1, 2019 was reduced from 50 to 30 %. And only since June 20, 2019 100 % of currency revenues from abroad started being credited to exporters' bank accounts. Completely unchanged are the restrictions related to transactions of purchase-sale of foreign currency for hryvnias in international markets, as well as the norm that makes it binding for clients who have purchased or bought foreign currency in ICMU to use it within ten business days for the purposes mentioned in the application for its purchase. The most substantial relief measures introduced in 2019 were related to foreign currency purchase-sale transactions carried out by natural persons. First of all, the opportunity was introduced to carry out such transactions online, when, if there is a current account in foreign currency, the natural person can buy or sell non-cash foreign currency via mobile or Internet banking, without going to the bank. And such transactions are carried out without any restrictions as far as amounts are concerned, since clients with open accounts have already been identified by the bank. As far as currency exchange transactions with cash foreign currency are concerned, restrictions related to maximum amounts have also been removed. However, in this case the bank demands the client's data in case the amount of the transaction exceeds the size set by the rules of obligatory financial monitoring, which is 400,000 UAH (by April 28, 2020 the limit was 150,000 UAH). Besides that, the norm on reverse exchange of unused hryvnias into foreign currency by non-resident natural persons has been cancelled. Thus, the need to clarify the client's residence has been removed, while non-resident natural persons can carry out a whole range of currency exchange transactions in Ukraine.

4. CONCLUSION

The study of the twenty-year period of the currency market operation in Ukraine allows to draw a conclusion that it is overregulated. And though we have managed to point out three stages in the currency market development depending on the rigidity of restrictions imposed by the central bank, considerable freedom in its operation has not been traced at any stage. They differ just in the rigidity of the established rules. After currency market entities at the first stage gradually adjusted themselves to all restrictive norms, more restrictions were introduced at the second stage in early 2014 in response to the financial, political and military crisis. As the result of measures introduced by the central bank trade intensity reduced considerably and did not get back to pre-crisis figures even at the third stage, in spite of partial liberalization of the rules in the currency market. And somewhat better situation can be traced in the cash segment of the currency market where NBU has lifted almost all restrictions. Since the regime of a floating currency exchange rate has been set in Ukraine, small volume of transactions in the currency

market does not enable to adequately set the price of the national monetary unit and makes NBU actively carry out currency interventions. However, it should be borne in mind that not only the rules set by the regulator affect trade intensity in the currency market. No less important is the volume of foreign economic activity, developing the demand for and supply of foreign currency in the market.

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IMPACT INVESTMENT: A SMART STRATEGY FOR SUSTAINABLE DEVELOPMENT GOALS ACHIEVEMENT

Huseynova Vafa Arif
Azerbaijan State University of Economics (UNEC),
Baku, AZ-1001, İstiqlaliyyat str.6, Azerbaijan
vafa_huseynova@unec.edu.az

Julia Lyshchikova
Belgorod National Research University, Russia
lyshchikova@bsu.edu.ru

Tatyana Dobrodomova
Belgorod National Research University, Russia
dobrodomova_t@bsu.edu.ru

ABSTRACT

The relevance of the study is due to the fact that impact investment and the creation of blended value provides a holistic approach that allows to create and develop more effective solutions to social and environmental problems than with uncoordinated actions of civil society institutions, the state and the commercial sector. The growth in the scale, breadth and public recognition of the emerging transformative investment market is changing and making traditional systems of entrepreneurial, investment and charitable activities adapt and creates more and more new opportunities not only for profit but also for achieving sustainable development goals. The research uses analytical materials and annual reports of the Global Impact Investing Network (GIIN), empirical data from the Association of Impact Investors of Russia and the Russian Fund for Regional Social Programs "Our Future". Based on retrospective, comparative and content analysis of theoretical sources, we characterize the genesis and evolution, international experience of use, types of impact investments in relation to sustainable development goals, the concept and approaches to determining blended value. Using statistical methods of data processing we obtain numerical characteristics of the development dynamics and the structure of the impact investment market in regional, national, and industrial contexts. We identify the leading countries and the most promising sectors for impact investments for sustainable development. Also, we identify the main problems and obstacles to the spread and application of impact investment practices. The results of the study can be used by government bodies of various levels and business entities of various sizes to determine potential areas of development and investment in achieving sustainable development goals.

Keywords: *impact investment, blended value, sustainable development goals, strategy*

1. INTRODUCTION

At the beginning of the 20th century, growing social contradictions and tensions in society led to the fact that countries with different socio-economic systems were forced to take on additional social responsibility, introducing pension systems, health care, providing guarantees of free education, social services and insurance. By the end of the 20th century, the state as an institution had taken a dominant position in the social sphere. The launch of the credit mechanism to ensure consumption growth has led to a sharp increase in the debt burden in almost all countries of the world over the past 50 years. States, on the one hand, are faced with growing social needs of citizens, and on the other – have less and less financial capacity to provide for them.

Equally important is the acceleration of social change processes, to which the state often cannot find an adequate response. The need to increase the role of the private sector in solving urgent social problems is largely related to this. Over the past few decades, there has been a realization that the private sector can better address current social and environmental issues than the existing public system. This fact facilitated the beginning of a dialogue about the role of social entrepreneurs in society. The involvement of private investors in financing social enterprises has already been established in a few advanced countries, and these investments are designated in the world practice as "impact investments" (Mulgan, Reeder, Aylott, 2011).

2. RELATIONSHIP BETWEEN IMPACT INVESTMENT AND SUSTAINABLE DEVELOPMENT GOALS

2.1. Genesis and Evolution of the Concept of "Impact Investment"

The concept of impact investment has a significant impact on the formation of the modern techno-economic paradigm, and officially dates back to 2007, when the Rockefeller Foundation established the "Impact Investing Initiative» (see Figure 1).

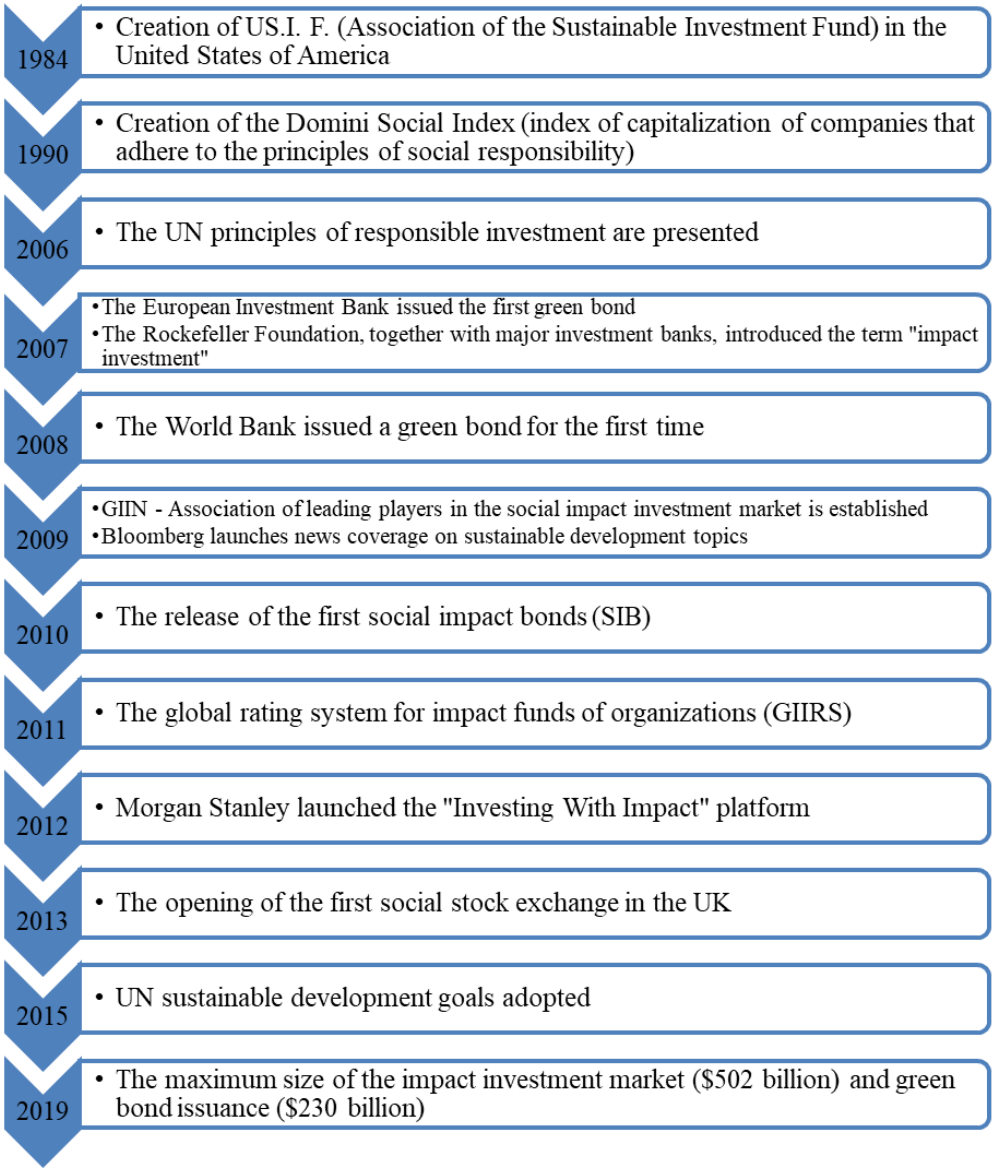

Figure 1: Milestones in the Development of Impact Investment (Source: Allman, 2015; Wilson, Silva, Ricardson, 2015)

Not only individual projects, but even government Impact Investment programs are implemented in Australia, Brazil, the Netherlands, India, Mexico, etc. The most notable trends in impact investment today are the emergence of social investor networks that develop common sector standards and form platforms for social investor communication and partnership. An example of such a network is the GIIN (Global Impact Investing Network), which started working in 2009 and unites more than 1000 funds and organizations engaged in social investment. The organization currently has 197 member organizations around the world. Among them are KPMG, McKinsey & Company, Moody's Analytics, Nesta, Rockefeller Philanthropy Advisors, Shell Foundation, Social Finance - U.K. and U.S., The Social Investment Business Group, U.S. Agency for International Development (USAID), Ernst & Young, IMB Foundation. The network member status allows you to participate in closed events, conferences, discussions and presentations about the latest research and software in the field of social investment, get information about current trends from industry leaders and experts, participate in training programs and seminars on methods and tools for social impact assessment, establish contacts and communicate with other network members (Calderini, Chiodo, Michelucci, 2018).

2.2. Sustainable Development Goals

In 2015, the world leaders of the UN member states approved the 2030 Agenda for Sustainable Development and the 17 sustainable development Goals (SDGs), thereby confirming their commitment and readiness to achieve them. The SDGs have opened a new era for partnerships between government, business, international organizations, and civil society to combine potential and efforts to ensure sustainable economic growth and social well-being. The sustainable development goals have provided an opportunity for the entire world community to determine a more sustainable path for development and have become a truly ambitious goal. However, according to preliminary estimates, it will take 5-7 trillion USD to achieve them (). The volume of government funding and the size of international technical assistance for development (about 150 billion USD per year) underline the ambitious nature of the task. Achieving the SDGs is impossible without the active participation of the business community and private capital, which amounts to about 256 trillion USD. Only 1.5% of this capital would be able to cover the deficit of financing for sustainable development. According to a study conducted by the Organization for Economic Cooperation and Development, investing in the sdgs would increase the value of businesses by $ 12 trillion by 2030, while providing employment for 380 million people (Chava, Roberts, 2008). The sustainable development goals define not only the framework conditions for government action, but also represent huge investment opportunities, new markets, and new sources of income for businesses.

2.3. SDGs as Metrics for Evaluating Impact Investments

The global network of impact investors defines social impact investments as investments that generate a positive and measurable social/environmental impact along with financial returns, the so-called "triple criterion» (Dufour, 2019). The main classification tool for impact investing is a matrix, which is a 3×3 table, based on the previously developed concept of a triple criterion (Triple bottom line, TBL or 3BL): planet, people, profit, derived in 1994 by the American economist and entrepreneur John Elkington (Mitchell, 2017). The main difficulty in studying the impact investment market remains the lack of clear criteria. Until now, some confuse social impact investment and charity. These concepts sometimes really intersect. For example, when we talk about charity and impact investment tools, because an impact investor can deliberately go for a negative financial result if it is possible to achieve a more significant social or environmental impact and use grants as a tool. But if the goal of charity is only a social or

environmental effect, as well as an impact on the company's image, then the impact investor is focused on achieving both social, environmental, and financial results (*see Table 1*).

<table>
<tr><th colspan="7">Impact investment</th></tr>
<tr><th>Traditional investment</th><td>Responsible investment</td><td>Socially responsible investment</td><td>Sustainable impact</td><td>Focus on the social consequences</td><td>Venture charity</td><td>Traditional charity</td></tr>
<tr><td colspan="5">Striving to get market returns</td><td></td><td></td></tr>
<tr><td></td><td colspan="5">Management regarding sustainable development goals and ESG factors</td><td></td></tr>
<tr><td></td><td></td><td colspan="5">Search for solutions with the highest level of social impact</td></tr>
<tr><td></td><td></td><td colspan="5">Need for impact measurement</td></tr>
</table>

Table 1: Place of Impact Investments in the System of Investment Concepts (Source: Dufour, 2019; Mitchell, 2017)

Over the past few years, market participants have formed conditional criteria for impact investment, because many countries have not yet adopted a law on social entrepreneurship and social investment. If there is no law, there are no generally accepted criteria. For this reason, companies, funds and private investors have long not considered it necessary to allocate the amount of social impact investments in their reports. And the lack of data made it impossible to analyze and evaluate the size and impact of the impact investment market. Over time, market participants began to think that they needed to find an adequate way to structure and analyze impact investments. The "UN Sustainable Development Goals" were chosen as a reference point. Thus, focusing on one or several sustainable development goals and objectives at once justifies the belonging of specific investments and their results to the sphere of impact investments. Thus, the emergence and development of impact investment has led to the introduction of new standards for evaluating investment projects, but there is no generally recognized assessment methodology in the market now. For the most part, direct quantitative results (gross indicators) are measured, such as the number of beneficiaries, the number of jobs created, etc. The Impact Reporting and Investment Standards (IRIS) - are developed by GIIN and contain 400 standard indicators for various industries, including agriculture, education, health, energy, environment, financial services, housing, water resources and waste disposal. The UN Sustainable Development Goals (SDGs) are a standard set of 169 indicators for 17 goals that measure direct quantitative results. For example, SDG 1 "Health and well-being" includes indicators such as the number of people who received better medical services, the reduction in the cost of standard medical services, and others. The use of SDGs indicators as metrics for assessing social and environmental impacts is growing every year. Some researchers go further and include in the impact measurement system an assessment of the impact of the achieved effects on the lives of all beneficiaries (Nicholls, Daggers, 2016). For example, in the project to create rehabilitation simulators for people with disabilities, in addition to the number of people who received the opportunity to exercise on simulators, a larger-scale effect of improving motor activity and increasing the ability of such people to normal life for 5, 10, 20 years is also measured. More than 2000 active impact investors and organizations in the market are working to eliminate the measurement barrier as part of the Impact Management Project. The goal is to analyze the practice of impact measurement, coordinate between participants, and then improve the unified system for measuring and managing impact. Currently, new technologies are being actively introduced to assess the impact of the project, such as optimization of data used in analysis (lean data-Acumen Foundation), blockchain, and others (*Dufour, 2019*).

3. THE IMPACT INVESTMENT MARKET

3.1. Market Size and Segmentation

Most investors in the market are relatively small organizations, while some investors manage very large investment portfolios (for example, large American financial groups, *see Figure 2*).

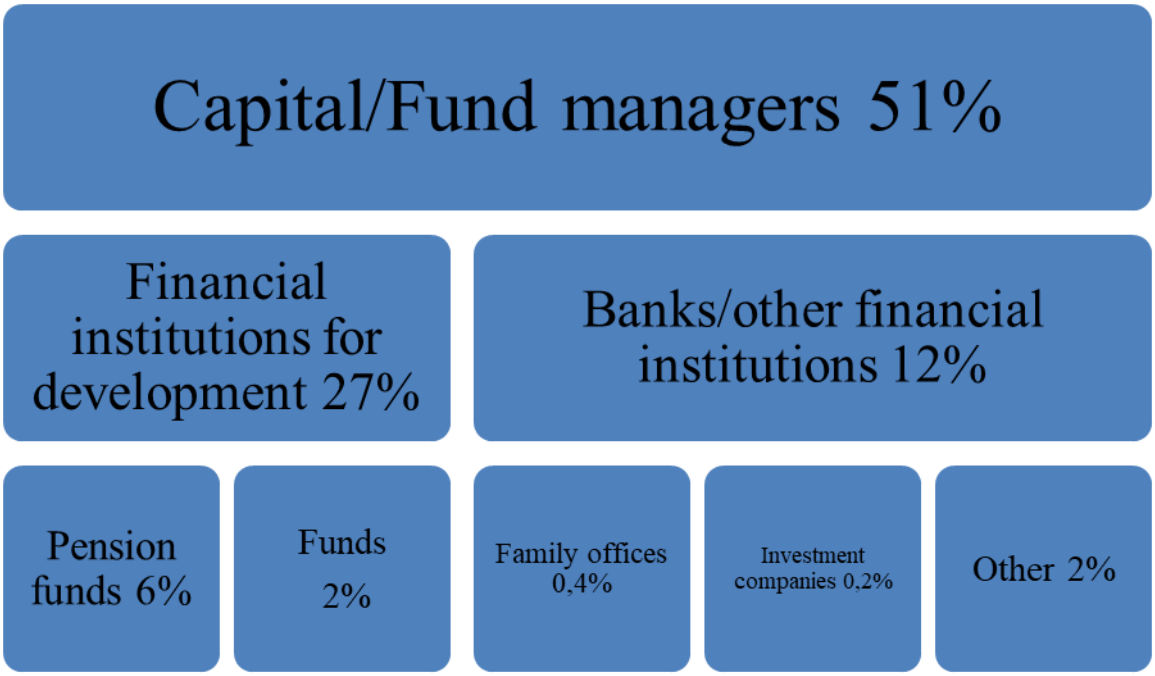

Figure 2: Assets under Management by Type of Organization
(Source: Impact Investment: The Invisible Heart of Markets, 2014; Sizing the Impact Investing Market, 2019)

According to a survey of 266 GIIN investors, the most promising areas of impact investment are distributed as follows (there were several possible answers, *see Table 2*).

Direction	Share
Food and agriculture	58%
Energy	47%
Health	42%
Financial service	40%
Education	40%
Construction	39%
Microfinance	31%
Water, sanitation and hygiene	24%
Information and communication technologies	24%
Infrastructure	19%
Production	18%
Forestry	16%
Arts and culture	7%
Others (commercial real estate, retail, community development, multi-industry distribution)	51%

Table 2: Distribution of Impact Investments by Direction
(Source: Insight into the Impact Investment Market, 2011; Annual Impact Investor Survey, 2019)

3.2. Barriers to Market Development

Among the common barriers to market development are:

- a strong view that impact investment returns are always below market value;
- lack of understanding of social impact, poor social impact measurement skills;
- using the image of a social / environmental enterprise for the purpose of unfair promotion ("greenwashing" or "impact washing").

Barriers to the development of the impact investment market have regional characteristics. Investors working in the US and Canada see a big problem in the lack of government support for the impact investment market. Investors in Western Europe point to the lack of quality data and research on social/environmental effects as a constraint on the development of impact investments. Investors operating in South-East Asian markets note the broadest set of barriers: lack of capital, low level of social and environmental impact measurement, and lack of qualified professionals (*Annual Impact Investor Survey, 2019*).

4. FEATURES OF IMPACT INVESTMENT DEVELOPMENT IN DIFFERENT COUNTRIES

In the UK, the state plays a crucial role in the development of impact investment, performing not only a regulatory, but also a stimulating function. In the USA, impact investments are not separated from the general block of responsible and sustainable investment (ESG investments). 25% of assets managed by professional market participants in the United States relate to sustainable responsible investment and impact investment. Impact investments in Australia are mainly directed to environmental projects (96% of the volume of impact investments in the country). In recent years, support for domestic green bonds and investment in green infrastructure from the pension sector has been increasing in Australia. In addition, the government is increasing its attention to green finance opportunities in the Asia-Pacific region. Recent research shows an active growth of the impact investment market in Canada (*Wiggan, 2018*). From 2015 to 2017, the impact investment market increased from $8.15 billion to $14.75 billion. Experts attribute this dynamic to an increase in demand for investments with social impact in all asset classes, including in public markets, where impact investments are becoming more prominent. Almost 90% of individuals who own large amounts of capital (high net worth individuals) are interested in impact investing. The German impact investment market is developed mainly by private organizations. Impact investments are supported and promoted by a small number of large funds, such as BMW Stiftung Herbert Quandt and BonVenture. However, the number of institutional investors is increasing. Germany's largest private banks, Deutsche Bank, HypoVereinsbank and DekaBank, are developing their own impact investment programs and products. The concentration of a significant amount of capital in China has led to a high demand for impact investments. In 2018, China ranked second in the world for issuing green bonds, demonstrating significant progress in this area over 3 years. Leading financial market players, including Ehong Capital, NPI Impact Fund, Xinh-Yu Fund, Avantage Ventures, SA Capital and Tsing Capital, have demonstrated the viability of impact investing, which has affected its popularity.

Table following on the enxt page

Country	Features of impact investment
UK	• investing funds from inactive accounts • the creation of specialized organizations • introduction of tax incentives • the access of social enterprises to the procurement
USA	• high diversity of market participants • certification of public good corporations • support for local communities • generally accepted reporting standards
Australia	• use of pension funds • priority for the development of green bonds
Canada	• development of intermediary platforms • targeted preparation for investment
Germany	• obligations of large companies on financial reporting at the EU level • development of social, ethical and green banks • creation of regional development banks
China	• rapid development of the Chinese green bond market • high degree of maturity of the impact investment market
Japan	• the largest social investors are pension funds • strategy for creating a comprehensive ecosystem of impact investments
South Korea	• special legal infrastructure for social entrepreneurs • active participation of the state in the development of the market • a wide range of support measures for social enterprises
India	• special solutions for expanding the impact investment market
Singapore	• sustainable and social exchanges • regional hub of impact investments
Russia	• the state as the largest social investor • stimulating the development of social entrepreneurship in the regions within the framework of corporate social responsibility programs • solving problems of individual social groups • a narrow set of tools to support • lack of universal social investors

Table 3: Features of Impact Investment Development in Different Countries (Source: Annual Impact Investor Survey, 2019; Castellas, Ormiston, Findlay, 2018; Wiggan, 2018)

The development of impact investment in Japan is associated with an unprecedented aging population, an economy led by sustainable corporations, and a developed non-profit sector that has accumulated extensive experience in disaster relief, elderly care, and health care. In Japan, sustainable investment increased 4-times from 2016 to 2018. In 2018, 18% of all assets under professional management accounted for sustainable investments. This made Japan the third largest center for sustainable investment after Europe and the United States. South Korea is characterized by the most active involvement of the state in the development of the impact investment market among Asian countries.

In 1997, the Asian crisis occurred, which caused hundreds of thousands of people in South Korea to lose their jobs. As a result, an active discussion was launched on the idea of borrowing the European system of social enterprises, which would solve the issue of employment and the provision of quality services at the expense of the third sector. India has a huge potential for developing the impact investment market due to its high population and unmet needs for socio-economic services for a large proportion of the population, mainly in rural areas. Reduced public investment in priority sectors such as primary education, health, housing, water, hygiene, etc.has contributed to the growth of the entrepreneurial social sector. Singapore's location and reputation as the financial and intellectual center of the Asian region have made it important for the development of impact investment in Asia. Despite the fact that Singapore does not attract a large amount of impact investment, it is home to a large number of regional investment companies operating in Asia. Singapore is home to the Asian Venture Philanthropy Association (AVPN), which is a significant platform for promoting and improving the effectiveness of social investment in Asia. Russia also has a number of impact investors who choose different models, directions and tools for investment (*see Table 3*).

5. CONCLUSION

Impact investment as a technology for financing sustainable development projects, which brings a lot of innovations and creates incredible value for businesses, investors and states, has already received international recognition and is actively developing at the present time. Over the past few years alone, the market for sustainable investment has grown significantly and today 23 trillion USD of global resources are invested in accordance with environmental, social and management standards.

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TRENDS OF THE ATTRACTIVENESS OF AZERBAIJAN TOURISTS IN GEORGIA

Nino Abesadze
Associate Professor at I. Javakhishvili Tbilisi State University, Georgia
nino.abesadze@tsu.ge

Otar Abesadze
Associate Professor at Georgian National University, Georgia
o.abesadze@gmail.com

Lala Amanova
Associate Professor at Azerbaijan State University of Economics(UNEC), Azerbaijan
lala.amanova@gmail.com

ABSTRACT
It is the fact that the geographical structure of tourism in Georgia is such that neighboring countries occupy the leading positions in the top ten. It is noteworthy that there is a growing trend of tourist flows from Azerbaijan, which can make a significant contribution to the further development of economic relations between Georgia and Azerbaijan. Consequently, quantitative analysis of tourist flows from these countries is urgent and necessary. Since at the modern stage of economic development, tourism is an important source of development and economic growth for Georgia. Methods of statistical observation, grouping and analysis were used in the research process. The computer program SPSS was used to process and analyze the results of the study. Conclusion: There is a tendency to increase tourist flows from Azerbaijan to Georgia; Most visitors come to Georgia for leisure; The main places to visit are Tbilisi Batumi, Sighnaghi, Borjomi, Bakuriani, etc.
Keywords: *Visitor, Analysis, Trend, Attractive, Statistics*

1. INTRODUCTION

Today, the globalization has become a crucial issue in the everyday political, economic, social and cultural life. From the strategic point of view, it is very important for Georgia to enhance the world trade - economic, financial and other kinds of relations, especially when it is in the foreign interests of the country to share the advanced European values and experiences and join the European Union (Quliyev A.,Abesadze, Abesadze, O., Amanova, L.,2019). Azerbaijan-Georgia relations are quite multifaceted, it is characterized by strategy and positive dynamics. Such relations are important not only for these two countries, but for the whole region. Clearly, this also applies to the flow of tourist between the two countries. It is a fact that at the modern stage of economic development, tourism is an important source of development and economic growth for Georgia. Therefore, domestic tourism contributes to the stability of the national economy, development and unity of the economy sectors which are traditional for the country, have enough resources and in turn, contribute to the overall stability of the economy (Paresashvili, N., Okruashvili, N., Chitaladze, Q., 2017). Georgia is a country very rich in natural beauty, with an extensive history and culture. Georgia has also many natural heritage products, such as the mountain resorts such as Borjomi, Abastumani, Tskaltubo, Sairme and so on. People often visit these places not only for the unique nature, but for the exceptional air and water quality, which some believe can cure different deceases. Another popular destination is the sea resort Ureki with its course dark sands with magnetic properties which are also said to treat health problems. The country also has winter resorts such as Gudauri and Bakuriani, with abundant annual snowfalls, which are popular destination or tourists and skiers, as well as

natural gorges and delightful waterfalls, attracting local and international trekkers and nature-lovers (Abesadze,N., Kinkladze, R., Paresashvili N.,2019). However, this does not mean that all challenges are overcome in this regard. The challenges facing tourism are certainly those that are part of the country's economic policy. Effective policy requires the development of a package of correct recommendations based on adequate assessments, which should be implemented on the basis of the relevant information base. We believe that it is important to pay attention to such regions where the tourist flows are growing constantly and the supply is overturned by demand (Paresashvili, N., Chitaladze, K., 2019). So it is important to estimate events in a tourism field, detect trends and determine statistical rules. For this purpose we need objective information that requires perfect adaptation of international techniques of statistical accounting of tourism and practical implementation of these techniques on-site (Abesadze,N., Mindorashvili, M., Paresashvili, n., 2017). The database of tourism statistics in Georgia is becoming more and more complete, which creates the conditions for statistical analysis of tourism processes in the country and to determine the quantitative characteristics of tourism. As a result, development trends and regularities will be identified, and relevant reasoned conclusions will be drawn.

1.1. The purpose and objectives of the study

The aim of the study is to provide a statistical analysis of the growth of tourist flows from Azerbaijan and the level of attractiveness of the country against the background of the main trends in terms of tourism in Azerbaijan, taking into account all the factors that affect the development of tourism in Georgia. Accordingly, the following tasks were set and solved:

- The main trends in tourism development are detection;
- Defining the geographical structure of Azerbaijan;
- Identify the growing trends of international tourism in Georgia from Azerbaijan to Georgia.

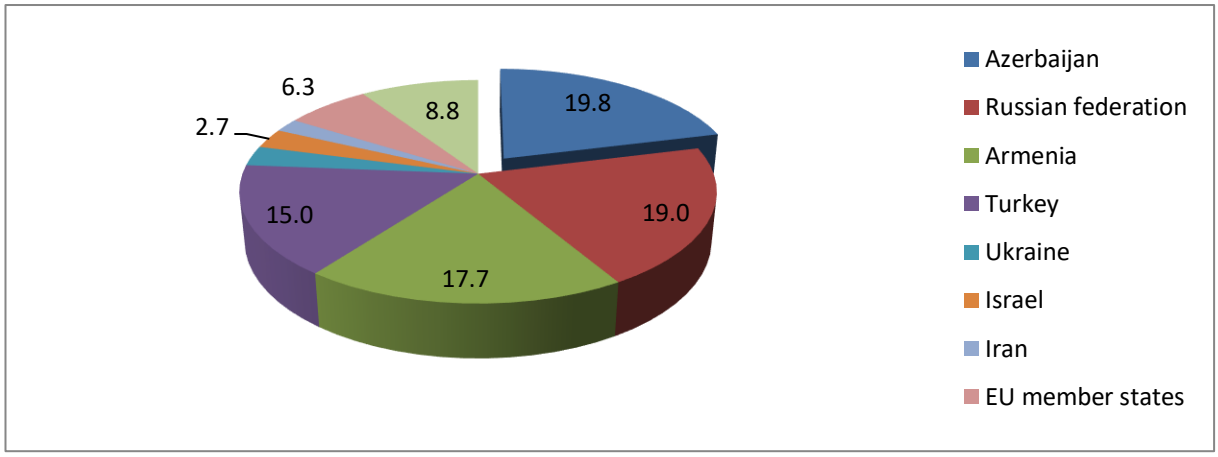
2. RESEARCH METHODS

Methods of data observation, grouping, and analysis were used in the research process. The generalized indicators were calculated based on the mean values, variation, and time analyzes.

3. RESULTS

The fact is that over the years, both segments of the tourism market have not been fully accounted for: international and domestic tourism. Although international tourism is wider in scope and area than domestic tourism, the latter, along with the development of international tourism, is a significant factor in the growth of the country's tourism potential and contributes to the growth of tourism revenues. In many countries, domestic tourism is much more important than international tourism. So, for example, in Canada, 77.1% of tourism revenue comes from household spending on domestic tourism, which was $ 54.6 billion in 2017. In other words, revenues from domestic tourism were three times more than revenues from international tourism (O. Abesadze, 2018). The National Statistics Office has been conducting permanent research in the field of tourism since 2015. Previously, tourism statistics were mainly based on data from the Ministry of Internal Affairs, the National Tourism Administration and expert assessments. It is true that the timeline for the results of the Georgian statistical office survey covers only a few levels, but it is still possible to make some calculations and draw appropriate conclusions. According to the results of the 2019 survey of the National Statistics Office, the number of visits amounted to 643.8 thousand, which is 7.2% more than the same period last year. The highest number of visits was from Azerbaijan (19.8%), Russia (19.0%) and Armenia (17.7%). The lowest number of visits was from Israel, Ukraine and Iran, the share of which was 2.7%, 2, respectively. 7% and 1.8% (see Figure 1)

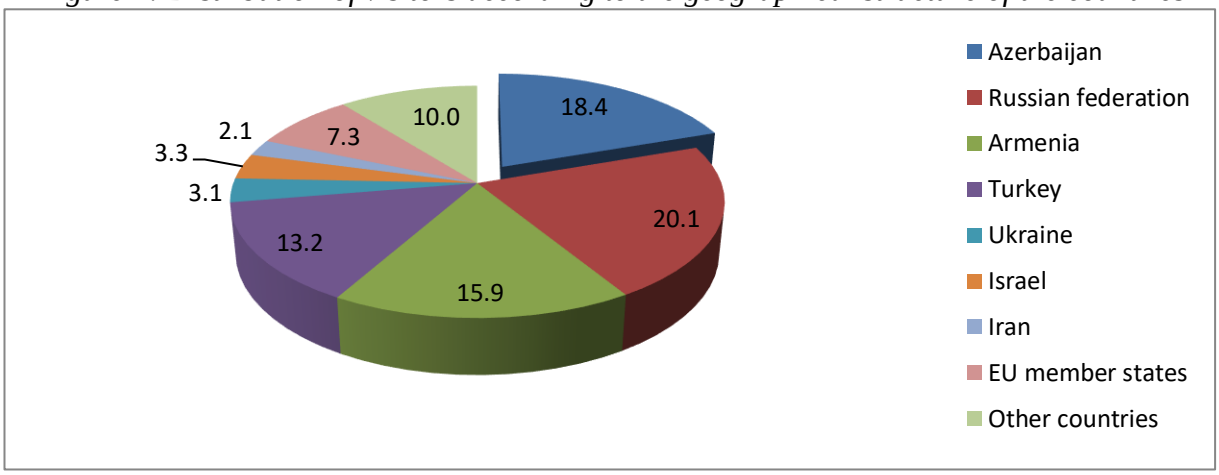
Figure 1: Distribution of the number of visits by countries of citizenship in 2019



Source: National Statistics Office

According to the number of visitors, three countries remain unchanged, but in recent years their place in this ranking has changed, and according to 2019 data, most visitors came to Georgia from Russia. Accordingly, its share in the category of international visitors is the highest and is 20.1% (See Figure 2). Azerbaijan and Armenia are traditionally in the top three, with 18.4% and 15.9%, respectively.

Figure 2: Distribution of visitors according to the geographical structure of the countries

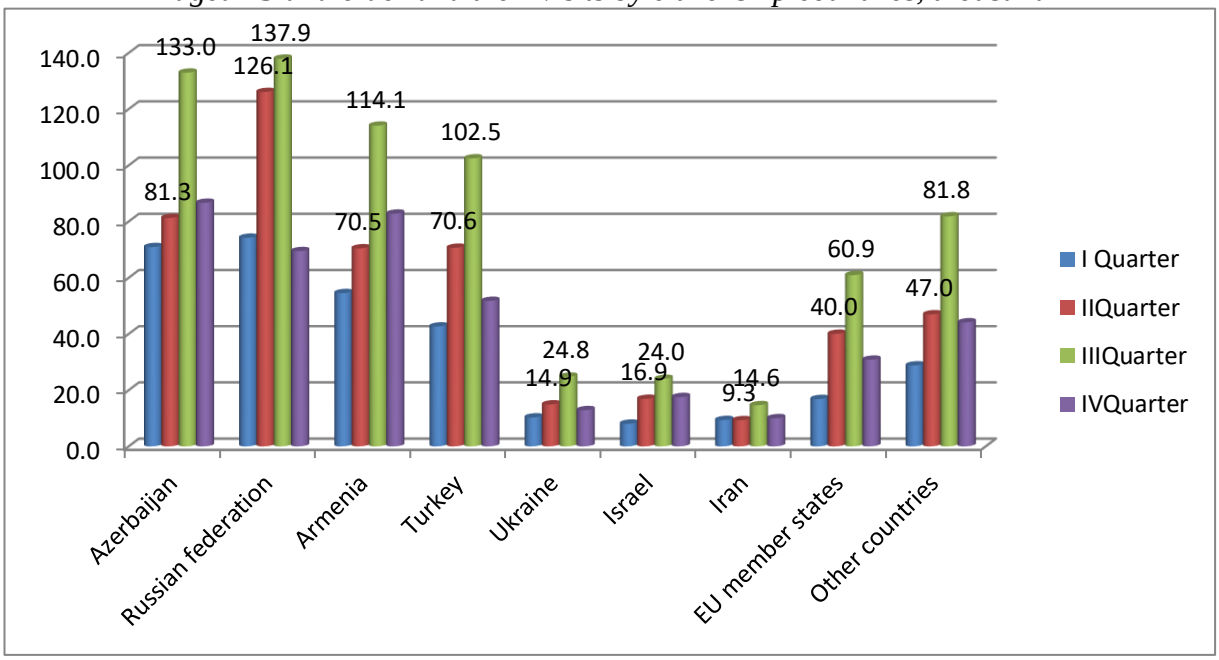


Source: National Statistics Office

According to the analysis of the geographical structure of international tourism, for all countries, including Azerbaijan, as expected, 2019 was the most active third quarter, followed by the fourth quarter. The beginning of the year Georgia is less attractive for international visitors from Azerbaijan.

Figure following on the next page

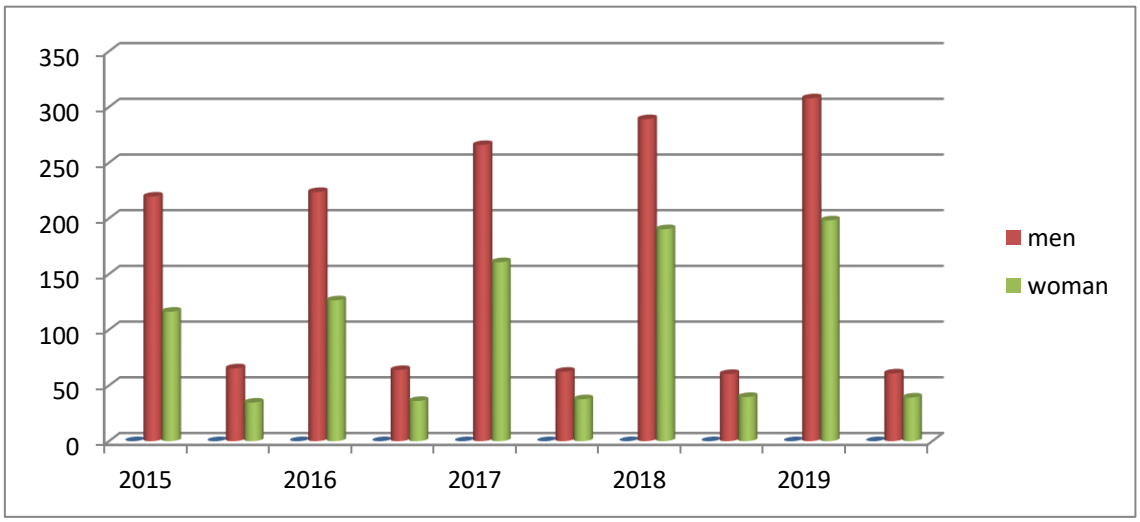
Figure 3: Distribution of the average monthly number of non-resident visitors of Georgia aged 15 and older and their visits by citizenship countries, thousand



Source: National Statistics Office

The highest number of international visitors, 221.8 thousand, belongs to the age group of 31-50 years, which is 46% of the total number of visitors, the group of 15-30 year olds includes 23.8% of visitors, and the smallest number of visitors over 71 years old. As of 2018, it amounted to 8.9 thousand. This represents only 1.9% of the total number of visitors. It can be said that the age structure of the visitors in dynamics has not changed and only minor differences between the indicators are observed according to the years. The indicators of the sexual structure of the visitors are very interesting. As the data show, men mostly visit Georgia (Akhvlediani, N., .Virsaladze, N., Oniani I. 2018). Among the visitors 60.8% are men and 39.2% are women. As with the age structure, no significant changes have been observed in the sexual structure since 2014. According to all-year data, the share of men is in the range of 60% and is characterized by slight changes from 60 to 2-3% per year.

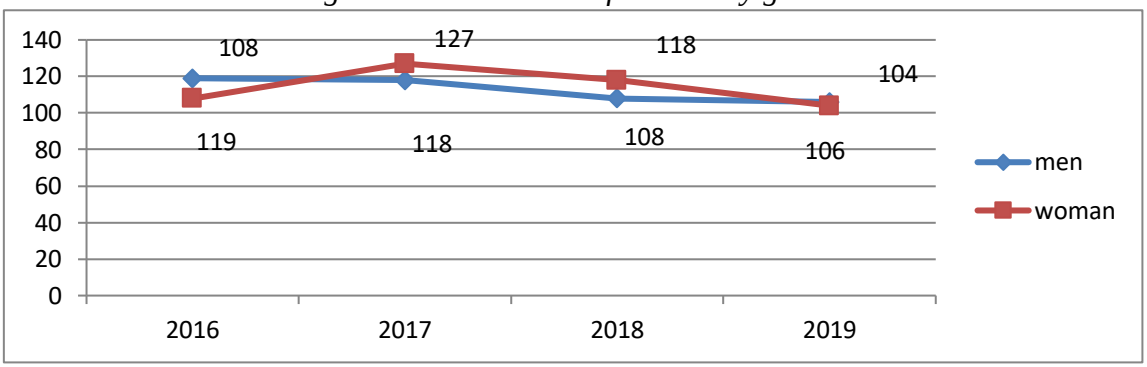
Figure 4: Distribution of visitors by gender (2019)



Source: National Statistics Office

The data show that the growth rates of visitors by both sexes are characterized by the same trend in dynamics. In 2015-2017, the growth rate of female visitors and male visitors increased, by 8% and 27% for men, and 19% and 18% for women, respectively, and from 2018, the rate of increase in visitors for both sexes decreased.

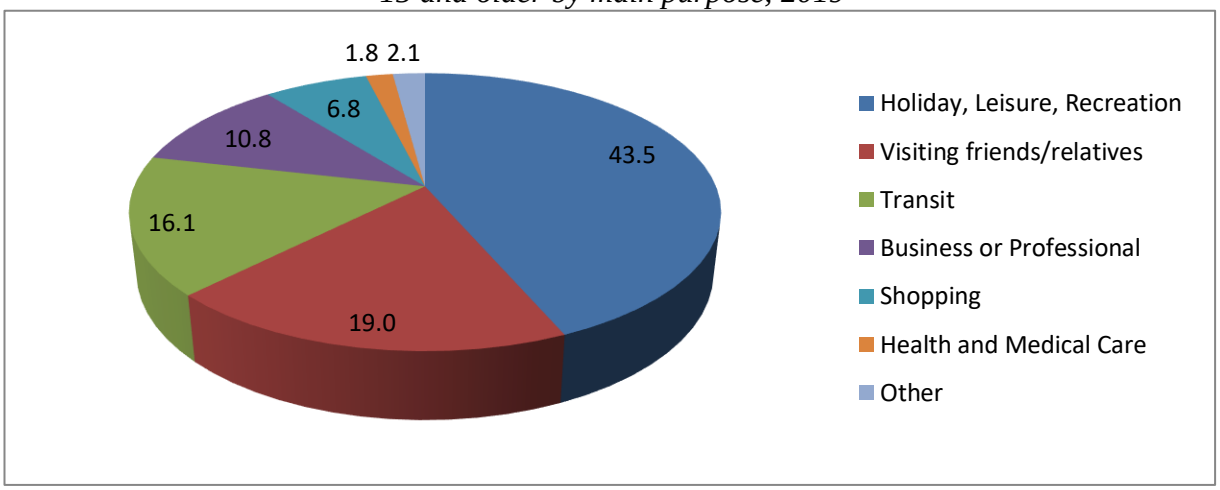
Figure 5: Distribution of visitors by gender



Source: National Statistics Office

The results of the study confirm that the largest number of 280 thousand visits to Georgia (43.5% of the total visits) are for recreation, 124.9 (or 19.0%) visits to friends / relatives, and 11.3 (2.2%) for treatment. And for the purpose of healing. Our country has been used as a transit point for 1.8% of total visits (see Figure 6).

Figure 6: Distribution of monthly average number of visits made by inbound visitors of age 15 and older by main purpose, 2019



Source: National Statistics Office

This trend has been evident in recent years, but it is noteworthy that the number of visitors coming in for recreation and entertainment and their share in the system has been increasing systematically. Apparently, the motivation to visit relatives and loved ones for shopping has decreased (See Table 1).

Table following on the next page

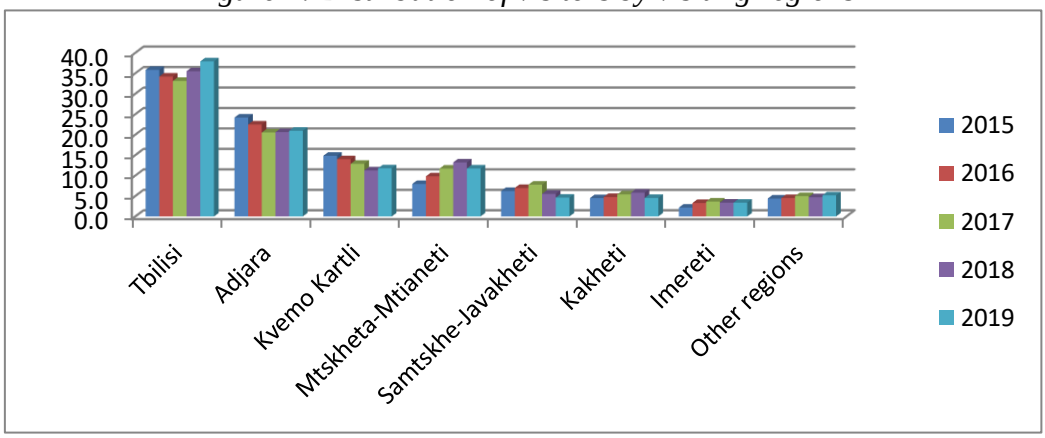
Table 1: Distribution of share of visits made by inbound visitors of age 15 and older by main purpose (2015-2019)

	2015	2016	2017	2018	2019
Holiday, Leisure, Recreation	31.4	33.9	37.7	42.7	43.5
Visiting friends/relatives	23.5	23.2	22.2	20.3	19.0
Transit	18.9	18.2	18.1	16.5	16.1
Business or Professional	10.8	10.1	8.2	8.7	10.8
Shopping	9.5	9.4	9.5	6.9	6.8
Health and Medical Care	4.3	3.8	2.7	2.7	1.8
Other	1.6	1.3	1.4	2.2	2.1

Source: National Statistics Office

I wonder what the attractiveness of the regions is? Tbilisi, Adjara, Kvemo Kartli and Mtskheta Mtianeti are the most attractive for Azerbaijani tourists, as well as for other international visitors to Georgia in general.

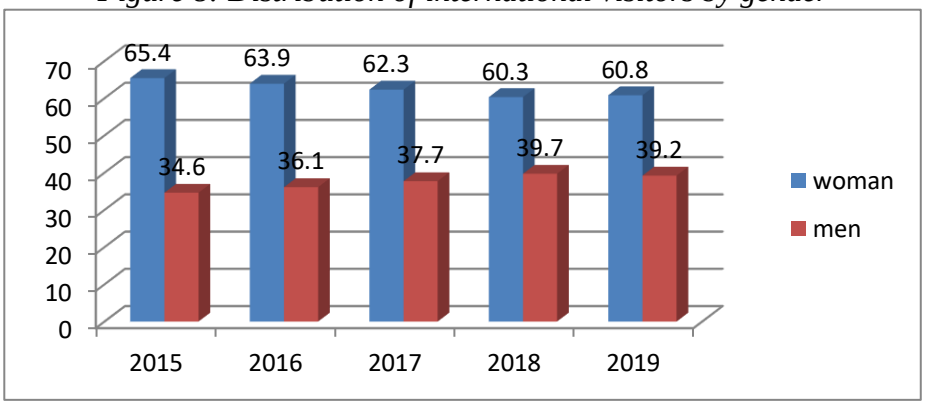
Figure 7: Distribution of visitors by visiting regions



Source: National Statistics Office

According to 2019 data, 37.9% of visitors visited Tbilisi, 21% Adjara, 13.2% Mtskheta-Mtianeti, 11.7% Kvemo Kartli, 11.8% Kakheti, 4.5%, etc. As studies represent, women are traditionally more interested in visiting Georgia than men. The share of women in visitors starting in 2015 ranges from 60.8% to 65.4%. If we extend this trend to the geographical structure of visitors, then it will turn out that Georgia is more attractive for Azerbaijani women as well.

Figure 8: Distribution of international visitors by gender



Source: National Statistics Office

It is interesting to determine in details the attractiveness and to determine the rated classification of places to visit according to the individual districts. For the analysis, we conducted the results of the 2016-2017 survey "Statistical Survey of Foreign Tourist Expenses of Foreign Visitors" conducted by and the Department of Economic and Social Statistics the National Statistics Office. In this study, an interesting picture was revealed as a result of the analysis of the visit to the tourist places, taking into account the population of the tourists. For example, it turned out that 58,66% of Azerbaijani visitors to the study were in Tbilisi. Most of the visitors to Bakuriani - 31% - were from Russia, 27% - visitors from Azerbaijan; 30% of visitors to Batumi were Azerbaijanis, 29.7% were Ukrainians, 16.8% were Russians and 9.9% were Israelis; 27.7% of visitors to Borjomi were citizens of Central Asia (Uzbekistan and Kazakhstan), and 23.6% were citizens of Azerbaijan; 64% of visitors to Bolnisi and Marneuli turned out to be residents of Azerbaijan; 38% of Azerbaijani visitors were in Gudauri; 12% of the respondents were in Kobuleti, 42.8% in Armenia and 30.4% in Russia; Of the surveyed visitors, 35.2% were from Ukraine, 27.3% from Russia, 20% from Azerbaijan and others (Abesadze N., Mindorashvili M., Paresashvili N., 2018. 45-47). It should be noted that in parallel with the growth of Georgia's attractiveness, there are problems with improving infrastructure. Undoubtedly, the number of hotels in Georgia has increased, but as studies show, visitors point out that there is still a problem with the inappropriate level and quantity of accommodation, which they believe does not meet the relevant standards. Unsurprisingly, one of the problems is the improper equipment and quality of food facilities, especially in popular tourist areas and near pedestrian paths, less or not fully sanitary facilities, etc (O. Abesadze 2018. 23-27).

4. CONCLUSION

- There is a growing trend of tourist flows from Azerbaijan;
- Most visitors come to Georgia for leisure;
- The main places to visit are Tbilisi Batumi, Sighnaghi, Borjomi and Bakuriani;
- The need for diversity and infrastructural improvement of the tourism product is still relevant, etc.

Despite the above-mentioned defects, international and domestic tourism is developing in Kakheti region and its importance for the revival and development of the current Georgian economy is gradually increasing, as it is distinguished by its unique tourist potential and diversity in the world as Georgia is considered among 200 global eco-regions identified by the World Wildlife Fund (WWF) (Paresashvili, N., 2014).

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OIL PRICES AND MACROECONOMIC INDICATORS OF OIL EXPORTING AND OIL IMPORTING COUNTRIES

Sugra Ingilab Humbatova
Associate professor at Department of Economy and Management,
International Center for Graduate Education,
Department of World Economy, Baku Engineering University (BEU),
Hasan Aliyev str., 120. Khirdalan, AZ–0102, Absheron, Azerbaijan,
Azerbaijan State University of Economics (UNEC),
Istiqlaliyyat Str. 6, Baku, AZ–1001, Azerbaijan
sugra_humbatova@unec.edu.az; ms.sugra@mail.ru

Manuela Tvaronaviciene
Professor of economics at Vilnius Gediminas Technical University,
The General Jonas Zemaitis Military Academy of Lithuania
Saulėtekio al. 11, LT–10223 Vilnius, Lithuania
manuela.tvaronaviciene@vgtu.lt

Natig Gadim–Oglu Hajiyev
Senior lecturer at Department of "Regulation of economy",
Azerbaijan State University of Economics (UNEC)
Istiqlaliyyat Str. 6, Baku, AZ–1001, Azerbaijan
n.qadjiev2012@yandex.ru

ABSTRACT
This article describes the research of interconnection based on macro-economic indices and sharp fluctuations in oil prices. The main goal of the author is a research of empirical influence of oil prices fluctuations on countries economies countries export oil (Azerbaijan, Russia, Kazakhstan) and countries import oil (Estonia, Latvia. Lithuania). Oil plays a key role in countries economies who export oil and oil products. This article analyzes the data of Azerbaijan, Russia, Kazakhstan, Estonia, Latvia and Lithuania in the period from 2000 to 2018 with a help of ARDL models.
Keywords: *World oil prices, GDP, GNI, Revenues from oil sales, ARDL*

1. INTRODUCTION

Oil factors affect political and economic processes. In turn, these affect the price level, inflation, economic revival, finance and stock market and economic growth as a whole. Meanwhile, it affects the formation of alternative energy resources and the development of these resources. The development of economics as well as oil and gas infrastructure of oil-exporting countries has closely tied up with the prices of raw materials, either in external or internal market. Price fluctuations directly affect the market. It either increases or reduces competitiveness. Oil price dynamics might generate hesitations, especially in energy and oil crises. This has happened several times in countries where a market structure has developed. Oil prices affect both oil-exporters and importers. The oil price affects the producers and the level of production expenditures. Some countries' economy are highly reliant on oil and oil products. That is why research on oil and its role in the economy is very important. Oil factors affect political and economic processes. In turn, these affect the price level, inflation, economic revival, finance and stock market and economic growth as a whole. Meanwhile, it affects the formation of alternative energy resources and the development of these resources. Azerbaıjan, Kazakhstan and Russıan are an oil-exporting countries which is why their macroeconomic indicators,

especially GDP, heavily depends on the oil factor. Oil is different from other commodities for its features and lack of renewability. Some countries hope to importing oil because oil exporters are not many. Azerbaıjan, Kazakhstan and Russıan economy largely depends on factors that occur in the world oil market because it is also an oil exporter. Energy policy in the Baltic and elsewhere is characterized by considerable uncertainty. The prices for oil and oil products, natural gas, and electric power production from these fossil fuels can vary considerably over time (North, 2008). The three countries forming the Baltic States – Estonia, Latvia and Lithuania – have been chosen due to their geographic proximity and their shared history (Weyers, 2013).

2. LITERATURE REVIEW

Ghalayini (2011), studying the fluctuations in oil prices, concluded that price shocks affect macroeconomic indicators in different ways. Other economists, such as Hamilton (1983), Bruno, and Sachs (1982), studied the effects of oil prices on economic growth, financial instability, and inflation in Britain in the 1950s and 1979s, and concluded that these variables were intertwined. closely related. Rising oil prices lead to higher prices in the economy, lower employment and productivity (Dornbusch, 2001). The effect of prices on macroeconomic indicators was widely studied by Hamilton. Hamilton was one of the first scientists to show the importance of changing energy prices for the US economy. He (Hamilton, 2008) proved that an increase in the price of oil is more important than its fall. Hamilton (2009) studied the American economy in 1948–1980 using the Sims method (1990) and the VAR method, and concluded that oil prices and GDP in the United States were strongly correlated. Hamilton and other researchers (Gisser and Goodwin, 1986; Mork, 1989; Lee et al., 1995; Hamilton, 1996; Hamilton, 2003) concluded that oil prices had a negative impact on US GDP. In addition, the impact of oil prices on exchange rates has been the subject of research. Thus, some researchers have suggested a causal relationship between oil prices and the exchange rate (Amano and Van 1998; Akram, 2004; Benassy–Quere, 2005; Lizardo and Mollick, 2010). Others (Brown and Phillips, 1986; Cooper, 1994) have argued the opposite: the exchange rate affects oil prices. Interest in oil price fluctuations and their role in the macroeconomy was revived in the early 2000s due to the sharp rise in oil prices and the immediate fall in 2008 (caused by the Lehman crisis) (Hamilton 2009; Yoshino and Taghizadeh h Hesary,2016). A study by Peersman and Van Robays (2012) and Tagizadeh − Hesary and others (2016) identified economies that won and lost after the recent shock in oil prices. Aydogan and others (2017) assessed the relationship between oil prices and stock markets and showed that the correlation between them varied depending on whether the country was an oil exporter or an oil importer. As a rule, changes in oil prices have a significant impact on the production costs of oil importers and, consequently, the level of prices. In energy–exporting countries, however, changes in oil prices mainly affect revenues from energy exports and state budget revenues. However, it is widely acknowledged that volatility in energy prices is not only an important cause of macroeconomic fluctuations, but also affects the fiscal and monetary policies of different countries.

3. MATERIALS, METHOD AND METHODOLOGY

3.1. Data

Statistical data encompasses 2000−2018. Data have been taken from Statistics Committee of the Republic of Azerbaijan, Ministry of National Economy of the Republic of Kazakhstan Statistics committee, Federal State Statistics Service Russia and the statistical office of the European Union, Eurostat (Latvia, Lithuania and Estoina).

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Figure 1: Dynamics of indicators

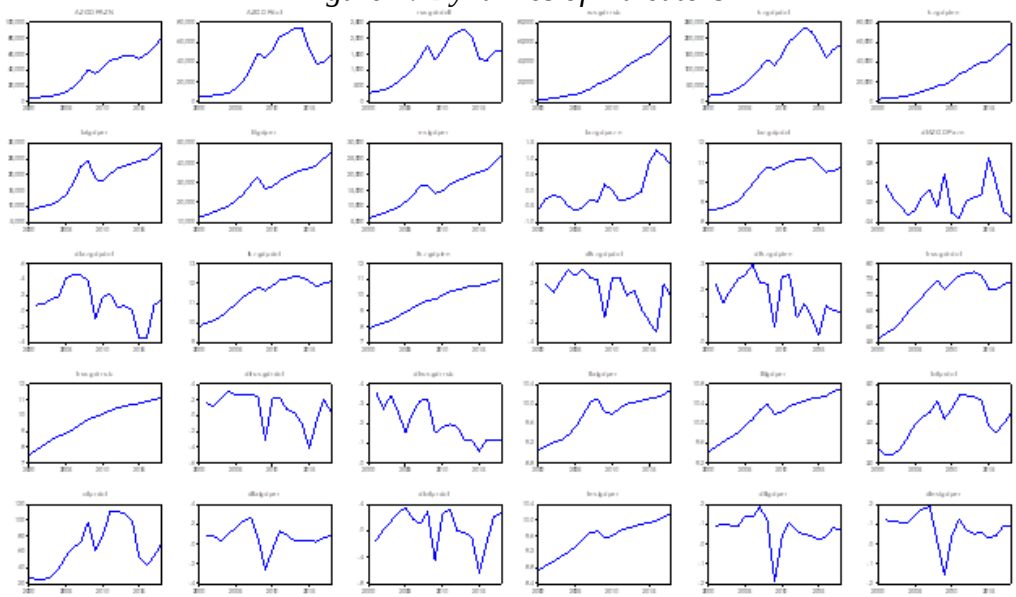

Table 1: Descriptive Analysis

	Azgdpazn	Azgdpdol	Rusgdrdol	Rusgdrrub	Kzgdpdol	Kzgdpten	Estgdper	Latgdper	Litgdper	Oilprdol
Mean	36782.24	37388.35	1289.904	26123.11	121333.4	23218.02	15416.47	18902.41	28305.51	64.61579
Median	40137.20	40867.90	1363.710	20628.50	133440.7	17007.60	16398.74	20218.73	29040.66	61.67000
Maximum	80092.00	75234.70	2289.240	68844.00	236633.3	59613.70	26035.85	29151.03	45264.38	111.6700
Minimum	4718.100	5272.800	278.0750	1786.800	18292.40	2599.900	6179.770	8605.600	12491.31	24.44000
Std. Dev.	24773.87	24745.23	656.2095	21729.18	73254.88	18372.45	5821.529	6494.131	9968.121	29.96962
Skewness	0.021161	0.024775	-0.164434	0.527741	-0.060179	0.529056	-0.003597	-0.285305	-0.103542	0.252672
Kurtosis	1.650566	1.674696	1.829202	1.965851	1.654396	1.991392	2.023762	1.757801	1.885220	1.824586
Jarque-Bera	1.443021	1.392452	1.170814	1.728609	1.444899	1.691705	0.754532	1.479350	1.017780	1.295935
Probability	0.486018	0.498463	0.556879	0.421344	0.485561	0.429191	0.685734	0.477269	0.601162	0.523108
Sum	698862.6	710378.6	24508.18	496339.0	2305334.	441142.4	292913.0	359145.8	537804.6	1227.700
Sum Sq. Dev.	1.10E+10	1.10E+10	7750996.	8.50E+09	9.66E+10	6.08E+09	6.10E+08	7.59E+08	1.79E+09	16167.20
Observations	19	19	19	19	19	19	19	19	19	19

3.2. Methodology

The methodology used in this study is based on econometric methods of time series. In this case, we are talking about two important steps of econometric methodology. The first step involves creating an integration sequence of the variables included in the model, using the Augmented Dickey − Fuller (ADF), Phillips − Perron (PP) and Kwiatkowski − Phillips − Schmidt − Shin (KPSS) tests. The purpose of using the three single root method is to compensate for the low power of these tests. They are used to ensure the reliability of the results, which may potentially affect the limited size of the data. Single root test results indicate that the variables are integrated into zero (I (0)) or unit (I (1)). The second step involves the application of joint integration methods. More specifically, it is necessary to analyze the relationship between the variables used in the short and long term. Johansen's multidimensional Cointegration approach or the Auto Regressive Distributed Lags model and the Pesaran and Shin (1999) cointegration boundary test will be used. ARDL models will be used to test for long–term relationships between the studied variables and a boundary test for a cointegration approach will be used ARDL Bounds Testing Cointegration.

$$AZGDP_{AZN_t} = f(OILPR_{DOL_t}) \quad (1)$$

$$AZGDP_{\mathrm{DOL}_t} = f(OILPR_{DOL_t}) \quad (2)$$

$$\mathrm{RUS}GDP_{\mathrm{RUB}_t} = f(OILPR_{DOL_t}) \quad (3)$$

$$\mathrm{RUS}GDP_{\mathrm{DOL}_t} = f(OILPR_{DOL_t}) \quad (4)$$

$$\mathrm{KZ}GDP_{\mathrm{TEN}_t} = f(OILPR_{DOL_t}) \quad (5)$$

$$\mathrm{KZ}GDP_{\mathrm{DOL}_t} = f(OILPR_{DOL_t}) \quad (6)$$

$$\mathrm{LAT}GDP_{\mathrm{ER}_t} = f(OILPR_{DOL_t}) \quad (7)$$

$$\mathrm{LIT}GDP_{\mathrm{ER}_t} = f(OILPR_{DOL_t}) \quad (8)$$

$$EST GDP_{\mathrm{ER}_t} = f(OILPR_{DOL_t}) \quad (9)$$

$$Log_e\left(AZGDP_{AZN_t}\right) = a_0 + \sum log_e\left(a_1 OILPR_{DOL_t}\right) \quad (10)$$

$$Log_e\left(AZGDP_{\mathrm{DOL}_t}\right) = a_0 + \sum log_e\left(a_1 OILPR_{DOL_t}\right) \quad (11)$$

$$Log_e\left(\mathrm{RUS}GDP_{\mathrm{RUB}_t}\right) = a_0 + \sum log_e\left(a_1 OILPR_{DOL_t}\right) \quad (12)$$

$$Log_e\left(\mathrm{RUS}GDP_{\mathrm{DOL}_t}\right) = a_0 + \sum log_e\left(a_1 OILPR_{DOL_t}\right) \quad (13)$$

$$Log_e\left(\mathrm{KZ}GDP_{\mathrm{TEN}_t}\right) = a_0 + \sum log_e\left(a_1 OILPR_{DOL_t}\right) \quad (14)$$

$$Log_e\left(\mathrm{KZ}GDP_{\mathrm{DOL}_t}\right) = a_0 + \sum log_e\left(a_1 OILPR_{DOL_t}\right) \quad (15)$$

$$Log_e\left(\mathrm{LAT}GDP_{\mathrm{ER}_t}\right) = a_0 + \sum log_e\left(a_1 OILPR_{DOL_t}\right) \quad (16)$$

$$Log_e\left(\mathrm{LIT}GDP_{\mathrm{ER}_t}\right) = a_0 + \sum log_e\left(a_1 OILPR_{DOL_t}\right) \quad (17)$$

$$Log_e\left(EST GDP_{\mathrm{ER}_t}\right) = a_0 + \sum log_e\left(a_1 OILPR_{DOL_t}\right) \quad (18)$$

$$LAZGDP_{AZN_t} = a_0 + \alpha_1 LOILPR_{DOL_t} + \varepsilon_t \quad (19)$$

$$LAZGDP_{\mathrm{DOL}_t} = a_0 + \alpha_1 LOILPR_{DOL_t} + \varepsilon_t \quad (20)$$

$$\mathrm{LRUS}GDP_{\mathrm{RUB}_t} = a_0 + \alpha_1 LOILPR_{DOL_t} + \varepsilon_t \quad (21)$$

$$\mathrm{LRUS}GDP_{\mathrm{DOL}_t} = a_0 + \alpha_1 LOILPR_{DOL_t} + \varepsilon_t \quad (22)$$

$$\mathrm{LKZ}GDP_{\mathrm{TEN}_t} = a_0 + \alpha_1 LOILPR_{DOL_t} + \varepsilon_t \quad (23)$$

$$\mathrm{LKZ}GDP_{\mathrm{DOL}_t} = a_0 + \alpha_1 LOILPR_{DOL_t} + \varepsilon_t \quad (24)$$

$$L\mathrm{LAT}GDP_{\mathrm{ER}_t} = a_0 + \alpha_1 LOILPR_{DOL_t} + \varepsilon_t \quad (25)$$

$$L\mathrm{LIT}GDP_{\mathrm{ER}_t} = a_0 + \alpha_1 LOILPR_{DOL_t} + \varepsilon_t \quad (26)$$

$$LEST GDP_{\mathrm{ER}_t} = a_0 + \alpha_1 LOILPR_{DOL_t} + \varepsilon_t \quad (27)$$

3.3. Metod: ARDL Bounds Testing Cointegration

Our study is based on ARDL models and boundary testing for the cointegration approach developed by Pesaran and Shin (1999) and Pesaran et al (2001). These models have recently been widely used to test the existence of long–term relationships between various macroeconomic variables. The main advantage of this approach is that it does not require the integration of variables. This requires zero time sequences to be integrated or one or part of them to be integrated. The implementation of the ARDL method consists of three stages. In the first stage, we check the availability of single root tests from ADF (Dickey and Fuller 1979), PP (Phillips and Perron 1988) and KPSS (Kwiatkowski et al., 1991). We use three tests to check the reliability of the results. In the second step, we evaluate the following Unlimited Error Correction Model (UECM) given by equations (37) – (45). Unrestricted ECM: the impact of variable oil exports and oil prices on the growth of passenger car imports. Laq p and q are selected based on the Akaike (AIC) information criterion. Breusch − Godfrey Serial Correlation LM, Jarque − Bera Normality, ARCH and Breusch − Pagan − Godfrey tests should be used to test the evaluated models. In addition, we test the following hypotheses for each model within

the test: $H_0: \theta_0 = \theta_1 = 0$ and vice versa $H_0: \theta_0 \neq \theta_1 \neq 0$ The rejection of the zero hypothesis implies the existence of a cointegration relationship between the variables. Wald developed a decision–making procedure based on the F − test. F − critical value for test Pesaran et al. (2001) and small and recent specimens were completed by Narayan (2005). There are two critical values: one is low and the other is high. The critical value is determined by considering that the whole sequence is stationary (I (0)). The critical value is determined by considering that the variables are integrated in the first order (I (1)). Their values depend on the number of observations, the number of free variables, and the probability levels. The hypothesis of zero is rejected when the value of the statistic F − exceeds the upper limit, the critical value. In this case, the variables are combined. However, when the statistical value F − is lower than the critical value, we accept the hypothesis of zero. We understand that the variables are not cointegration. Finally, when the F − statistic is located between both critical values, it is not possible to draw conclusions.

$$\Delta LAZGDP_{AZN_t} = a_0 + \sum_{i=1}^{p} a_i \, \Delta LAZGDP_{AZN_{t-i}} + \sum_{j=1}^{q} a_j \, \Delta LOILPR_{DOL_{t-1}} + \theta_0 LAZGDP_{AZN_{t-1}} + \theta_1 LOILPR_{DOL_{t-1}} + \varepsilon_t \quad (28)$$

$$\Delta LAZGDP_{AZN_t} = a_0 + \sum_{i=1}^{p} a_i \, \Delta LAZGDP_{AZN_{t-i}} + \sum_{j=1}^{q} a_j \, \Delta LOILPR_{DOL_{t-1}} + \theta_0 LAZGDP_{AZN_{t-1}} + \theta_1 LOILPR_{DOL_{t-1}} + \varepsilon_t \quad (29)$$

$$\Delta LAZGDP_{\mathrm{DOL}_t} = a_0 + \sum_{i=1}^{p} a_i \, \Delta LAZGDP_{\mathrm{DOL}_{t-i}} + \sum_{j=1}^{q} a_j \, \Delta LOILPR_{DOL_{t-1}} + \theta_0 LAZGDP_{\mathrm{DOL}_{t-1}} + \theta_1 LOILPR_{DOL_{t-1}} + \varepsilon_t \quad (30)$$

$$\Delta \mathrm{LRUS}GDP_{\mathrm{DOL}_t} = a_0 + \sum_{i=1}^{p} a_i \, \Delta \mathrm{LRUS}GDP_{\mathrm{DOL}_{t-i}} + \sum_{j=1}^{q} a_j \, \Delta LOILPR_{DOL_{t-1}} + \theta_0 \mathrm{LRUS}GDP_{\mathrm{DOL}_{t-1}} + \theta_1 LOILPR_{DOL_{t-1}} + \varepsilon_t \quad (31)$$

$$\Delta \mathrm{LKZ}GDP_{\mathrm{TEN}_t} = a_0 + \sum_{i=1}^{p} a_i \, \Delta \mathrm{LKZ}GDP_{\mathrm{TEN}_{t-i}} + \sum_{j=1}^{q} a_j \, \Delta LOILPR_{DOL_{t-1}} + \theta_0 \mathrm{LKZ}GDP_{\mathrm{TEN}_{t-i}} + \theta_1 LOILPR_{DOL_{t-1}} + \varepsilon_t \quad (32)$$

$$\Delta \mathrm{LKZ}GDP_{\mathrm{DOL}_t} = a_0 + \sum_{i=1}^{p} a_i \, \Delta \mathrm{LKZ}GDP_{\mathrm{DOL}_{t-i}} + \sum_{j=1}^{q} a_j \, \Delta LOILPR_{DOL_{t-1}} + \theta_0 \mathrm{LKZ}GDP_{\mathrm{DOL}_{t-i}} + \theta_1 LOILPR_{DOL_{t-1}} + \varepsilon_t \quad (33)$$

$$\Delta L\mathrm{LAT}GDP_{\mathrm{ER}_t} = a_0 + \sum_{i=1}^{p} a_i \, \Delta LAZGDP_{AZN_{t-i}} + \sum_{j=1}^{q} a_j \, \Delta LOILPR_{DOL_{t-1}} + \theta_0 \mathrm{LAT}GDP_{\mathrm{ER}_{t-i}} + \theta_1 LOILPR_{DOL_{t-1}} + \varepsilon_t \quad (34)$$

$$\Delta L\mathrm{LIT}GDP_{\mathrm{ER}_t} = a_0 + \sum_{i=1}^{p} a_i \, \Delta L\mathrm{LIT}GDP_{\mathrm{ER}_{t-i}} + \sum_{j=1}^{q} a_j \, \Delta LOILPR_{DOL_{t-1}} + \theta_0 L\mathrm{LIT}GDP_{\mathrm{ER}_{t-i}} + \theta_1 LOILPR_{DOL_{t-1}} + \varepsilon_t \quad (35)$$

$$\Delta LE\mathrm{ST}GDP_{\mathrm{ER}_t} = a_0 + \sum_{i=1}^{p} a_i \, \Delta LE\mathrm{ST}GDP_{\mathrm{ER}_{t-i}} + \sum_{j=1}^{q} a_j \, \Delta LOILPR_{DOL_{t-1}} + \theta_0 LE\mathrm{ST}GDP_{\mathrm{ER}_{t-i}} + \theta_1 LOILPR_{DOL_{t-1}} + \varepsilon_t \quad (36)$$

3.4. Long Run Granger Causality Test

When the results show that the variables are cointegrated, we evaluate the long–run relationship equations. In addition, we evaluate the Unlimited Error Correction Model (UECM) given by equations (28) – (36) to determine the short–term dynamics and the degree of correction. Next, in each Unlimited Error Correction Model (UECM), we examine the long–term cause–and–effect relationships between the independent variables that explain and explain the dependent. The negative sign of the error correction factor (π) and its value (significance) confirm that there is a long–term cause–and–effect relationship between the free variables and the dependent variables.

$$\Delta LAZGDP_{AZN_t} = a_0 + \sum_{i=1}^{p} a_i \, \Delta LAZGDP_{AZN_{t-i}} + \sum_{j=1}^{q} a_j \, \Delta LOILPR_{DOL_{t-1}} + \pi \mathrm{ECT}_{t-1} + \varepsilon_t \quad (37)$$

$$\Delta LAZGDP_{AZN_t} = a_0 + \sum_{i=1}^{p} a_i \, \Delta LAZGDP_{AZN_{t-i}} + \sum_{j=1}^{q} a_j \, \Delta LOILPR_{DOL_{t-1}} + \pi \mathrm{ECT}_{t-1} + \varepsilon_t \quad (38)$$

$$\Delta LAZGDP_{\mathrm{DOL}_t} = a_0 + \sum_{i=1}^{p} a_i \, \Delta LAZGDP_{\mathrm{DOL}_{t-i}} + \sum_{j=1}^{q} a_j \, \Delta LOILPR_{DOL_{t-1}} + \pi \mathrm{ECT}_{t-1} + \varepsilon_t \quad (39)$$

$$\Delta \mathrm{LRUS}GDP_{\mathrm{DOL}_t} = a_0 + \sum_{i=1}^{p} a_i \, \Delta \mathrm{LRUS}GDP_{\mathrm{DOL}_{t-i}} + \sum_{j=1}^{q} a_j \, \Delta LOILPR_{DOL_{t-1}} + \pi \mathrm{ECT}_{t-1} + \varepsilon_t \quad (40)$$

$$\Delta \mathrm{LKZ}GDP_{\mathrm{TEN}_t} = a_0 + \sum_{i=1}^{p} a_i \, \Delta \mathrm{LKZ}GDP_{\mathrm{TEN}_{t-i}} + \sum_{j=1}^{q} a_j \, \Delta LOILPR_{DOL_{t-1}} + \pi \mathrm{ECT}_{t-1} + \varepsilon_t \quad (41)$$

$$\Delta \mathrm{LKZ}GDP_{\mathrm{DOL}_t} = a_0 + \sum_{i=1}^{p} a_i \, \Delta \mathrm{LKZ}GDP_{\mathrm{DOL}_{t-i}} + \sum_{j=1}^{q} a_j \, \Delta LOILPR_{DOL_{t-1}} + \pi \mathrm{ECT}_{t-1} + \varepsilon_t \quad (42)$$

$$\Delta L\mathrm{LAT}GDP_{\mathrm{ER}_t} = a_0 + \sum_{i=1}^{p} a_i \, \Delta LAZGDP_{AZN_{t-i}} + \sum_{j=1}^{q} a_j \, \Delta LOILPR_{DOL_{t-1}} + \pi \mathrm{ECT}_{t-1} + \varepsilon_t \quad (43)$$

$$\Delta L\mathrm{LIT}GDP_{\mathrm{ER}_t} = a_0 + \sum_{i=1}^{p} a_i \, \Delta L\mathrm{LIT}GDP_{\mathrm{ER}_{t-i}} + \sum_{j=1}^{q} a_j \, \Delta LOILPR_{DOL_{t-1}} + \pi \mathrm{ECT}_{t-1} + \varepsilon_t \quad (44)$$

$$\Delta LE\mathrm{ST}GDP_{\mathrm{ER}_t} = a_0 + \sum_{i=1}^{p} a_i \, \Delta LE\mathrm{ST}GDP_{\mathrm{ER}_{t-i}} + \sum_{j=1}^{q} a_j \, \Delta LOILPR_{DOL_{t-1}} + \pi \mathrm{ECT}_{t-1} + \varepsilon_t \quad (45)$$

4. EMPIRICAL RESULTS AND DISCUSSION

4.1. Results of Unit Root Tests

As mentioned earlier, we begin by testing the integration of different variables using ADF, PP, and KPSS tests. The results of the three single root tests are given in Table 2. Approximately all three tests give the same results, confirming the reliability of our results. We can assume that none of the variables are integrated into the second level.

Table 2: Unit Root Test (ADF, PP, KPSS)

	The ADF Test			The PP Test			The KPSS Test		
	Constant	Constant, L.T	None	Constant	Constant, L.T	None	Constant	Constant, L.T	
				level					
$LAZGDP_{AZN}$	–1.817930	–0.599381	1.479532	–1.655220	–0.808508	2.950991	0.516265**	0.125294*	S
$LAZGDP_{DOL}$	–1.964900	–1.554706	0.779255	–1.706467	–0.465479	1.387245	0.468997**	0.148965**	S
$LRUSGDP_{RUB}$	–6.138014***	–0.843951	1.213854	–7.381028***	–0.808074	4.846329	0.581217**	0.166583**	S
$LRUSGDP_{DOL}$	–2.399577	–0.911527	1.780619	–2.297570	–0.833993	1.524298	0.465003**	0.155889**	S
$LKZGDP_{TEN}$	–2.856353*	–0.192150	1.821275	–2.746817*	–0.171374	5.873332	0.579587**	0.156558**	S
$LKZGDP_{DOL}$	–2.507992	–0.452832	1.177869	–2.342274	–0.553181	1.994886	0.510143**	0.155643**	S
$LLATGDP_{ER}$	–1.628578	–2.761136	2.085148	–1.418019	–1.793378	2.089458	0.537636**	0.136762*	S
$LLITGDP_{ER}$	–1.657913	–1.729689	3.748206	–2.428082	–1.654303	3.566007	0.570074**	0.157274**	S
$LESTGDP_{ER}$	–2.000671	–2.586781	2.449461	–1.932101	–1.889429	4.240458	0.572608**	0.148960*	S
$LOILPR_{DOL}$	–1.537281	–1.290598	0.590105	–1.588064	–1.290598	0.590105	0.339005	0.161799**	S
				1st difference					
$\Delta LAZGDP_{AZN}$	–2.361517	–2.732473	–1.533641	–2.371661	–2.635809	–1.409528	0.076127	0.063149	N/S
$\Delta LAZGDP_{DOL}$	–1.935315	–2.820172	–1.684666*	–2.008234	–2.108043	–1.672162*	0.318755	0.110113	S
$\Delta LRUSGDP_{RUB}$	–2.080653	–3.587400*	–1.589037	–2.019476	–4.352051**	–2.083346**	0.624283**	0.207093**	S
$\Delta LRUSGDP_{DOL}$	–2.796326*	–3.624711*	–3.624711*	–2.766899*	–3.528425*	–2.497272	0.465003**	0.155889**	S
$\Delta LKZGDP_{TEN}$	–2.649983	–3.574392*	–1.209497	–2.649983	–3.566979	–1.086742	0.462288**	0.094024	S
$\Delta LKZGDP_{DOL}$	–2.561458	–3.297811*	–2.138038**	–2.561458	–3.217874	–2.138038	0.411759*	0.170972**	S
$\Delta LLATGDP_{ER}$	–3.812870**	–3.977364**	–2.791466***	–2.199446	–2.081689	–1.932350*	0.395553*	0.079892	S
$\Delta LLITGDP_{ER}$	–3.233903**	–3.351125*	–2.202831**	–3.135525**	–3.391141**	–2.100415**	0.215449	0.149935**	S
$\Delta LESTGDP_{ER}$	–3.463986**	–3.860209**	–1.734368*	–2.266036	–2.140896	–1.559220	0.292890	0.102856	S
$\Delta LOILPR_{DOL}$	–3.152686**	–3.280806	–3.105559***	–3.166325**	–3.184676*	–3.124190***	0.176834	0.077209	S

Note: ADF denotes the Augmented Dickey–Fuller single root system respectively. The maximum lag order is 2. The optimum lag order is selected based on the Shwarz criterion automatically. PP Phillips–Perron is single root system. The optimum lag order in PP test is selected based on the Newey–West criterion automatically. The critical values are taken from MacKinnon (1996).

KPSS denotes Kwiatkowski-Phillips-Schmidt-Shin (Kwiatkowski et al., 1992) single root system. The optimum lag order in KPSS test is selected based on the Newey-West criterion automatically.

****, ** and *indicate rejection of the null hypotheses at the 1%, 5% and 10% significance levels respectively.*

The critical values are taken from Kwiatkowski-Phillips-Schmidt-Shin. (1991) Assessment period: 2000−2018

Legend: S-Stationarity; N/S–No Stationarity

4.2. Results of ARDL Models

Since we find that all variables are I(0) or I(1), we cannot use Johansen's multidimensional cointegration approach. However, we can use the test method to cointegrate ARDL boundaries. At the same time, we evaluate ARDL models given by equations (28) - (36). The results of the selection of model criteria are presented in Table 3.

Table following on the next page

Table 3: VAR Lag Order Selection Criteria

	Lag	LogL	LR	FPE	AIC	SC	HQ
$LAZGDP_{AZN}$	0	–27.62260	NA	0.092170	3.291400	3.390331	3.305042
	1	17.85121	75.78969*	0.000924*	–1.316801*	–1.020011*	–1.275878*
$LAZGDP_{\mathrm{DOL}}$	0	–21.34035	NA	0.045860	2.593372	2.692302	2.607013
	1	21.96338	72.17287*	0.000585*	–1.773708*	–1.476918*	–1.732785*
$LRUSGDP_{\mathrm{RUB}}$	0	–32.79376	NA	0.163727	3.865973	3.964903	3.879614
	1	29.90001	104.4896*	0.000242*	–2.655557*	–2.358766*	–2.614633*
$LRUSGDP_{\mathrm{DOL}}$	0	–9.338298	NA	0.012086	1.259811	1.358741	1.273452
	1	25.73065	58.44824*	0.000385*	–2.192294*	–1.895503*	–2.151371*
$LKZGDP_{\mathrm{TEN}}$	0	–28.04521	NA	0.117566	3.534730	3.632756	3.544474
	1	31.72242	98.44079*	0.000168*	–3.026167*	–2.732091*	–2.996935*
$LKZGDP_{\mathrm{DOL}}$	0	–20.16946	NA	0.040266	2.463274	2.562204	2.476915
	1	22.46971	71.06528*	0.000553*	–1.829968*	–1.533177*	–1.789044*
$LLATGDP_{\mathrm{ER}}$	0	–10.04120	NA	0.014138	1.416611	1.514637	1.426355
	1	16.66514	43.98691*	0.000985*	–1.254722*	–0.960647*	–1.225490*
$LLITGDP_{\mathrm{ER}}$	0	–12.72230	NA	0.017603	1.635811	1.734741	1.649452
	1	26.06228	64.64097*	0.000371*	–2.229143*	–1.932352*	–2.188219*
$LESTGDP_{\mathrm{ER}}$	0	–14.31974	NA	0.021021	1.813304	1.912235	1.826946
	1	25.65550	66.62540*	0.000388*	–2.183945*	–1.887154*	–2.143021*

** - Indicates lag order selected by the criterion*
AIC: Akaike Information Criterion
SC: Schwarz Information Criterion

The results of the diagnostic tests applied to the models are given in Table 5. Jarque − Bera Normality, Breusch − Godfrey Serial Correlation LM, ARCH and Breusch − Pagan − Godfrey test results show that in the models given in equations (19) - (27) (ARDL), errors with a significance level of 5% are normally distributed, serial free and homoskedastic. Finally, the results of the tests of the CUSUM and CUSUM squares are shown, respectively, showing the effect of oil price on growth GDP. It is shown that the calculation line is located between the two critical boundaries at the 5% significance level in all descriptions. Therefore, the coefficients of the models are dynamically stable. Thus, we can say that our ARDL models are reliable.

Table 4: Coefficients ARDL model

	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7	Model 8	Model 9
	$\Delta LAZGDP_{AZN}$	$\Delta LAZGDP_{\mathrm{DOL}}$	$\Delta LRUSGDP_{\mathrm{RUB}}$	$\Delta LRUSGDP_{\mathrm{DOL}}$	$\Delta LKZGDP_{\mathrm{TEN}}$	$\Delta LKZGDP_{\mathrm{DOL}}$	$\Delta LESTGDP_{\mathrm{ER}}$	$\Delta LLITGDP_{\mathrm{ER}}$	$\Delta LLATGDP_{\mathrm{ER}}$
$\Delta LAZGDP_{AZN(-1)}$	0.090837								
$LAZGDP_{AZN}$	–0.083526								
$\Delta LAZGDP_{\mathrm{DOL}(-1)}$		0.495564**							
$LAZGDP_{\mathrm{DOL}}$		–0.041187							
$\Delta LRUSGDP_{\mathrm{RUB}(-1}$			0.178060						
$LRUSGDP_{\mathrm{RUB}}$			–0.057505						
$\Delta LRUSGDP_{\mathrm{DOL}(-1}$				–0.075308					
$LRUSGDP_{\mathrm{DOL}}$				–0.168936					
$\Delta LKZGDP_{\mathrm{TEN}(-1)}$					–0.186197				
$LKZGDP_{\mathrm{TEN}}$					–0.058067				
$\Delta LKZGDP_{\mathrm{DOL}(-1)}$						–0.195262			
$LLATGDP_{\mathrm{ER}}$						–0.283784			
$\Delta LESTGDP_{\mathrm{ER}(-1)}$							0.312097		
$LESTGDP_{\mathrm{ER}}$							0.031135		
$\Delta LLITGDP_{\mathrm{ER}(-1)}$								0.193168	
$LLITGDP_{\mathrm{ER}}$								0.025294	
$\Delta LLATGDP_{\mathrm{ER}(-1)}$									0.406699
$LLATGDP_{\mathrm{ER}}$									0.045020
$\Delta LOILPR_{DOL(-1)}$	–1.189338***	0.590810**	0.070425	0.665204***	0.176573**	0.378983**	0.171218*	0.205386***	0.235033*
$LOILPR_{DOL}$	–0.014191	0.056236	0.028476	0.130324	0.061097	0.379890	–0.042386	–0.027629	–0.028480
$Constant$	0.190668	0.221555	0.604490	0.725163	0.511296*	1.846309*	–0.083125	–0.101538	–0.300902

**** - indicate rejection of the null hypotheses at the 1% significance levels respectively*
*** - indicate rejection of the null hypotheses at the 5% significance levels respectively*
** - indicate rejection of the null hypotheses at the 10% significance levels respectively*

Table 5: Diagnostic Test Results

Test Results (LM Version)						
		Normality Test (Jarque−Bera) JB	Heteroskedasticity Test: Breusch–Pagan–Godfrey	Heteroskedasticity Test: ARCHχ2	Breusch−Godfrey Serial Correlation LM Test: χ2	CUSUM - 5%-Significance
$LAZGDP_{AZN}/$ $LOILPR_{DOL}$ ARDL(2, 2) C @TREND)	Statistic	0.709361	7.693024	0.318200	0.929146	Stably
	Sig	0.701398	0.2615	0.5727	0.6284	
$LAZGDP_{\mathrm{DOL}}/$ $LOILPR_{DOL}$ ARDL(1, 1)	Statistic	0.314018	2.087276	0.153513	4.121046	Stably
	Sig	0.854697	0.5545	0.6952	0.1274	
$L\mathrm{RUS}GDP_{\mathrm{RUB}}/$ $LOILPR_{DOL}$ ARDL(1, 0)	Statistic	0.566119	1.891996	0.350392	3.535062	Stably
	Sig	0.753475	0.3883	0.5539	0.1708	
$L\mathrm{RUS}GDP_{\mathrm{DOL}}/$ $LOILPR_{DOL}$ ARDL (1, 2)	Statistic	0.797620	1.982003	0.051850	4.402153	Stably
	Sig	0.671118	0.7391	0.8199	0.1107	
$L\mathrm{KZ}GDP_{\mathrm{TEN}}/$ $LOILPR_{DOL}$ ARDL(1, 1)	Statistic	0.640780	0.160156	1.964505	2.800760	Stably
	Sig	0.725866	0.9837	0.1610	0.2465	
$L\mathrm{KZ}GDP_{\mathrm{DOL}}/$ $LOILPR_{DOL}$ ARDL(2, 2))	Statistic	1.838586	4.943543	0.810236	2.691767	Stably
	Sig	0.398801	0.4228	0.3681	0.2603	
$LE\mathrm{ST}GDP_{\mathrm{ER}}/$ $LOILPR_{DOL}$ ARDL (1, 1)	Statistic	2.796855	3.978517	2.015931	10.07872	Stably
	Sig	0.246985	0.2638	0.1557	0.0065	
$L\mathrm{LIT}GDP_{\mathrm{ER}}/$ $LOILPR_{DOL}$ ARDL(2, 2) C @TREND)	Statistic	3.624809	5.022894	0.494059	1.675654	Stably
	Sig	0.163261	0.5409	0.4821	0.4326	
$L\mathrm{LAT}GDP_{\mathrm{ER}}/$ $LOILPR_{DOL}$ ARDL(2, 1) C @TREND)	Statistic	1.966618	4.267512	0.291856	7.370938	Stably
	Sig	0.374071	0.5116	0.5890	0.0251	
Test Results (F−statistic Version)						CUSUM Squares-5%-Significance
$LAZGDP_{AZN}/$ $LOILPR_{DOL}$ ARDL(2, 2) C @TREND)	N/A	1.377645	0.284074	0.231262	1.377645	Stably
	N/A	0.3115	0.6024	0.7987	0.3115	
$LAZGDP_{\mathrm{DOL}}/$ $LOILPR_{DOL}$ ARDL(1, 1)	N/A	0.612128	0.136687	1.781566	0.612128	Stably
	N/A	0.6183	0.7168	0.2101	0.6183	
$L\mathrm{RUS}GDP_{\mathrm{RUB}}/$ $LOILPR_{DOL}$ ARDL(1, 0)	N/A	0.880927	0.315675	1.588524	0.880927	No-Stably
	N/A	0.4348	0.5825	0.2414	0.4348	
$L\mathrm{RUS}GDP_{\mathrm{DOL}}/$ $LOILPR_{DOL}$ ARDL (1, 2)	N/A	0.395926	0.045516	1.747185	0.395926	Stably
	N/A	0.8078	0.8341	0.2235	0.8078	
$L\mathrm{KZ}GDP_{\mathrm{TEN}}/$ $LOILPR_{DOL}$ ARDL(1, 1)	N/A	0.041895	1.959867	1.105618	0.041895	Stably
	N/A	0.9881	0.1819	0.3625	0.9881	
$L\mathrm{KZ}GDP_{\mathrm{DOL}}/$ $LOILPR_{DOL}$ ARDL(2, 2))	N/A	0.902072	0.746773	0.846572	0.902072	Stably
	N/A	0.5131	0.4021	0.4604	0.5131	
$LE\mathrm{ST}GDP_{\mathrm{ER}}/$ $LOILPR_{DOL}$ ARDL (1, 1)	N/A	1.324140	2.018075	7.634165	1.324140	Stably
	N/A	0.3061	0.1759	0.0073	0.3061	
$L\mathrm{LIT}GDP_{\mathrm{ER}}/$ $LOILPR_{DOL}$ ARDL(2, 2) C @TREND)	N/A	0.698958	0.446076	0.437383	0.698958	Stably
	N/A	0.6573	0.5151	0.6603	0.6573	
$L\mathrm{LAT}GDP_{\mathrm{ER}}/$ $LOILPR_{DOL}$ ARDL(2, 1) C @TREND)	N/A	0.737368	0.260119	3.444699	0.737368	Stably
	N/A	0.6109	0.6180	0.0775	0.6109	

Thus, all ARDL models given by equations (19) - (27) pass all diagnostic tests without problems. We checked the existence of long-term relationships through a border test. The test results for models are given in Table 6-7. They show that there is a long-term relationship. There is a long-term link (co-integration process) between rising oil prices and growth GDP at the level of 1%-10% of oıl exportıng countrıes (Azerbaıjan, Kazakhstan and Russıan). There no is a long-term link (no-cointegration process) between rising oil prices and growth GDP of oıl importıng countrıes (Latvia, Lithuania and Estoina).

Table following on the next page

Table 6: Results from bound tests

Dependant variable	F–statistic	Significance I0 Bound 10%	5%	2.5%	1%	I1 Bound 10%	5%	2.5%	1%	
$LAZGDP_{AZN}$	6.819087*	5.59	6.56	7.46	8.74	6.26	7.3	8.27	9.63	Cointegration
$LAZGDP_{\mathrm{DOL}}$	21.81526***	4.04	4.94	5.77	6.84	4.78	5.73	6.68	7.84	Cointegration
$LRUSGDP_{\mathrm{RUB}}$	18.10137***	4.04	4.94	5.77	6.84	4.78	5.73	6.68	7.84	Cointegration
$LRUSGDP_{\mathrm{DOL}}$	6.092532**	4.04	4.94	5.77	6.84	4.78	5.73	6.68	7.84	Cointegration
$LKZGDP_{\mathrm{TEN}}$	6.229121**	4.04	4.94	5.77	6.84	4.78	5.73	6.68	7.84	Cointegration
$LKZGDP_{\mathrm{DOL}}$	16.96873***	4.04	4.94	5.77	6.84	4.78	5.73	6.68	7.84	Cointegration
$LLATGDP_{\mathrm{ER}}$	1.283457	4.04	4.94	5.77	6.84	4.78	5.73	6.68	7.84	No Cointegration
$LLITGDP_{\mathrm{ER}}$	4.031742	5.59	6.56	7.46	8.74	6.26	7.3	8.27	9.63	No Cointegration
$LESTGDP_{\mathrm{ER}}$	4.717458	5.59	6.56	7.46	8.74	6.26	7.3	8.27	9.63	No Cointegration

*Note: The stars *, ** and *** indicate the levels of the variables 1%, 5% and 10%, respectively. The lower and upper limits of 1%, 5% and 10% significance levels are set by EVIEWS 9 software*

Table 7: Long Run Coefficients

	Variable	Coefficient	Std. Error	t–Statistic	Prob.
$LAZGDP_{AZN}$/	$LOILPR_{DOL}$	0.801513	0.099888	8.024086	0.0000
$LOILPR_{DOL}$ ARDL(2, 2)	C	5.786339	0.357216	16.198429	0.0000
C @TREND)	@TREND	0.116787	0.010084	11.581434	0.0000
	$Cointeq = LAZGDP_{AZN} - (0.8015 * LAZGDP_{\mathrm{DOL}} + 5.7863 + 0.1168 * @TREND)$				
$LAZGDP_{\mathrm{DOL}}$/	$LOILPR_{DOL}$	1.781294	0.131008	13.596814	0.0000
$LOILPR_{DOL}$ ARDL(1, 1)	C	3.251108	0.535319	6.073219	0.0000
	$Cointeq = LAZGDP_{\mathrm{DOL}} - (1.7813 * LOILPR_{DOL} + 3.2511)$				
$LRUSGDP_{\mathrm{RUB}}$/	$LOILPR_{DOL}$	0.599347	0.332715	1.801379	0.0918
$LOILPR_{DOL}$ ARDL(1, 0)	C	9.567620	1.610275	5.941608	0.0000
	$Cointeq = LRUSGDP_{\mathrm{RUB}} - (0.5993 * LOILPR_{DOL} + 9.5676)$				
$LRUSGDP_{\mathrm{DOL}}$/	$LOILPR_{DOL}$	1.021523	0.153747	6.644170	0.0000
$LOILPR_{DOL}$ ARDL (1, 2)	C	3.063416	0.667803	4.587305	0.0006
	$Cointeq = LRUSGDP_{\mathrm{DOL}} - (1.0215 * LOILPR_{DOL} + 3.0634)$				
$LKZGDP_{\mathrm{TEN}}$/	$LOILPR_{DOL}$	0.792177	0.475577	1.665719	0.1180
$LOILPR_{DOL}$ ARDL(1, 1)	C	9.716659	2.564012	3.789630	0.0020
	$Cointeq = LKZGDP_{\mathrm{TEN}} - (0.7922 * LOILPR_{DOL} + 9.7167)$				
$LKZGDP_{\mathrm{DOL}}$/	$LOILPR_{DOL}$	1.287383	0.105220	12.235203	0.0000
$LOILPR_{DOL}$ ARDL(2, 2))	C	6.731744	0.460776	14.609566	0.0000
	$Cointeq = LKZGDP_{\mathrm{DOL}} - (1.2874 * LOILPR_{DOL} + 6.7317)$				
$LESTGDP_{\mathrm{ER}}$/	$LOILPR_{DOL}$	–0.334965	1.374471	–0.243705	0.8110
$LOILPR_{DOL}$ ARDL (1, 1)	C	12.454984	7.344835	1.695747	0.1120
	$Cointeq = LESTGDP_{\mathrm{ER}} - (-0.3350 * LOILPR_{DOL} + 12.4550)$				
$LLITGDP_{\mathrm{ER}}$/	$LOILPR_{DOL}$	0.231667	0.075504	3.068267	0.0119
$LOILPR_{DOL}$ ARDL(2, 2)	C	8.752914	0.283872	30.834038	0.0000
C @TREND)	@TREND	0.052450	0.006736	7.786183	0.0000
	$Cointeq = LLITGDP_{\mathrm{ER}} - (0.2317 * LLITGDP_{\mathrm{ER}} + 8.7529 + 0.0524 * @TREND)$				
$LLATGDP_{\mathrm{ER}}$/	$LOILPR_{DOL}$	0.195972	0.098418	1.991223	0.0719
$LOILPR_{DOL}$ ARDL(2, 1)	C	8.472171	0.364030	23.273247	0.0000
C @TREND)	@TREND	0.054912	0.009609	5.714857	0.0001
	$Cointeq = LLATGDP_{\mathrm{ER}} - (0.1960 * LLOILPR_{DOL} + 8.4722 + 0.0549 * @TREND)$				

For long-term relationships, we evaluate limited error correction models to check for the presence of dynamic cause-and-effect relationships between different variables. Therefore, we evaluate the models shown in equations ((28) - (36) and (37) - (45). The long-term cause-and-effect relationship between Granger's various variables is determined by the t-value of the error correction term ECT_{t-1} in each equation. Estimates of the correlation coefficients of the models in equations (37) - (45), as well as long-term and short-term estimates, are given in Table 8. The results show that the error correction term coefficient is negative in all models. These results confirm the existence of long-term relationships between different variables. They show a long-term cause-and-effect relationship between rising oil prices and growth GDP.

Table following on the next page

Table 8: Estimates of the correlation coefficients (long-term and short-term)

	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7	Model 8	Model 9
	$\Delta LAZGDP_{AZN}$	$\Delta LAZGDP_{\mathrm{DOL}}$	$\Delta LRUSGDP_{\mathrm{RUB}}$	$\Delta LRUSGDP_{\mathrm{DOL}}$	$\Delta LKZGDP_{\mathrm{TEN}}$	$\Delta LKZGDP_{\mathrm{DOL}}$	$\Delta LESTGDP$	$\Delta LLITGDP_{\mathrm{ER}}$	$\Delta LLATGDP_{\mathrm{ER}}$
$\Delta LAZGDP_{AZN(-1)}$	0.120390								
$\Delta LAZGDP_{\mathrm{DOL}(-1)}$		0.264247							
$\Delta LRUSGDP_{\mathrm{RUB}(-1)}$			0.385945						
$\Delta LRUSGDP_{\mathrm{DOL}(-1)}$				–0.168633					
$\Delta LKZGDP_{\mathrm{TEN}(-1)}$					–0.211935				
$\Delta LKZGDP_{\mathrm{DOL}(-1)}$						–0.310448*			
$\Delta LESTGDP_{\mathrm{ER}(-1)}$							0.312806		
$\Delta LLITGDP_{\mathrm{ER}(-1)}$								0.166064	
$\Delta LLATGDP_{\mathrm{ER}(-1)}$									0.391741
$\Delta LOILPR_{DOL(-1)}$	–1.087215***	0.646219***	0.128442*	0.783608——	0.245598***	0.649999***	0.156303*	0.195264*	0.220013*
$ECT_{(t-1)}$	–0.113120*	–0.173032	–0.035239	–0.278841*	–0.058883*	–0.311688***	–0.008076	–0.030503	–0.090333
$Constant$	0.116956***	0.053853	0.105117*	0.067679**	0.192317***	0.126859***	0.042664	0.046045*	0.026523

**** - indicate rejection of the null hypotheses at the 1% significance levels respectively*
*** - indicate rejection of the null hypotheses at the 5% significance levels respectively*
** - indicate rejection of the null hypotheses at the 10% significance levels respectively*

The results of the ratios show that oil prices have a significant impact on the growth of GDP oıl exportıng countrıes (Azerbaıjan, Kazakhstan and Russıan) in the long run. In addition, our results are consistent with the results obtained in recent years by many economists (Muradov et al., 2019; Mukhtarov et al., 2017; Mukhtarov et al., 2020; Aliyev et al., 2016; Musayev and Aliyev, 2017; Hasanov et al., 2017. Ustiuzhanin et al., 2019; Khan and Haque, 2019)

5. CONCLUSION

This study is of interest in terms of its ability to help regulate car imports in Azerbaijan to some extent and to pursue an effective policy towards more efficient use of oil revenues to accelerate economic growth. This article analyzes the cause-and-effect relationship between oil prices and GDP in Azerbaijan, Kazakhstan, Russia (oil exporters) and Latvia, Lithuania, Estonia (oil importers) in 2010-2019 (by months) test the reliability of long-term ARDL. In general, our findings show that there is a positive cause-and-effect relationship between oil prices and GDP growth in the long run. As a result of the research, the following should be noted: more attention should be paid toward the utilization of oil revenues in Azerbaijan, Kazakhstan and Russia. Oil revenues should be directed to more productive projects that accelerate economic growth. Azerbaijan, Kazakhstan and Russia needs to strengthen its diversification policy to reduce its dependence on oil revenues.

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TRANSPORT COSTS AND THEIR POSITION IN THE LOGISTICS CHAIN

Peter Majercak
University of Zilina, FPEDAS, Department of Economics
Univerzitna 1, 01026 Zilina, Slovakia
Peter.majercak@fpedas.uniza.sk

ABSTRACT
The article is focused on logistic costs in transport. Logistics costs are an important type of business costs. The author calculates a model example of optimization of logsitic costs in transportation. Currently available on all major markets competitive, the companies are high requirements. Enterprise to survive in this environment, they must gain a competitive advantage over others. One of the competitive advantages may become a well designed logistics system. Logistics, as a scientific discipline and management tool, has recently attaches increasing importance. It deals with the optimal coordination, harmonization, linking and optimizing the flow of raw materials, semi-finished products and services, but the flow of information and finance. In all these areas is bound by a large number of funds, their planning and management is therefore very important for businesses.
Keywords: *Logistics, Logistics costs, Logistics optimization, Transportation costs*

1. INTRODUCTION

The companies currently available in all major competitive markets are in high demand. To survive in this environment, a company must gain a competitive advantage over others. One of the competitive advantages can be a well-designed logistics system. Logistics as a tool of scientific discipline and management has recently become increasingly important. It deals with the optimal coordination, harmonization, interconnection and optimization of the flow of raw materials, semi-finished products and services, but the flow of information and finance. In all these areas, a large amount of funds is tied up, so their planning and management is very important for companies. Inventory is one of the most important areas of logistics planning and management. They provide a smooth production process and provide plenty of room for maneuver. (1) If there is excess inventory, a lot of funds are tied up that the company could use otherwise. If a lack of stocks will cause difficulties in production. Stopping production or rebuilding machines is not only a financial but also a waste of time for the company. To avoid such a case in the company, the company's management requires careful planning and monitoring of stocks (2). Since logistics dates back to the 1950s, there has been a wealth of research in this area focused on various applications. Due to the trend of nationalization and globalization in recent decades, the importance of logistics management in various areas is growing. For industries, logistics helps optimize existing production and distribution processes based on equal resources through management techniques to support the efficiency and competitiveness of companies. A key element in the logistics chain is the transport system, which combines separate activities. Transport accounts for one third of logistics costs and transport systems have a huge impact on the performance of the logistics system. Transport is required in all production processes, from production to delivery to the final consumer and return of goods. Only good coordination between the individual components would maximize the benefits. Logistics provides a space for manufacturers and suppliers to think about their logistics chains. In the current ongoing pandemic for COVID-19, it is very important for logistics to take on the new challenges that will begin to emerge after overcoming the global COVID-19 pandemic.

2. HISTORY AND ADVANCEMENT OF LOGISTICS

Logistics was initially a military activity concerned with getting soldiers and munitions to the battlefront in time for flight, but it is now seen as an integral part of the modern production process. The main background of its development is that the recession of America in the 1950s caused the industrial to place importance on goods circulations. The term, logistics, was initially developed in the context of military activities in the late 18th and early 19th centuries and it launched from the military logistics of World War II. The probable origin of the term is the Greek *logistikos*, meaning 'skilled in calculating'. (BTRE, 2001) Military definitions typically incorporate the supply, movement and quartering of troops in a set. And now, a number of researches were taken and made logistics applications from military activities to business activities. Business logistics was not an academic subject until the 1960s. A key element of logistics, the trade-off between transport and inventory costs, was formally recognized in economics at least as early as the mid-1880s. (BTRE, 2001) Based on the American experience, the development of logistics could be divided into four periods.

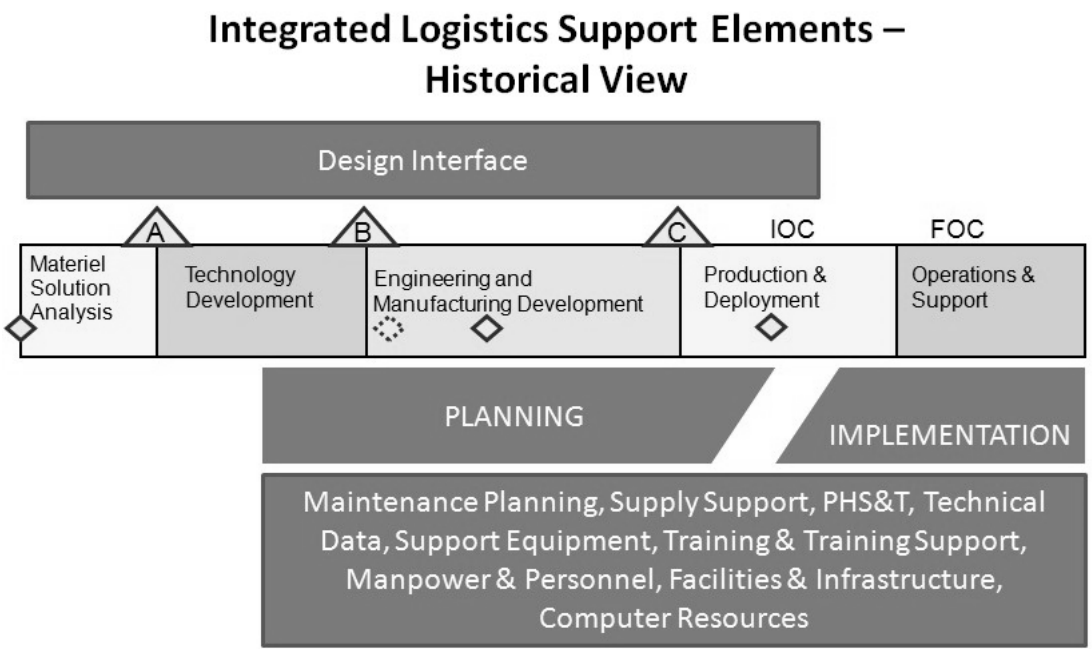

Figure 1: Historical view of Logistics Support Elements

Before the 1950s, logistics was under the dormant condition. Production was the main part of the managers concerned, and industry logistics was once regarded as "necessary evil" in this period. During the 1950s to and 1960s, applying new ideas of administration on business was a tendency. Bartosova et al. (2015), who thought Logistics was The Economy's Dark Continent, regarded the procedure of physical distribution after producing products as the most possible development area in American businesses but also the most neglected area. Lewis's study (cited in Majercak, et.al, 2013) in 1956 on the role of air transportation in physical distribution was the application of "total cost concept" and it pointed out the notions of tradeoff between inventory and transportation. From the 1970s onwards, more and more applications and researches of logistics appeared. Due to petroleum price rise in 1973, the effects of logistics activities on enterprises grew. Slow growth of market, pressure of high stagflation, release of transportation control, and competitions of the third world on products and materials all increased the significance of logistics system on planning and business at that time. The further tendency of logistics in the early 21st century is logistics alliance, Third Party Logistics (TPL) and globalised logistics.

Logistics circulation is an essential of business activities and sustaining competitiveness, however, to conduct and manage a large company is cost consuming and not economic. Therefore, alliance of international industries could save working costs and cooperation with TPL could specialize in logistics area.

3. TOTAL COST OF LOGISTICS AND SUPPLY CHAIN COST

Logistics costs here are understood as expenses incurred from performing logistics activities, and from having the infrastructure, capacity or the readiness to perform logistic activities during a certain period of time. Unlike in external reporting for financial purposes (e.g. for stock owners), there are no set rules regulating precisely which expenses should be included as logistics costs.

It largely depends on what activities the firm defines as logistics (7,11,12,13) or supply chain. Majercak et.al. (2013) provide an allencompassing definition of logistics costs:

"The logistics costs KLog [€/planning period] are the total operating costs of a single logistic performance station, a logistics profit center, the logistics network of a company or a of a logistics service provider."

This definition aptly describes the broad range of possibilities rganizing logistics costing. On the one hand, 'a single logistics performance station' is probably the smallest unit in a company where costs are measured and recorded; but on the other hand the logistics network of a company or a LSP is likely to extend outside the legal borders of the company and may include dozens of independent organizations. Also, implicit in the part 'a logistics profit center' is the assumption that also the revenues of logistics activities are monitored, whereas an individual logistic performance station may as well be organized as a cost center (i.e. only costs are attributed to it, but no revenues). There is also a more practical definition of company logistics cost that is suggested for market surveys and comparisons between companies (1,2,3,4,5):

"…the total company logistic costs comprise all logistics costs between the receiving ramps of the company and the receiving ramps of their customers."

In addition to these, also the expenses for external logistics services should be included as the logistics cost of the company (6,8,9,10). This way double counting of logistics costs is avoided, and although in reality the supplier may deliver the goods Ex Works or with some other INCOTERM with limited liability and the focal company pays for the freight, insurance, customs charges and unloading, those costs are at least approximately allocated to whom they incur. Additionally, Majercak (2013) also exclude the costs of buying and procuring merchandise, material, parts and equipment that are not directly caused by the execution of logistics tasks and services. So, according to their definition, logistics costs do not include procurement costs. The costs for packing sales units are attributed as production costs, whereas the costs for other packing material, pallets, bins etc. are classified as material costs of logistics.

3.1. Transportation cost

The most common cost, understood as a logistical cost, is probably transport, together with storage and inventory management costs: these are already mentioned as early as 1930 as part of operating costs. In a survey from the late 1970s, 87% of the 300 North American respondents said they had readily available information on transportation costs, and in the mid-1980s it was estimated that combined transportation and storage accounted for about 80 percent of total distribution costs. in most companies (2,4,5). More specifically, in the reviewed literature, transportation costs are included in incoming and outgoing transportation and theft or damage

during transportation. Kliestik et al. we recommend that transportation costs plus local transportation costs [incurred by the focus company] be considered as total transportation costs. Majercak describes in detail the recording of transport costs and distinguishes between an internal company (eg transport from one warehouse to another) and external transport; own fleet transport and third party transport services; and regular and related transport. It depends on the company what kind of classification of transport costs is required; a more in-depth examination by mode of transport may also be needed.

3.2. Costs of complexity

The interconnected nature of supply chain processes within a company and the various trade-offs associated with logistics and supply chain management lead to the need to examine costs from a holistic system-wide perspective. Categories of costs that are not explicitly identified in managerial accounting but are attractive for supply chain management can be called complexity costs or complexity costs. this work in this category includes efforts to express in monetary terms the impact of a decision in one part of the logistics system on another part of the system or on the total cost of the system (14,16,18). They can also be called a more common term for opportunity costs, but the cost of complexity emphasizes the systemic nature of costs. Some of the best-known examples of such analyzes, which require knowledge of the systemic effects of the decision on the supply chain, are the trade-off between transport and storage costs or batch size versus cost-bearing inventory. Majercak recommends case-specific analyzes to identify the cost effects of trade-offs, but these will be excluded from the ongoing cost selection. Majercak emphasizes the understanding of "intangible" logistics costs as well as "tangible" costs. Potential costs (occasional costs) resulting from the decision, in addition to the costs actually incurred. This is generally considered important when reworking the supply chain, for example when making purchasing or purchasing decisions, such as off-site manufacturing or outsourcing of logistics activities; or the relocation of logistics activities in relation to a supply chain partner who can carry them out more efficiently. Vochozka et al. note that some costs vary depending on the diversity and complexity of the product line and that their variability is largely due to the transactions they cause in the logistics or distribution phase. Janoskova represents the concept of complexity or complexity costs: excessive costs due to the diversity and volume of products on different functions The impact of complexity may be small in one area, but the compound effect of a large number of impacts on a wide range of costs in different parts of the organization (15,17). They are displayed as cost of goods sold, operating costs or are occasional costs (missed income). Complexity cost analysis requires an understanding of what causes variations in what costs and at what level (eg, batch, channel, supplier, or product level), similar to establishing a hierarchy of activities in activity-based calculations (11,13,17). Diversity-related costs are the cost per unit of storage (SKU) needed to bring new products to market and support products throughout their life cycle. This may be due, for example, to supplier selection and qualification, product data entry, tools, testing, rework, marketing, warranty costs, returns, and are generally classified as fixed costs because they do not vary by unit produced. Volume-driven complexity costs, on the other hand, are increases in the variable unit cost of a SKU or an item resulting from 1) insufficient (production) volume to reach an operationally efficient scale (e.g. higher material prices, production switching costs), or from 2) the demand variability (e.g. increased inventory, obsolescence of slow moving inventory, expediting costs, missed income of lost sales). Cost of quality (COQ) may be considered largely as belonging to complexity costs, although part of the costs is actually incurred costs from a use of resources (e.g. scrap and rework).

4. PRACTICAL STUDY OF LOGISTIC COSTS OPTIMIZATION

In this case, we consider delivery in the logistics chain as follows:

supplier → carrier → manufacturing company.

The supplier represents the manufacturer of the semi-finished product. The aim of this study is to compare the classical approach, where each part monitors its costs in isolation, and try to minimize them, with a systemic (logistical) approach, where the entire supply chain is optimized.

Q = 90 000 u/y - total volume of supplied semi-products,
f_1 - frequency (per year) of supplies,
f_2 - frequency of supplies according to carrier,
f_3 - frequency of supplies according to producer,
nd = 40 € - supplier´s costs to the expedition of one supply,
s_d = 0,8 € - store costs per unit per year by supplier,
nv = 18 € - producer´s costs to order one supply,
s_v = 1 € - store costs per unit per year by producer,
l = 40 km - distance from producer to supplier,
n_t = 0,32 €/km - transport rate,
A = 54 080 €/y - yearly amortisation of procurement costs of transport system by f_2=1.

4.1. Autonomous optimization - supplier

By the supplier we are talking about costs to procure semi-products supply and their storage. If we mark the volume in one supply q_d, then supplier´s costs N_d equal:

$$N_d = \frac{Q}{q_d}.n_d + \frac{q_d}{2}.s_d \text{ , or according to frequency: } f_1 = \frac{Q}{q_d}$$

$$N_d = f_1.n_d + \frac{Q}{2.f_1}.s_d$$

We can determine the optimal supply frequency from the annulated first derivation:

$$\frac{dN_d}{df_1} = 0$$

$$n_d \frac{Q}{2f_1^2}.s_d = 0$$

$$f_1 = \sqrt{\frac{Q.s_d}{2.n_d}} = \sqrt{\frac{90000\,.\,0{,}8}{2.40}} = 30$$

4.2. Isolated optimization - carrier

The carrier performs a specific transport system with the optimal frequency. There are two opposing items in shipping costs. At high frequencies, low capacity vehicles are used. They will be used efficiently, but they will travel many kilometers. In the case of a small volume of deliveries, high-capacity vehicles will run less than kilometers, but capacity will not be used sufficiently.

It will cost higher costs $\frac{A}{f_2}$. This situation is explained by cost function:

$$N_t = \frac{A}{2f_2} + f_2 . l . n_D$$

$$f_2 = \sqrt{\frac{A}{l . n_t}} = \sqrt{\frac{54080}{40.0,32}} = 65$$

4.3. Isolated optimization - producer

The producer wants the supplement to be connected with minimal costs of order and semi-products storing:

$$N_v = f_3 . n_v + \frac{Q}{2f_3} . s_v$$

$$f_3 = \sqrt{\frac{Q . s_v}{2 . n_v}} = \sqrt{\frac{90000.1}{2.18}} = 50$$

It is obvious that the calculated optimal frequency differ (30 ≠ 65 ≠ 50). This is the reason, why the isolated optimization cannot be performed. The economically strongest subject will enforce his interest and the others must accept it. In our case, there are three possible alternatives:

The economically strongest is the supplier ($f_1 = f_2 = f_3 = 30$)

$$N_d = f_1 . n_d + \frac{Q}{2f_1} . s_d = 30 . 40 + \frac{90000}{2.30} . 0,8 = 2\,400$$

$$N_v = \frac{A}{f_2} . f_2 . l . n_t = \frac{54080}{30} + 30.40.0,32 = 2\,186,68$$

$$N_v = f_3 . n_v + \frac{Q}{2f_2} . s_v = 30 .18 + \frac{90000}{2.30} .1 = 2\,040$$

Total costs of the whole supply chain are in this case **6 266, 68 €.**

The economically strongest is the carrier ($f_1 = f_2 = f_3 = 65$)

$$N_d = f_1 . n_d + \frac{Q}{2f_1} . s_d = 65 . 40 + \frac{90000}{2.65} . 0,8 = 3\,1523,85$$

$$N_v = \frac{A}{f_2} . f_2 . l . n_t = \frac{54080}{65} + 65.40.0,32 = 1\,664$$

$$N_v = f_3 . n_v + \frac{Q}{2f_2} . s_v = 65 .18 + \frac{90000}{2.65} .1 = 1862,31$$

Total costs of the whole supply chain are in this case **6 680, 16 €**.

The economically strongest is the producer (f1 = f2 = f3 = 50)

$$N_d = f_1 . n_d + \frac{Q}{2f_1} . s_d = 50 . 40 + \frac{90000}{2.50} . 0,8 = 2\,700$$

$$N_v = \frac{A}{f_2} . f_2 . l . n_t = \frac{54080}{50} + 50.40.0,32 = 1\,721,6$$

$$N_v = f_3 . n_v + \frac{Q}{2f_2} . s_v = 50 . 18 + \frac{90000}{2.50} . 1 = 1\,800$$

Total costs of the whole supply chain are in this case **6 221, 6 €**.

5. LOGISTICS MATHEMATICAL OPTIMIZATION

If there is a willingness to cooperate and business relationships emerge, it is possible, in line with a logistical approach, to find the optimal solution for the whole chain, where the most effective compromise is when all actors in the supply chain have a certain advantage. The costs of the whole supply chain can be explained as follows:

$$N_{log} = f . n_d + \frac{Q . s_d}{2f} + \frac{A}{f} + f . l . n_t + f . n_v + \frac{Q . s_v}{2f}$$

Optimal logistics frequency of transport will be:

$$f_{opt} = \sqrt{\frac{Q\,(s_d + s_v) + 2A}{2(n_d + l . n_t + n_v)}} = \sqrt{\frac{90000\,(0,8 + 1) + 2 . 54080}{2(40 + 40.8 + 18)}} = 18,90$$

After mentioned calculations, total costs of the whole supply chain by the logistic optimization are **5 306, 31 €.**

This study shows that cost optimization of the whole supply chain has better result than any other solution based on partly optimization.

6. CONCLUSION

The above example shows that the solution of logistics chain optimization is very important. Companies are currently striving to optimize logistics costs in all their activities with the aim of competitiveness and sustainable development. An example of the results is that optimization costs for logistics are needed throughout the logistics chain and do not optimize isolation for only part of the logistics chain. At the time of the global COVID-19 pandemic, all manufacturers and transporters had to deal with the challenges posed by the pandemic. From a personal point of view, I therefore see the main reason for solving logistics problems, the cooperation of individual links in the logistics chain with the support of information technology. Thanks to the COVID-19 pandemic, the future of logistics cooperation will change significantly towards building new global logistics networks that will respond more flexibly to the challenges of today's but also future epidemics that will affect our world.

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TRANSNATIONALIZATION AND DIGITALIZATION OF BANKS AS MEANS OF EVOLVING EFFICIENCY NOT ACCOUNTABILITY

Fahri Murshudli
Azerbaijan State University of Economics (UNEC)
Baku, Istiqlaliyyat str., 6, AZ1001, Azerbaijan
fahri_murshudli@yahoo.com

Boris Loguinov
Diplomatic Academy of the Russian Ministry of Foreign Affairs
Moscow, Ostozhenka, 53/2, stroenie 1, 119021, Russia
loguinov_boris@mail.ru

ABSTRACT

The article discusses the modern state of international banking industry and its development directions, among which transnationalization, digitalization as well as lack of ethics and social responsibility have been stood out as key. A review of post-crisis literature on this issue is presented. The authors track changes taking place here due to global challenges and financial turbulence. Under the current conditions, the transnationalization of the banking business has been one of the main manifestations of the process of financial globalization. The motives, signs and benefits of the transnationalization of bank capital are shown, the modern trends of its development are revealed. The growing role of digitalization of financial markets, in particular, the banking sector has become another important trend. This form of activity significantly increases the efficiency of international banking operations, it accelerates the growth of global financial capital flows. The features of digitalization of various instruments used in international banking (trade finance, LCs, guarantees etc.) and their specific manifestations are characterized. Meanwhile, the significant visible transformation of banking performance wasn't accompanied by any changes of internal nature of banking and bankers. They even became more ingenious and implicit. Under tougher regulations and long-lasting period of low interest rates in most countries banks have implemented more aggressive credit practice and have directly or indirectly conducted much more risky operations on the securities and derivatives markets pushing up stock indices and manipulating key financial indicators (well-known LIBOR scandals).

Keywords: *International banking business, Financial globalization, Transnationalization, Digitalization, Accountability, Coronacrisis, Social responsibility, LIBOR*

1. INTRODUCTION

The new dynamics of financial globalization, increased competition in international financial markets were the logical consequence of the global economic shifts that occurred in the historical period after the global financial and economic crisis of 2007-2008 (Lund et al., 2017). They are characterized, above all, transformational changes in the common economic space, by a hard reset of the world economy. The highest degree of sensitivity in relation to the global economic situation is shown by the world banking system. The increase in its volatility and uneven dynamics, leading to an increase in global financial instability and transformational uncertainty, is closely correlated with the stages of economic evolution of developed and emerging countries, as well as crisis phenomena in the world economy, for which there is a certain cyclical nature. The combination of the above processes necessitates the development of fundamentally new approaches to the strategic regulation of international banking business (IBB) based on the definition of imperatives for its development in the context of global economic transformations (McCauley, McGuire, von Peter, 2010, 29).

The stormy processes of globalization of the financial system involve a specific range of problems and contradictions, a number of new phenomena in the international financial and banking sphere. In this regard, the research priorities in the scientific works of scientists-economists in this field are of undoubted interest, to which our review of post-crisis literature is devoted. Along with this, this article discusses the general characteristics of the key trends of the IBB – transnationalization, digitalization, as well as increasing asocial role of globally operated banks, reveals the features of their manifestation in modern conditions, tracks the metamorphoses occurring here due to global challenges, financial turbulence and pandemic outbreaks. Given the current situation, the study of the existing spectrum of changes in the development of the IBB that accompanies the above processes is gaining relevance.

2. REVIEW OF POST-CRISIS LITERATURE

In the process and after the global financial and economic collapse of 2007-2009 the development of the IBB was accompanied by such global challenges as turbulence in the global economy, financial imbalances, growing vulnerability and deep breakdown of the regulatory mechanism of national banking systems, serious systemic risks, the bankruptcy of a number of leading transnational banks (TNB), a significant limitation of their foreign economic banking, etc. In this regard, experts in the field of international banking have radically changed the theoretical, methodological and empirical approaches to the research. This, in turn, was embodied in the fundamental works published in the second decade of the XXI century, in which new views prevail on issues related to the problems and opportunities of international banks in a rapidly changing global environment (Kim, McKenzie, 2010; Allen et al., 2011; Weston, 2012; Finel-Honigman, Sotelino, 2015; Danielson, 2016; Demirguc-Kun et al., 2017; Faia et al., 2017; VanHoose, 2017; Sist, 2018; Eray, 2020). As the processes of financial globalization deepened and expanded, the range of research priorities in the field of the development of IBB in the writings of Western researchers increased significantly. Along with a dense study of the theory of the issue, they began to focus on new trends, as well as specific issues of a narrower nature, which are of practical importance for the banking industry. Among them are such as the strategy and business models of transnational financial structures (Schoenmaker, 2013; Buranatrakul, Swierczek, 2017; Argimón, I., 2019; Everett et al., 2020), regulation of the IBB (Navaretti et al., 2011; Calzolari et al., 2016; Sum, 2016; Singh, 2020), cross-border M&A in the banking sector (Pozzolo, 2009; Rao-Nicholson, Salaber, 2016; Latorre, 2019), the expansion of foreign banking capital (Bruno, Hauswald, 2014; Claessens, Van Horen, 2014; Iwanicz-Drozdowska et al., 2018; Schnabel, Seckinger, 2019), innovative trends (including digitalization) of the IBB (Skinner, 2014; Scardovi, 2016; Dabrowski, 2017; King, 2018; Nicoletti, 2017, 2018; Arslanian, Fischer, 2019; Beaumont, 2019; Bilan et al., 2019; Tanda, Schena, 2019) etc. The surge in international expansion of the financial corporations of China, Japan and Korea, as well as foreign banks on the Asian continent, received scientific and empirical argumentation (Mrochen, 2010; Phillips et al., 2014; Li et al., 2018; Gu et al., 2020; Nishimura, Sugawara, 2020). Of particular relevance in the post-crisis period have received such an important vector of research IBB as islamic banking, have shown extraordinary resilience to the global financial turmoil (Askari et al., 2010; Khan, Porzio, 2010; Pitluck, 2012; Ahmed et al., 2014; Harrison, Ibrahim, 2016; Hajjar, 2019; Rafay, 2020). It should also be noted that the subject of development of the IBD and its individual aspects in the post-crisis years, although not so actively, were studied by scientists and economists in the scientific space of post-Soviet countries: Abalkina, 2016; Baburina, 2014; Bagautdinova, Shalina, 2015; Batrimenko, 2011; Ziyadullaev, 2017; Kievich, 2010, 2011; Klimanova, Ivanova, 2017; Coldovsky, 2014; Loginov, 2016; Noskov, Vlezkova, 2019; Yarygina, 2016, 2020, etc. At the same time, it should be recognized that, despite significant progress in the scientific research of these problems, today the issues of the impact on the transformation of the international banking business of

factors such as transnationalization, digitalization in conjunction with social role of banks remain insufficiently studied. In addition, the conclusions of foreign authors cannot always be considered as universal recommendations for the banking systems of post-Soviet countries, which are in the process of self-formation and have a certain specificity. All this determines the relevance of the topic of this article. The aim of the authors is to identify the main trends in international banking in the post-Soviet space that contribute to the development of the IBB in the context of contemporary global challenges.

3. SOCIAL DIMENTION OF INTERNATIONAL AND MULTINATIONAL BANKING

The role of banks in the economy cannot be overstated. Even now, when technological environment is significantly changing, and a lot of new players have emerged. Fintech companies, crowdfunding marketplaces are among such newcomers. The financial intermediation of banking organizations in the market still allows to connect capital-seeking subjects with those who saves and invests in the best way possible. This applies both to national and global financial systems. The income and capital reallocation within individual economies as well as between different countries in global economy still remains the main function of banks, which they do very well. But banks are not charitable organizations, their interests are quite pragmatic: banking services must be profitable as much as possible. It often means earning on borrowers who are in financial straits, extremely increasing financial leverage for making profits. The thing is when borrowers lose their incomes or part of them, that increases credit risk and interest rate in credit deals with a bank. In pursuing global financial arbitrage strategy, international banks skillfully profit from systemic problems of individual countries and regions wringing huge money out of them with a set of different financial instruments and mechanisms. One of such means, carry trade, is well-known to banks and well explored by scholars. Such operations include borrowing money nominated in national currencies from markets with low interest rate and investing it in currencies of countries with higher interest rates. In some countries such activity of international banks results in substantial deviation of market currency rates from their fundamental values (Costanza, Patten, 1995). One of the best examples of such undesirable fluctuation is the Russian Ruble dynamics in 2000s. Both overvaluation and undervaluation of national currency because of banking speculative activity negatively influence on international operations of domestic manufacturing and trade companies. Central banks' interventions aimed at keeping currency rate on an acceptable level become ineffective (Zhang, Wu, Tseng, 2019). It increases uncertainty of monetary policy backwashes and decreases adequacy of central banks' interest rate to macroeconomic fundamentals and erodes its significance as a tool of governing economic activity in a country. The far from fundamental changes surge of foreign capital inflow creates credit bubbles, led to inflation spiral in "target countries" (for FX speculators) because of carry trade deals. It increases BOP current account deficit and consumption on temporary base, because it doesn't coincide with output growth. Everything mentioned above depresses competitiveness of the economies injured by carry-traders. Finally, growth of so risky investments in foreign exchange assets reaches extremely high volume and international banks as well as other FX-and-interest rate players lose confidence in ability of high yield countries to repay taken credits and return received capital. Sharp capital flight takes place initiating the wave of defaults and bankruptcies. The Asian crisis of 1997 was developing on this scenario, destroying rapidly growing economies of Thailand, Philippines, Indonesia, and countries of the region (Chancellor, 2008). The Turkish market of 2010s suffered from international banks' operations because of hot money movement in/out and bubble in the real estate market. International banks' carry trade threatens both developing countries and developed as well, but, of course, it is not related to economic superpowers. Ahead of the European debt crisis of 2010-2012 international banks borrowed dollars in the USA transferred them Spain, Ireland, CEE countries in form of credits.

Thus, they could make much higher profits and we know result of that. There was extremely quick growth of state debt and relative share of budget money directed on servicing such a debt.

4. KEY DEVELOPMENT TRENDS IN INTERNATIONAL BANKING BUSINESS

From a wide range of trends in the development of the IBB, we have chosen three areas – transnationalization, digitalization and interaction of international banks with society. They are the most promising, in our opinion, of undoubted interest. This is primarily due to the emergence of new factors affecting the dynamics and quality level of TNB, tightening, both globally and nationally, monetary policy measures aimed at controlling the performance of banking operations by transnational financial institutions, increasing the impact of Fintech on efficiency the functioning of TNB, the weakening of the social components of their activities.

4.1. Transnationalization of banking business

The transnationalization of banking is seen as a process of expanding the international business of banks, their going beyond the national borders of individual countries. It contributes to the maximum adaptation of the banking sector of the economy to modern world economic trends and the state of the global financial system. Banking transnationalization is the main component and at the same time an important economic mechanism of the general processes of globalization; it serves as a key regulator that ensures the coordinated functioning of the global economy in a global framework. The main incentives for the transnationalization of bank capital should include its concentration and consolidation, increased competition in national markets, the need to provide multinational companies with financial resources, the formation of the Eurocurrency market and other global financial markets, the creation of global information and financial networks that significantly facilitate the processes capital movements. Economically determined by the possibility and necessity of overflowing capital from countries with its relative excess in regions with an investment deficit, but with an excess of other factors of production that cannot be effectively used due to a lack of capital, the transnationalization of banking activity contributes to the implementtation of reproduction processes and equalization of economic conditions in different countries. The main material carriers of the unfolding financial globalization are TNB. If at its initial stage the globalization of the banking business was carried out mainly through the transnationalization of certain banking operations, then at present it is in the form of transnationalization of the organizational and institutional structure of banks and the export of part of its own capital, as a result of which TNB are formed, and subsequently adequate the needs of the global economy transnational banking system. TNB are the largest international banking institutions that have achieved a high level of international integration, concentration, centralization of capital and its merging with non-financial monopolies, which allows them to really participate in the economic section of the global credit and financial market. Acting in many regions of the world and having huge assets, TNB actually control interstate currency and financial flows, as well as economic processes within individual countries. This expansion of transnational capital is based on strong state support. The main signs and benefits of the transnationalization of the banking business are presented in table 1.

Table following on the next page

Transnationalization of banking business	
Signs	**Benefits**
TNB activities should go beyond the borders of the domestic market, and the bank's external operations should be systematic, sufficiently independent, large-scale, and therefore tied to major global monetary and financial centers.	Relatively stable and stable functioning, which is a consequence of both a high level of concentration and centralization of capital, and the ability to distribute existing risks through the diversification of activities.
TNB must fulfill all the basic financial functions necessary to ensure the movement and activities of multinational companies, and carry out their banking services around the world.	To provide work with huge financial and investment flows simultaneously on all or at least most of the segments of the global market that interest customers.
TNB should have an extensive network of overseas branches in the form of a holistic mechanism that allows to quickly and flexibly accumulate and redistribute loan capital.	The ability to maximally satisfy large-scale financial and credit, consulting, information and other needs of their customers.
TNBs are created with the aim of expanding the volume of the bank's international activities, and in terms of the scale and diversification of operations, they are often significantly superior to the parent companies.	The ability to provide, in accordance with the client's choice, the full range of necessary services for financing international trade, investment and money management at a high quality level.
Foreign operations of TNBs should bring a stable and increasing share of profit in their total income, which has a significant impact on the performance of the bank as a whole.	The availability of funds, resources and other potential for continuous technical, technological and personnel development, ensuring the efficiency and reliability of their work.

Table 1: The main signs and benefits of the transnationalization of the banking business (Source: developed by the authors)

The market capitalization of the largest multinational banks as of 2017 is shown in figure 1.

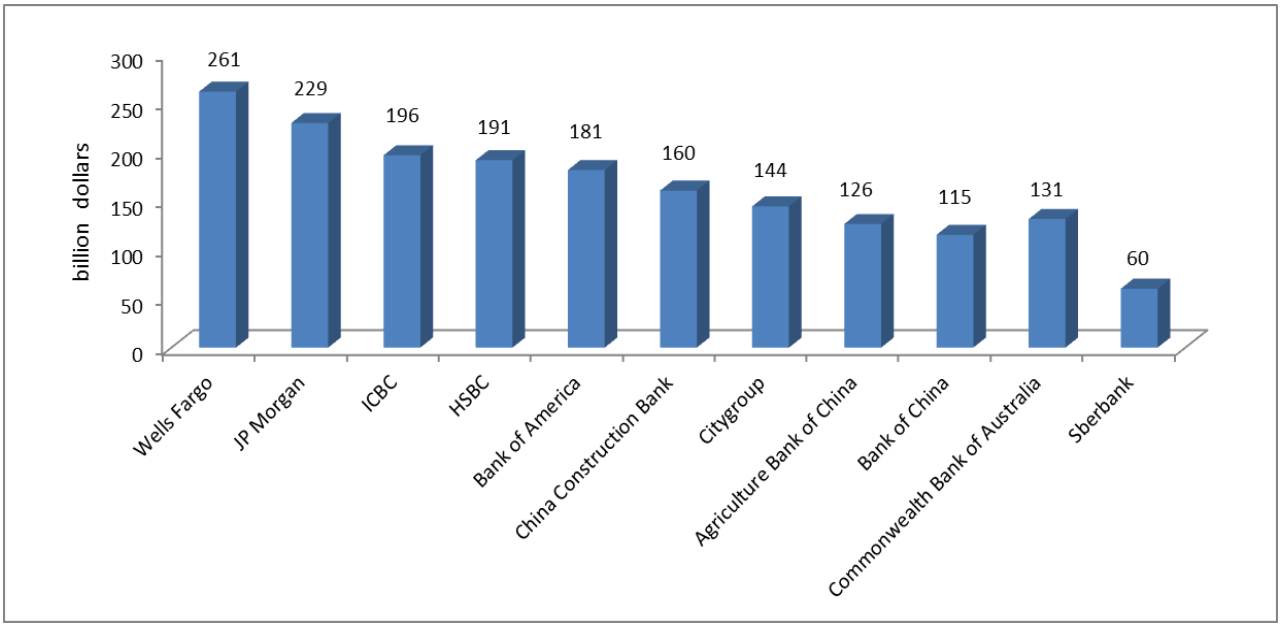

Figure 1: The size of the market capitalization of the largest transnational banks in 2017 (Source: developed by the authors using data from The Banker and Forbes)

As can be seen from figure 1, among the leading TNBs in the world ranking by market capitalization, American and Chinese banks prevail, which compete with each other in the basic indicators of banking activity. This is clearly demonstrated in figure 2.

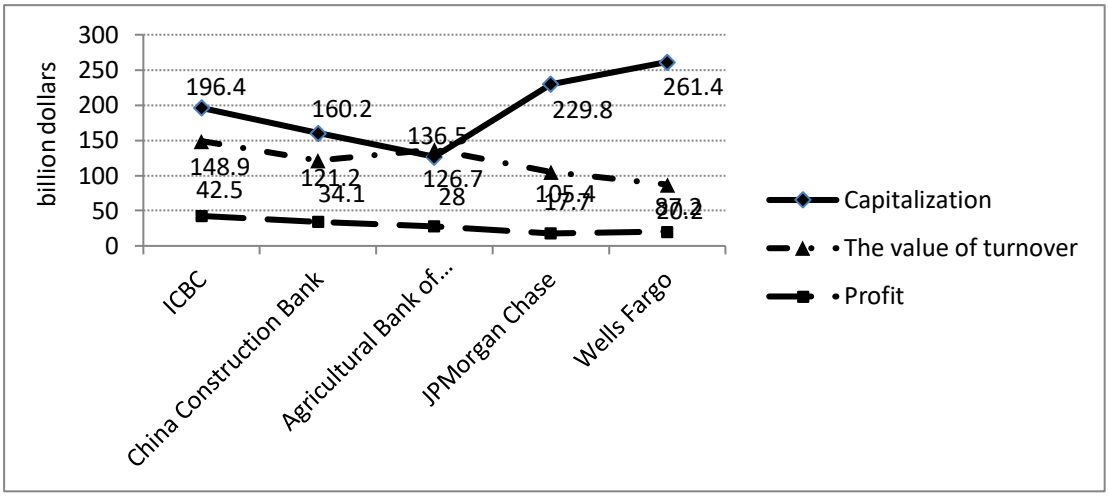

Figure 2: The largest TNB in the world by selected indicators in 2017
(Source: developed by the authors using data from The Banker and Forbes)

In the table 2 presents the main factors of the impact of TNBs from advanced economies on the country's economy – the recipient of capital.

Factor	**Nature of the impact**	
	+	–
Competition	Development of a range of financial services in a recipient of capital	Market capture, suppression of national companies
Technologies	Introducing advanced digital technologies and quality management systems into the national economy	In order to reduce costs in developing countries transnational banks from developed economies can use outdated technologies (thus, knowingly laying down their technological advantage)
Investments	Assistance in attracting foreign direct investment	Acquisition of control over national companies
Taxation	Tax revenues from transnational banks' activities increase budgets of various levels of government	In order to reduce tax payments, transnational banks can underestimate revenue by withdrawing capital from the home economy
Labour resources	Transnational banks contribute to local employment growth	Focus on cheap labor, imposing a policy of non-disclosure of acquired knowledge

Table 2: The main factors and the nature of their impact host economy
(Sourse: Petrov, Abramov, 2020)

It is important to note that as a result of the consequences of global disasters, serious shifts have occurred in the transnational banking community. The role of key drivers of the global financial market is gradually shifting to developing countries, which is also confirmed by the ratings of the largest companies/banks in the world. Their analysis allows us to make the following generalizations:

- Ratings reflect a dramatic change in the landscape of global banks, in particular, the power that the banking "giants" of developing countries are gaining.
- There is rapid growth, successful development and high popularity of Islamic banking.
- Despite such an offensive advancement of Asian (especially Chinese) banks, American and Western European banks still hold the lead in terms of certain banking activities (for example, market capitalization).
- The global crisis, which began precisely in the financial and banking sector and particularly affected the TNB (primarily investment), significantly worsened their economic performance.

At the same time, assessments of TNB activities and their impact on the development of national economies and economic security of states are rather ambiguous and have both positive and negative content. This involves the development of an effective system to ensure a balanced distribution of benefits between the host country and the TNB, and the conditions for the transnationalization of domestic banking structures.

4.2. Digitalization of the banking business

Favorable conditions for the innovative development of the IBB are created by the digitalization of the banking business. However, this influence has not been studied enough and requires further research, taking into account the objective function of this activity (Manyika et al., 2016, 31-43). The formation in recent years of a new look of the MBB in accordance with international standards and the growth of the market associated with it objectively require the subsequent activation of its digital component. Moreover, the latter must be considered in conjunction with the changes in the IBB and its regulation. The digitalization of the trade finance (TF) by global banks lagged behind digitization in other segments of the IBB. However, the mutual influence of a number of factors, including the development of correct technical capabilities, an almost general shift in trade on open account and broader decision-making with the support of information technologies, have now created a certain impetus for the development of this vector of digitalization (Malaket, 2016, 14-15). TF solutions are increasingly being developed using the basic blockchain platforms. The implementation of the clearing and settlements on the basis of this technology will save 50- 60 billion dollars in expenses for interbank transactions between businesses (Botta et al., 2016, 3-4). Given the potential of the blockchain and on its basis, a number of TNB have developed a common concept for a trading platform, which is considered as an open ecosystem that allows you to verify the authenticity of funded trade documents (Shapiro, 2017, 43-44). An analysis of the important instrument of the IBB – letters of credit of forms of settlement – revealed a tendency towards a decrease in the activity of their use, starting in 2014, with a simultaneously observed trend of unmet demand for TF (Rethinking Trade, 2017, 24, 89). All this necessitates the development of proposals for the digitization of documents for a letter of credit, contributing to the acceleration of the implementation of this form of bank settlements. This is of particular relevance for countries in which the commodity sector predominates in foreign trade (in particular, for Azerbaijan and Russia), since it is here that a significant part of the activity is carried out on the terms of the form of credit. All this testifies to the growing role of digital technologies for the IBB in the context of implementing the imperatives of a new paradigm of financial globalization.

4.3. Increasing scale of asocial behavior of international and multinational banks

International banking is weakly connected with morality and ethical life. The term “patriotism” is absent from banker’s lexicon at all. This goes even to those bankers who established network of affiliates abroad but govern it from a single national headquarter. Top managers’ bonuses are another asocial element in international banking, especially when they are being paid in time of national or global systemic crises. They run counter to common sense. Executive bonuses often exceed by several times employee’s compensation. Under pressure of society banks have changed forms of such payments from cash to bonds or shares. The EU adopted some legal acts which restrict bankers’ bonuses by a twofold salary size, but debates over necessity of state regulation in this sphere are still on. The wide-spread “coronacrisis” of 2020 hasn’t changed much in the system of banking capital distribution. In major economies banks continue to pay dividends to bank owners, to give bonuses to managers, as well as to do buybacks of their shares. Curiously, but none of such forms was touched by regulative restrictions in the USA, Japan, China (Svoronos, Vrbaski, 2020, 6).

As for countries with some prohibitions, their banks proved to be slyer and got their benefit anyway. Waiting for future bans on the payments enumerated above before the coronavirus pandemic, largest western banks payed huge bonuses to big bosses. British banks alone payed millions of pounds. According to the Guardian, Big Fives of British banks payed more than half a billion pounds to top-managers just before the crisis of 2020. Much more than in previous years, because annually more than 1 thousand of CEOs had more than 1 million pounds of such payments each (Partington, 2020). The intention to exclude these payments from the EU supranational banking regulation was one of the most important reasons for Brexit. Credit-rating agencies share moral responsibilities with banks for unbalances of incomes and capital control in global financial system formed for years. They often put companies and countries in debt troubles hotfoot, proactively downgrading their rating estimates. But in the case of debt instruments of sovereign borrowers with global political power and influence (the USA or Japan, for instance), these agencies steadily hold their ratings on the AAA level. Enormous and unpayable in full governmental debts of these countries remain negligible in their analysis. Structured securities also have high ratings, although an asset with low quality can lay in the base of packed and repacked debt instruments. Globally operating banks often buy and keep these instruments in their investment portfolio. International requirements (Basel standards) and national banking acts formally become stronger, but they still claim insignificant coverage of such risky assets by bank capital (1,4%), although they designed to combat and prevent threats to stability of the world banking industry (Jenkins, 2015). Multinational banks competently maintain resilience and absorb losses during financial shocks using capacities and capital of their foreign affiliates. Thus, markets do not properly clear themselves from worst-managed and highly risky credit institutions. Because of that banking transnationalization stands society to lose. Moreover, crises firstly kick cross-border credit activity of multinational banks. Last several decades annual changes of such credits were less stable by size, than local credits delivered by foreign entities of multinational banks in host countries. During the period of "Great Recession" in 2008-2009 cross-border banking credits in all currencies to all countries dropped by -12% in 2009 from two-digit figures of annual growth in previous years (with the record level of 2007 (+24%)). Then they returned to +10% in 2015 (Borio et al., 2015). Locational credit activity almost stayed on the same level with 5-7% of changes. A number of parent banks with losses in balance sheets were saved from bankruptcy by their foreign entities. In some cases, digitalization of banking activity seems to be more beneficial for banks, than for their clients. Most new electronic banking products come up in a user-friendly manner. The easy availability of digital products has become a heavyweight argument to buy them, although the same products offered to the customer offline, in office, would not be so interesting for him. The obstruction of electronic insurance against theft money from your banking cards when you order them in your mobile application for smartphones is the most vivid example of such inappropriate behavior of banks. Moreover, the size of such insurance premiums often is disproportionate to authorized limits and, additionally, banks must do their best to remove risk of probable thefts of money from clients' cards and stop any operation if it is suspicious. But no, banks seek additional sources of income. There is another problem of inconsistent operations of international banks. A few years ago market integrity and public calm were broken by disclosed evidence of the LIBOR rate fraud. The biggest banks of the world were involved in this scandal. They manipulated the rate and about $400 trillion worth of financial contracts turned out to be threatened. International banks help themselves by announcing interest rates which were used in the LIBOR rate calculations, gave them opportunity to earn additional profit, but did not correspond to real value of money in the market. Business society and common people were caught completely off guard. The solution of this problem had yet been found.

5. CONCLUSION

Transnationalization of banking business which created globally connected banking markets and digitalization process help internationally operating banks to evolve efficiency and to be confident even in crises. But these trends did not change the nature of banks. They are still in the pursuit of profit. And there are so many facts that they still do it to the detriment of public interests. Transnational and digital activity give banks necessary tools to use imperfections of international business environment, such as inadequate requirements to banking capital, different value of money throughout the world, imperfect mechanisms of calculations of the most important financial indicators like the LIBOR rate, manipulation customers' preferences with digital technologies and electronic ecosystems of banks, which tie clients to them. Society still needs to have means of controlling banking activity and means preventing damage to public interests. And certainly they must not be worked out only by people from the most developed nations, because trends and problems of international banking activity described here are common for all countries.

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CREATIVE ACCOUNTING AND ITS POSSIBLE NEGATIVE IMPACTS IN SELECTED COUNTRIES OF THE CENTRAL EUROPE REGION

Boris Kollar
University of Žilina, FPEDAS, Department of economics
Univerzitná 1,010 26 Žilina, Slovakia
boris.kollar@fpedas.uniza.sk

ABSTRACT
The article is focused on creative accounting, whose application depreciates the main function of financial accounting. It explains the concept itself and classifies creative accounting practices as a process of manipulating accounting data and as a process economic transactions usage. It deals with a specific area of earnings management and within that, it is the practice of income smoothing and big bath. It also lists the motives, highlights the possible prevention that can be applied and assesses the consequences associated with the use of creative accounting. It also focuses on the practices of creative accounting in the Slovak and Czech republic. The enumeration is not of course complete, because the creativity of the actors in this game of numbers is boundless. It turned hence, attention to the areas of accounting that are most often misused to misrepresent data financial position of the company. The part named classification of creative accounting is divided into two groups, which should, reflect the economic nature of these manipulation, which is important in the process of their recognition.
Keywords: *Creative accounting, Economic impact, Comparison, Prevention, Earnings management*

1. INTRODUCTION

The notion of creative accounting has become widely known, especially in the context of the collapse of the large energy company Enron. The collapse of the business has triggered a series of bankruptcies of other businesses, not only in America but worldwide. That's why many consider Enron today, to be a symbol of creative accounting. (Ababneh, Aga 2019) Creative accounting can be considered as a distortion of the reported results. The distortion of the reported results is deliberate. If the intention is shown to the compiler, it is a crime classified as economic crime. Thus, creative accounting is an accounting practice that intentionally misrepresents the reported financial statements. The aim is to achieve the personal benefit of the compiler. Generally, creative accounting is the process of manipulating accounting data. Where to transform financial statements from, what they should take to what their creators would like (Khanh, Thu 2019). Accounting manipulation techniques are increasingly sophisticated, which makes it even more difficult to detect fraud. The only difference is whether they are more or less visible. Usually, a high professional classification is needed to detect them.(Valaskova, Kliestik, Kovacova 2019) However, even the auditors themselves find it difficult to detect. Different forms and techniques of purposeful misrepresentation of accounting data have in common with creative accounting that they are manipulation of accounting information. (Ionescu 2019) Individual manipulation techniques are distinguished from each other according two views. The first one is specific technique of data distortion and is more or less obvious. The second view is to reveal it, but a high professional qualification of auditors is required. The best known accounting manipulation techniques are off-balance sheet financing and window dressing. Motivation for managers and accountants to use creative accounting may arise from personal reasons, business reasons, or a combination of both.(Sosnowski 2018) We divide motivation for creative accounting into three basic groups. The first group is the management's desire to receive a bonus/loss (Misankova, Spuchlakova, Frajtova-Michalikova, 2015).

The bonus depends on the amount of profit. So the higher profit is, the higher is also bonus. Alternatively, the bonus is paid out only, if a certain amount of profit is reached. Consequently, it may have an impact on financial accounting, such as costs and expenses, which are not fully listed, overvalued assets, undervalued liabilities etc. The second group of incentives for creative accounting is that the company is trying to pay lower taxes. The profit of an entity adjusted for attributable and deductible items is the tax base. It is taxed on corporate income tax. (Hoang, Joseph 2019) The lower the tax base is, the lower is the tax. This may have potential effects on financial accounting, for example in the case of undervalued earnings. Althoug, costs and expenses may be overestimated. Overvalued liabilities or assets may be underestimated and the like. (Assenco-Okofo, Ali, Ahm 2020) The third group of incentives for creative accounting is that a business needs a loan or wants to get a loan at a preferential interest rate. The lower the risk to the lender is, the lower is the interest rate he is willing to demand for granting the loan. A possible impact on financial accounting is that they can minimize persistent claims, overvalued income and assets, or undervalued liabilities (Belas, Smrcka, Gavurova, Dvorsky 2018). Off-balance sheet financing is the financing or refinancing of business activities that may not appear in its balance sheet when complying with the legal requirements of existing accounting policies. Generally, off-balance sheet financing can be defined as a method of financing, where the assets and liabilities are not relevant in the balance sheet of the business. However, they appear in the balance sheets of other enterprises. (Suler 2017); (Valaskova, Kliestik, Kovacova 2018) The following main techniques are used in off-balance-sheet financing. Incorrect lease reporting is meant to replace a finance lease with an operating lease. It also work with the idea that loans are considered as sales. In this case loans are classified as equity. Another area is reporting of liabilities/debts. Last but not least, the failure to report liabilities results from non-payment of the receivable, etc. (Khudair, Sabah, Rawad 2019). The second technique is window dressing. The purpose of this technique is to manipulate the accounting data so the statements take the form that suits the management of the enterprise. Therefore, this technique should be considered as transaction, where the financial statements give misleading data or an unrepresentative picture of the financial situation of the organization. The main techniques that are used in window dressing include not following the precautionary principle in accounting. Distortion of revenue recognition that does not meet their definition. Replacement of property modernization for property repair and vice versa. (Rybicka, Rybicki 2018) Intentional reporting of short-term assets and debt between non-current assets and vice versa. Also, the distortion of valuation of assets in the balance sheet at the time of acquisition and at last but not least, the choice of depreciation method - bad estimate of useful life etc.

2. METHODOLOGY

The way of uncovering creative accounting fraud is also important. One of the methods of estimation is internal prevention and tightening of accounting standards. This includes higher prevention within the company. This prevention concerns the powers and responsibilities of the managers or owners who most often try to manipulate the results of the business. The internal control system should detect and report intentional errors in a timely manner, because they lead to distorted results.

2.1. Ways of uncovering creative accounting

Within international standards, these problems can be tackled in the ways mentioned bellow.

2.1.1. Internal prevention

The first is the adoption of stricter accounting standards. More standards that focus on accounting in problemaic areas. Also, more disclosure requirements for accounting data and to

give more priority to content over form and at last but not least, to the adoption of more detailed regulations concerning accounting in the company and so on.

2.1.2. Benford's law

The second is Benford's law. It is a mathematical law that says that in many but not all natural data sets, numbers more often begin with a 1 than another. Thus, more than 30% of the whole set of natural data is a unit starting with. Benford's law is recommended to be used when there are significant differences between the population status indicators. In accounting, most accounts consist of transactions that are combinations of different numbers. For example, receivables. The numbers are created by multiplying the unit price by the number of items sold. Each group consists of a different statistical distribution. Similarly, the undertaking's obligations also work. This is also reflected in the number of transactions in your account. According to Benford, accounting law does not match the assigned numbers, such as control and order numbers. Numbers that are influenced by human thinking and decision making. For example, prices of products and services created for psychological effect. Furthermore, the figures for which maximum and minimum limits are set. For example, when items are included in an asset, the cost may be determined by law for both tangible and intangible assets.

2.1.3. Forensic audit

The third way is forensic audit. Forensic audit is referred to as a type of audit activity aimed at detecting accounting fraud. Also, embezzlement, similar unlawful statuses or acts within the entity. It is very difficult to prove that fraud has been committed in a given undertaking. Auditors carrying out a forensic audit shall have conclusive evidence and facts. Fraud is a crime that is committed intentionally. It causes benefits that do not comply with the legislation. These benefits from the perspective of forensic audit are, for example, manipulation of financial statements, which may not always be committed as a criminal offense. The reasons for the misrepresentation of financial statements are the most common attempts to reduce the tax base. However, the opposite intention is to artificially improve the results achieved, so that the company provides positive information to the public. The motive of distortion of the financial statements is mainly employees. Because their rewards depend on the results achieved or receive dividends from employee shares. Another subject is managers who are remunerated from the economic result. They want to present the company in a better light in front of banks, the public and the competition. Forensic audit is based on document analysis and financial analysis. Facts and data are being collected and exclude or confirm various scenarios. The investigating team analyzes databases, emails and interviewing employees. One of the investigative methods is the possibility of sending “secret agents” to the work team. The procedures for investigating a fraud enterprise are as follows. Initial panic and typical mistakes should be avoided. Don't lose control of the information flow. Evaluate findings based on how real they are and not what they appear to be. Those who seem guilty do not really have to be guilty. Be careful not to break the law in the investigation and also not to divulge the investigation and the information found.

2.1.4. Due diligence

Also known as an in-depth review of the business. It is a term that originates in US law and commercial practice when concluding commercial contracts. It is used in two basic meanings. Especially in the US, this term refers to the usual care in business relations between two companies. It is referred to as a comprehensive audit in European countries. That is, due diligence or review of the company. Due Diligence is usually carried out on the sale of the business, acquisition, majority investment of the investor. Also as a grant of credit because of a comprehensive examination of the situation.

The result of this method is to confirm the accuracy of all the facts relevant to the sale and the certainty of the parties involved. This also applies to the conclusion of commercial contracts. Due Diligence is divided into seven basic groups. The first is tax deu diligence. This includes, for example, the verification of assets and their depreciation. Creation and release of provisions and reserves. Tax documents in the context of the Income Tax and VAT Act, etc. The second group is legal de diligence. Here the property part of the partners is checked. Composition of shareholders, labor law and credit relations, etc. The third group is financial due diligence. It is an in-depth control of the target company's accounting in the context of compliance with tax legislation. The fourth group is operational due diligence. The effectiveness of the whole operation and transformation process in the company is examined. The feasibility of a business plan and the synergy effects of a merger are assessed. The fifth group is market due diligence. The position of the company on the market is assessed here. Its competitors are examined, strengths and weaknesses of manufactured products are assessed. But also the services provided. The sixth group is presonal due diligence. Personnel and managerial capacity of the company sits. This part of the screening is especially important. If the acquisition or merger would result in mergers between different cultures or the interaction of different functions. The last seventh group is technical due diligence. It is mostly carried out when an undertaking operates in the field of information technology. The world has been dealing with the issue of creative accounting for many years. The problem has been overlooked many times. Because there were not many experts on this issue. The occurrence of creative accounting is related to practices that go against legislation. In fact, it is the use of legislation which, through its formulation, makes it possible to exploit illicit practices. Therefore, the aim of this article is to compare the use of creative accounting in the Slovak Republic and the Czech Republic. The research sample was Slovak and Czech companies. The results will be a comprehensive view of businesses that have encountered economic crime. Also forms of economic crime and outlook expectations vs. real estate in the Slovak Republic and the Czech Republic.

3. RESULTS

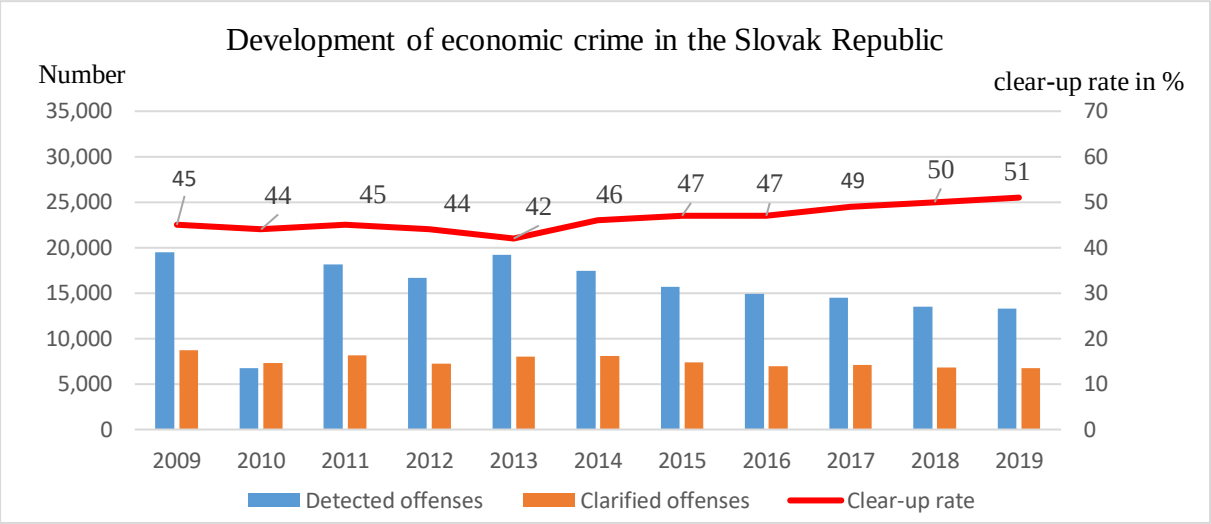
Based on the data, an analysis of economic crime in the Slovak Republic and the Czech Republic was carried out. Data are from Slovak enterprises are from statistics of Slovak crime, Czech enterprises are from statistics of Czech crime. The analysis has been carried out over the last ten years. So from 2009 to 2019.

3.1. Creative Accounting in the Slovak Republic

In the territory of the Slovak Republic, economic crime is very diverse and has many forms. These include accounting fraud. Creative accounting belongs to the accounting fraud group. An overview of the development of economic crime for the period from 1 January 2009 to 31 December 2019 is shown in Chart 1.

Figure following on the next page

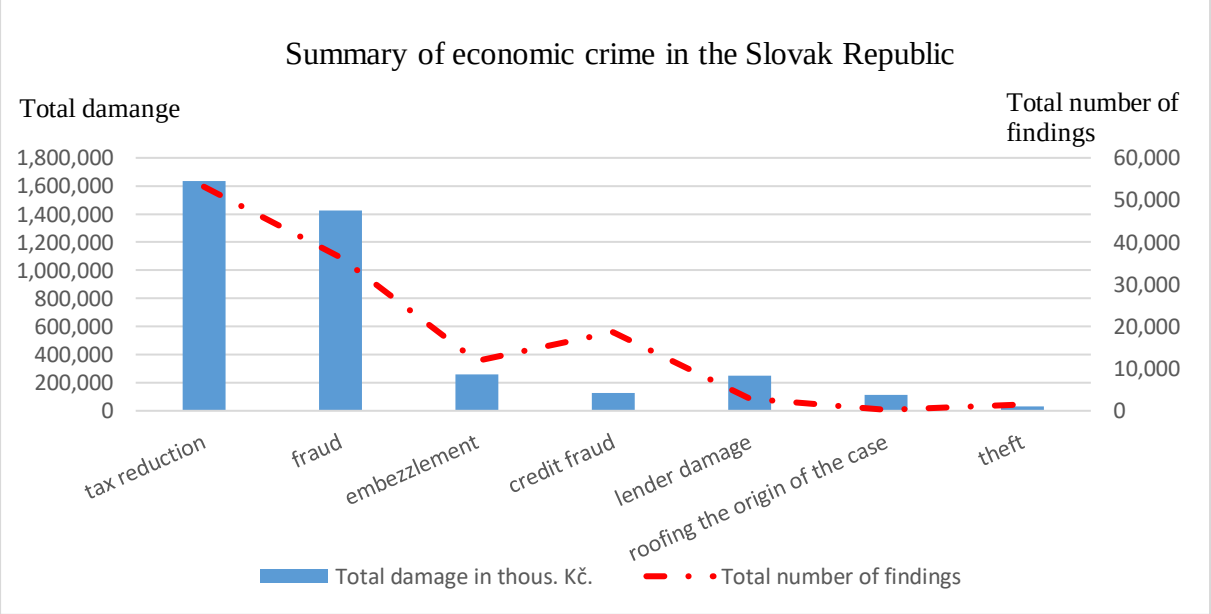
Figure 1: Overview of economic crime development in the SR



(Source: Own processing according to criminality statistics of the Slovak Republic)

Figure 1 shows the number of crimes detected, crimes solved and the rate of detection as a percentage. In 2009, the number of offenses detected was 19,518. In 2010, the number of offenses detected was 6,781, which represented a decrease of 65.26%. In 2011, the number of offenses detected rose to 18,145, which represented a 167.56% increase. Which probably constituted a more stable business environment. The environment in which businesses operate is evolving. This also applies in particular to the risks that may have an impact on economic crime. In 2011, the Slovak Criminal managed to detect long-term fraud. The detection of long-term fraud was mainly in the area of asset misappropriation, which represented 67%. In addition, it was also possible to detect fraud in other long-term frauds that lasted 5 years. They were in the area of cybercrime and the buying process. Also, 23% was also revealing long-term corruption and bribery of businesses. In the following years, the rate of crime detected was approximately the same. The maximum spread between them was only 10%. Figure 2 shows the most significant forms of economic crime in €.

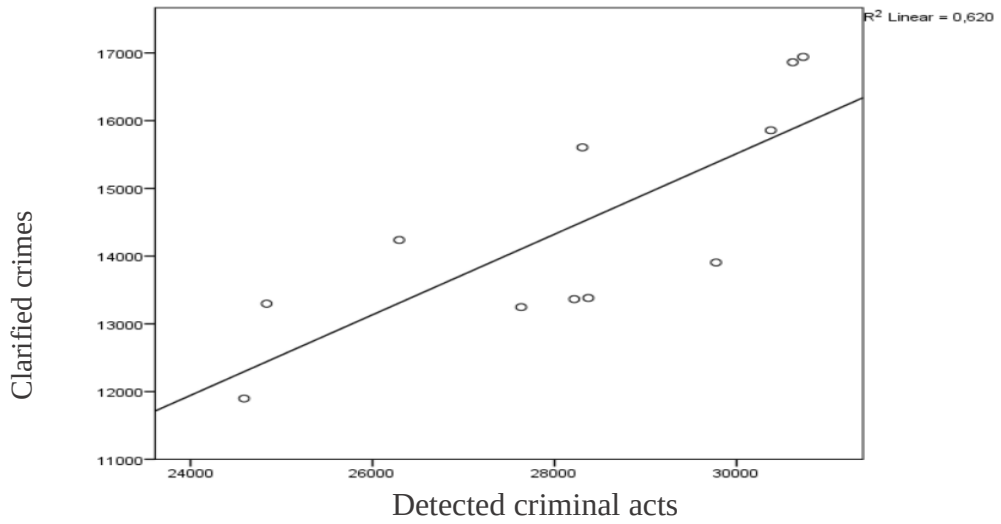
Figure 2: Summary of economic crime in the Slovak Republic



(Source: Own processing according to criminality statistics of the Slovak Republic)

Figure 2 shows the total damage to the most serious crimes of economic crime. The graph summarizes the offenses total and total offenses detected. The largest number of forms of crime is tax cuts. In 2010 it amounted to 156,823 €. The smallest value of tax reductions was in 2015. This was € 93.834. Thus, a 40.17% decrease compared to 2010. The second largest category are fraud. In 2012, they reached a peak of € 526.126. Where in 2019 the lowest number of frauds was recorded, up to 57,380. Compared to 2018, this is a decrease of 17.26%. Fraud and damage to the lender were about the same. Also, theft and roofing of the origin of things were about and of the same level. The smallest category of forms of economic fraud was theft. For example, in 2011 it was € 820 and in 2017 it was even less € 609. In 2019, thefts in the area of theft increased again by approximately 60.79%. The Slovak Republic seeks to detect as many frauds as possible within the framework of creative accounting. Therefore, we decided to carry out a regression analysis of the factors detected and clarified by the offenses. First, we set out the null hypothesis that the crimes solved are linearly independent. Subsequently, an alternative hypothesis was established that the crimes solved are linearly dependent. The second step was to adjust the significance level α, which was 0.05. The first step was to find out what dependence exists between the detected crimes and the cleared up crimes. The Scatter / Dot-Simple Scatter chart was selected to express dependency. Graphical dependence is the Figure 3.

Figure 3: Graphical dependence of variables



(Source: Own processing)

The value R2 is the derermination coefficient. Determines the quality of the regression model. Thus, how many% of the variability of the dependent variable is captured by this line. The closer R2 to 1 is, the better the linear model captures data. The coefficient of determination is the square of the correlation coefficient r. Thus, in our case, r = 0.787. What it says about the direct direction of linear dependence and the dependence is moderate. Subsequently, the correlation coefficient was calculated in the SPSS statistical program and its statistical significance was tested. The test result is shown in Table 1.

Table following on the next page

Table 1: Calculation of the correlation coefficient

		Decented offfeneses	Clarifies offeneses
Decented offeneses	Pearson Correlation	1	0,787*
	Sig.(2-tailed)		0,004
	N	11	11
Clarified offeneses	Pearson Correlation	0,787	1
	Sig.(2-tailed)	0,004	
	N	11	11

** Correlation is significant at the 0,01 level (2-tailed)*
(Source: Own processing)

From Table 1, clarified offenese are important as they are dependent on the number of offenses detected. Therefore, we will consider the second table. Pearson Correlaion is a correlation coefficient of 0.787. Sig. (2-tailed) is a test of statistical significance of the correlation coefficient. If p value is <α, the hypothesis H0 is rejected, if not vice versa. In our case, the hypothesis zero rejection and correlation is statistically significant and variables are linearly dependent. Another important step was the regression analysis. In this analysis, we again had to establish a null hypothesis. Thus, the model is statistically insignificant. In addition to this hypothesis, we have established an alternative hypothesis that this model is statistically significant. In this analysis, the significance of this model as a whole was tested. We tested whether this type of regression was correctly selected and whether the model was statistically significant. The results are shown in Table 2.

Table 2: Regression calculation

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	1 16905417,480	1	16905417,480	14,678	,004
	Residual	10365627,429	9	1151736,381		
	Total	27271044,909	10			

** Correlation is significant at the 0,01 level (2-tailed)*
(Source: Own processing)

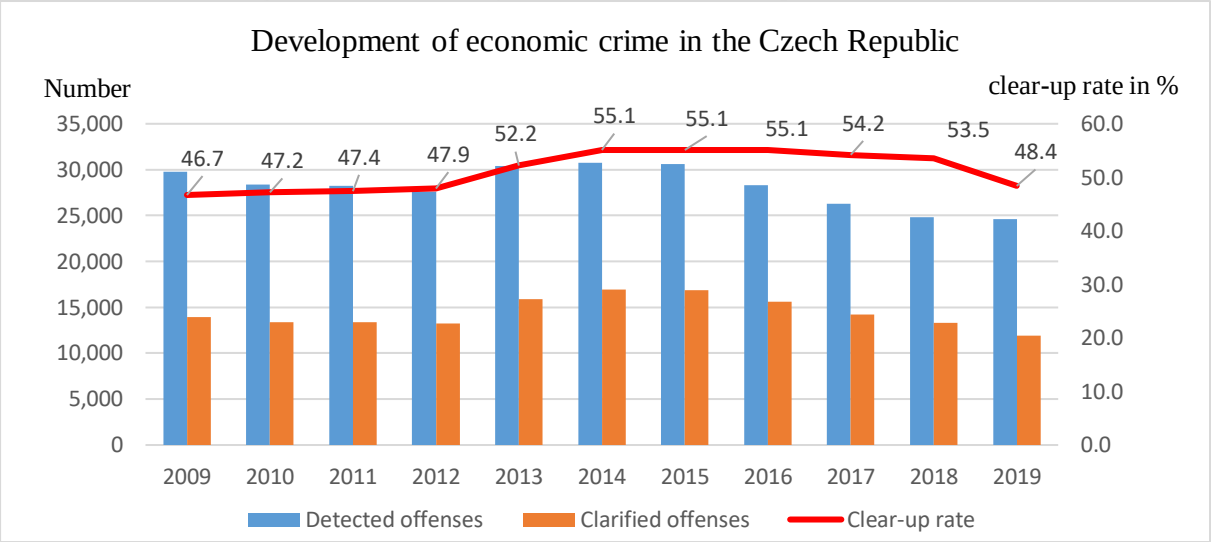
From Table 2 the most important is Sig. It is the p value of the significance test of the model as a whole. We compare them with the significance level α. If p-value <α, H0 is rejected and vice versa. In our case, 004 <α. Thus, we reject the null hypothesis and accept the alternative hypothesis. Our model is statistically significant.

3.2. Creative accounting in Czech republic

An overview of the development of economic crime in the Czech Republic for the period from 1 January 2009 to 31 December 2019 is shown in Figure 4.

Figure following on the next page

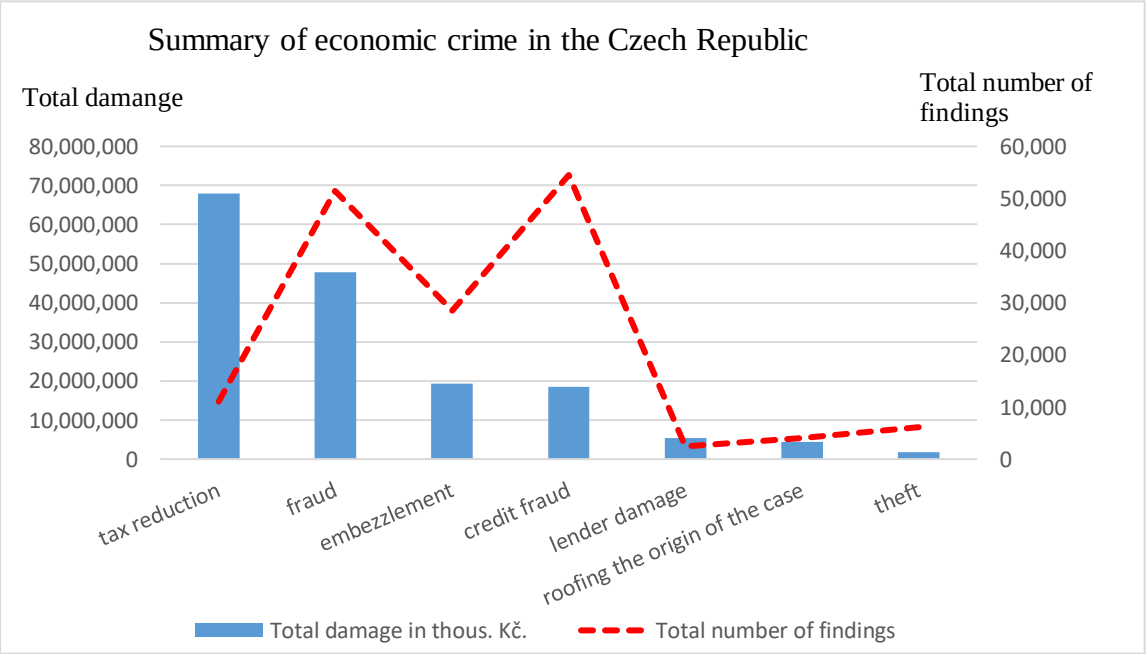
Figure 4: Overview of economic crime development in the CR



(Source: Own processing according to criminality statistics of the Czech Republic)

Figure 4 shows the number of crimes detected, crimes solved and the rate of detection as a percentage. In the first 3 years of the detected offenses it represented approximately 4%. In 2013 and 2014, the number of offenses detected increased by approximately 10%. In 2015, the number of seats by 0.37% compared to 2014. However, in 2016 and 2017 the offenses detected were approximately 7% less than in the previous year. In 2019, the number of offenses detected decreased by 1% compared to 2018. The Figure 5 lists the most significant forms of economic crime in the Czech Republic in their currency.

Figure 5: Summary of economic crime in the Czech Republic



(Source: Own processing according to criminality statistics of the Czech Republic)

Figure 5 presents the total damage of the most serious subcrimes of economic crime. The graph summarizes the offenses total and total offenses detected. The largest number of forms of crime is tax cuts. In 2014 it amounted to 8.572 mil. €. The lowest value of tax reductions was in 2018. Compared to 2017, this is a decrease of 5.88%.

The second largest category is fraud. In 2009 they reached 5,820 mil. €. Over the next 9 years, the fraud rate was around 10%. In 2019 the total damage amounted to 6.198 mil. €. This represented an increase of 61% compared to 2017. Fraud and credit fraud were about the same. Also the damage to the creditor and the roofing of the origin of the case were of approximately the same level. The smallest category of forms of economic fraud was theft. For example, in 2015 this represented 82,331 Czech crowns. In 2017, the total damage in the category of theft rose by 52.35%.

4. CONCLUSION

A comparison of the evolution of the summary figures of economic crime in the Slovak Republic and the Czech Republic shows that the number of crimes is gradually decreasing in both countries, but while the level of detection in Slovakia has improved, it has worsened sharply in the Czech Republic. There are quite a number of motives for committing economic crime. Within the scope of the present article, it has been identified as the most common findings as the company's stated objectives are difficult to achieve. People are worried about losing their jobs, managers are often rewarded according to their achievements. Achieving performance bonuses is often only possible by correcting reported results. Company management wants to show the required level of financial performance. The company wants to present to the public better information about itself than it actually achieved. No previous period bonuses were paid out.

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APPLICATION OF THE KOTHARI MODEL TO ASSESS THE EXISTENCE OF EARNINGS MANAGEMENT IN ENTERPRISES IN THE CZECH REPUBLIC

Lenka Strakova
The University of Zilina, Faculty of Operation and Economics of Transport and Communications, Department of Economics
Univerzitna 1, 010 26 Zilina, Slovakia
lenka.strakova@fpedas.uniza.sk

Peter Adamko
The University of Zilina, Faculty of Operation and Economics of Transport and Communications, Department of Economics
Univerzitna 1, 010 26 Zilina, Slovakia
peter.adamko@fpedas.uniza.sk

ABSTRACT
Accounting is one of the main areas of business focused on providing a true and truthful picture of the financial situation of enterprises not only in the Czech Republic but also in enterprises operating worldwide. Accounting provides important financial information through which it can influence the understanding of earnings management. Using earnings management techniques, managers can influence the amount of reported earnings and thereby manipulate it. Since earnings are an important indicator of the financial performance of a business, managers are trying to impose their amount so that, in the awareness of external entities, such as investors, the business shows a positive financial situation. One of the main reasons why many enterprises use earnings management to manipulate their earnings is to achieve a predetermined and positive value of earnings and, based on it, to present a positive financial position of the enterprises. This paper focuses on the assessment of the existence of earnings management in the Czech Republic in the period of 2015-2017 by applying the model of the author Kothari. The model is applied to a set of Czech enterprises using estimation of discretionary accrual, assessment of the existence of earnings management and determining the direction, degree, and scope of earnings management. The main aim of this paper is to find out whether earnings management occurs in companies in the Czech republic and whether Czech enterprises manipulate their earnings downwards or upwards. In our research, we realize statistical analysis in which we use the modeling method and comparison method.
Keywords: *Accrual, Discretionary accrual, Earnings management, Non-discretionary accrual*

1. INTRODUCTION

Accounting is one of the main areas of business focused on providing a truthful picture of the financial situation of enterprises not only in the Czech Republic but also in enterprises operating worldwide. Accounting provides important financial information which is an effective tool for the evaluation of enterprise financial efficiency (Vochozka, Rowland and Vrbka, 2016). One of the important statements is the financial statements, which play an important role in attracting investors and therefore the management of the company strives to maximize the results of the financial statements (Susanto, Adrianne and Pirzada, 2019). Through financial information, it can be influenced by the understanding of earnings management. These reasons contributed to the development of new methods of measurement and detection of earnings management (Misankova, Spuchlakova and Frajtova-Michalikova, 2015). Earnings management is one of the most challenging, debated, controversial and at the same time the most promising topics in finance and financial management (Valaskova, Kliestik and Kovacova, 2019).

It is an earnings management that enables business managers to use individual accounting procedures and at the same time create judgment related to the preparation of the financial statements of the company. The behavior of managers and their decision-making must ensure the accuracy, relevance, and reliability of accounting information (Harrower, 2019). The potential inability of entities using financial information disclosed in the financial statements to disclose abusive businesses has resulted in numerous scientific studies on earnings management.

2. THEORETICAL BACKGROUND

In the theoretical background, we explain earnings management from the perspective of several authors dealing with this issue. Then, we point to the main role of the accrual in the measurement and detection of earnings management. Ad the end of this chapter we provide an overview of empirical research contribution of measurement and detection of earnings management related to accruals.

2.1. What is earnings management?

Experts in the field have different views and opinions about earnings management. For this reason, many scientific studies are based on the measurement and detection of earnings management. Earnings management also represents the choice of managerial accounting policies to achieve specific objectives (Scott, 2003). Some of the authors dealing with the issue of profit manipulation distinguish between white, black and gray earnings management. White earnings management is one of the ways of accounting, which depends on the level of flexibility to help indicate private information about the future cash flow of the enterprise (Beneish, 2001). Black earnings management applies different techniques in an attempt to distort but also reduces the transparency of the enterprise's financial statements (Schipper, 1989). Gray earnings management makes use of the choice between opportunistic and economic accounting (Fields, Lys and Vincent, 2001). One author explains that reducing financial limitations of enterprise can be the goal of the earnings management, because of obtaining higher external capital (Sosnowski, 2018). Other authors take into account earnings management as a targeted intervention in the financial statements of an enterprise to achieve certain objectives. It is an activity in which an enterprise chooses an accounting policy without violating accounting rules (Callo, Jarne and Wróblewski, 2014). Earnings management represents a complex process involving the accounting judgment that underlies not only the income statement but also the other financial statements and related disclosures (Siregar and Utama, 2008). Earnings management also occurs when managers use judgment in financial reporting and in structuring transactions to alter financial statements because of misleading some partners concerning the economic performance of the company. It represents the selection of accounting policies made by the manager in terms of revenue as well as the achievement of specific reported profit objectives. Earnings management involves artificially increasing or decreasing sales, profits or returns through aggressive accounting tactics (Heally, 1985).

2.2. Accrual in measurement and detection of earnings management

Detection and measurement of earnings management are based on the quantification of accruals. There is a large extent of research examining the effects of characteristics of enterprises on earnings management practice, in which accrual plays a significant role (Khanh and Thu, 2019). Accrual-based measures more directly reflect earnings management (Hoang and Joseph, 2019). The emergence of a mismatch between cash flows and the accounting treatment of transactions encourages the creation of accruals (Kothari, 2016). Total accrual is divided into discretionary and non-discretionary accrual but in comparison to non-discretionary accrual, discretionary accrual is influenced by management, which results in earnings

management. Another difference between discretionary and non-discretionary accruals is that non-discretionary accruals are defined in the literature as a compulsory but not yet realized expense recorded in the books. While the discretionary accrual is an optional unrealized expense recorded in the accounts. The intensity of earnings management can be measure by the absolute value of discretionary accruals.

2.3. The empirical research contribution of earnings management concerning accrual

The available studies present many different and mutually contradictory factors that need to be taken into account in the strategic financial decisions of managers (Belas, Gavurova and Toth, 2018). Empirical research contribution involves numerous different models that have been constructed all over the world (Kovacova, Kliestik, Valaskova, Durana and Juhaszova, 2019). Each of the models uses the different intensity of measurement of earnings management (Hollowell, Kollar, Vrbka, and Kovalova, 2019). Healy (1985) used the average total accruals to estimate earnings management. The Healy model is based on the assumption that there are non-discretionary accruals during the "estimation period". It is a period within which earnings management is not expected to exist. The author considers that the managerial accrual policy relates to the incentive bonuses enshrined in their contracts, and thus the change in accounting practices affects the modification of the bonus payout plan. DeAngelo (1986) added Healy's model to the accrual of the previous period. The essence of the model is to estimate the non-discretionary accrual in the current year using the non-discretionary accrual from the previous year. One of the main earnings management studies is the Jones study (1991). The author uses accrual as a metric for earnings management purposes, which is further divided into two components, discretionary and non-discretionary accrual. The study of Jones tests whether enterprises that could benefit from import restrictions are trying to reduce earnings by earnings management during this import restriction. The results of Jones' empirical study support the initial hypothesis, pointing out that managers are doing accrual actions that reduce earnings during import restrictions. Dechow, Sloan and Sweeney (1995) point out that Jones' model is misspelled for extreme performance enterprises. They evaluate alternative models based on accrual items for detecting earnings management. Additionally, they evaluate the effect of cross-sectional and time-series models. These authors designed Jones' model and evaluated the effectiveness of earnings management measurements on two alternative models: the Jones model and the Modified Jones model. Since that time, several authors have focused not only on earnings management motives but also on the correct application and measurement of the purpose of earnings manipulation. Yoon and Miller (2003) follow the study of Dechow, Sloan and Sweeney (1995) where different models were used to determine the most effective method for detecting earnings management. Yoon and Miller examine the correlation between the operating performance of Korean industrial companies and the behavior of the discretionary accrual. They used four test methods such as average accrual item test, correlation test, regression analysis, and sign test to investigate whether operating performance affects the discretionary accrual. Moreover, the authors compared three approaches of accrual estimation in testing the earnings management hypothesis. They concluded that Korean industry companies are implementing earnings management. Dechow, Richardson and Tuna (2003) used a modified Jones model to test accruals as an explanatory variable for non-standard earnings distribution. The results of the test show that the variable is not sufficiently explanatory, with the result that low-earnings enterprises achieved the same level of accrual as higher-earnings enterprises. This means that in this case the accrual was not used by the company to increase or decrease earnings. Zang (2011) evaluates a comprehensive list of metrics designed to identify earnings management. It points out that the difficulty of assessing the strength of metrics to identify earnings management lies in the fact that earnings management is not directly observable.

Its results cast doubt on the ability of accrual-based models to capture "less serious" crimes, which, according to empirically, often documented in previous earnings management researches, are the rule rather than the exception of various forms of earnings management.

3. METHODOLOGY

To achieve relevant results in our analysis, we use the Amadeus financial database to obtain the necessary data. The total number of businesses generated by the Amadeus financial database is 21084937 enterprises. Of the total number, 491110 are Czech enterprises. The selection of Czech enterprises is based on the assessment of criteria related to defining the range of values for financial items sales, total assets, and earnings. Taking these criteria into account samples of Czech enterprises decreases to 6700 enterprises. After applying the financial criteria, we further classify Czech companies according to their ownership and whether they are dissolved or existing, private domestic, private international or private foreign. After applying the financial criteria, we further classify Czech companies according to their ownership and whether they are dissolved or existing, private domestic, private international or private foreign. When sorting and selecting a sample of Czech companies, we exclude those with missing data from our analysis, with the sample of enterprises dropping to 5313 and those showing extreme values, which was also reflected in the reduced number of Czech enterprises to 4842. For assessment of the occurrence of earnings management in Czech enterprises, we decide to apply the modeling method by the medium of which we propose the application of the Kothari model. For the estimation of discretionary accrual parts of a selected sample of enterprises, we use statistical analysis. The occurrence of earnings management we judge according to comparison obtained values of discretionary accruals of a selected sample of Czech enterprises and values of discretionary accruals of a fictitious set of enterprises. This comparison we realize by the medium of the non-parametric Mann-Whitney test. Direction, degree, and scope of earnings management we quantify by the medium of comparison of percentage values and average values of discretionary accruals.

4. RESULTS AND DISCUSSION

The existence of earnings management in the Czech Republic is verified by applying the Kothari model using accrual. We focus in detail on the estimation of discretionary accrual and determination of direction, scope, and degree of earnings management in Czech enterprises.

4.1. Estimation of discretionary accrual in the Czech Republic

To estimate the discretionary accrual, we use regression analysis to estimate the discretionary parts of the accrual for each enterprise within the sample of enterprises operating in the Czech Republic. By estimating the discretionary parts of the accrual, we can interpret the prediction error of the Kothari model. Based on an estimate of the discretionary parts of the accrual, we further quantify their descriptive characteristics, which are shown in the following table.

Descriptive characteristics	Discretionary accrual in 2015	Discretionary accrual in 2016	Discretionary accrual in 2017
Average	0.024281	-0.005777	-0.000087
Standard deviation	0.198818	0.140406	0.140098
Median	0.042296	0.006882	0.012323

Table 1: Discretionary parts of total accruals and their descriptive characteristics (Source: Made by authors)

In 2015, the highest average value was recorded at 0.024281. In 2016 there was a change and the average value dropped to -0.005777. In 2017, the average value was -0.000087. Based on the data in the table, we can see that the average values in 2016-2017 are negative. These negative values are an indicator of the downward earnings management in our selected file, which means that they are trying to manage earnings by reducing it. In 2015, however, the average value shows a positive value, which means that this year Czech companies are trying to drive earnings upwards (by increasing earnings). The highest value of the standard deviation was recorded in 2015 at the level of 0.198818. In the following years, the standard deviation value decreased. In 2016 it was 0.140406 and in 2017 it was 0.140098. In 2015, the median value was 0.042296. In 2016 the median value reached 0.006882 and in 2017 the median coefficient was 0.012323.

4.2. Assessment of the existence of earnings management in the Czech Republic

The next step in applying the Kothari model to companies in the Czech Republic is to assess the existence of earnings management. To assess whether earnings management occurs in a selected sample of Czech companies, we have created a fictitious file that does not take into account the existence of earnings management. We created a dummy file to evaluate the differentiation of the discretionary accrual. This differentiation can provide us with information on the manipulation of profits by Czech companies depending on whether it shows high, low or zero values. In the case of high differentiation values, profits are manipulated by Czech companies as opposed to low or zero values where companies do not manipulate profits. To assess the differentiation values, we apply the non-parametric Mann-Whitney test, which does not take into account the normal distribution of characters in the investigations of a set of Czech companies. Through this nonparametric test, he applies a null (H0) and an alternative (H1) hypothesis. The null hypothesis points to the non-manipulation of profits by Czech companies as opposed to the alternative hypothesis, which points to profit manipulation by Czech companies. To determine which hypothesis it is necessary to apply, we use a comparison of the p-value with the significance level, with the level of significance equaling 0.05. The following table shows the results obtained by applying the non-parametric Mann-Whitney test.

Parameter	**Period**		
	2015	**2016**	**2017**
Significance level	0,05	0,05	0,05
p-value	< 0,0001	< 0,0001	< 0,0001
Hypothesis accepted	H1	H1	H1
Decision	Earnings manipulation	Earnings manipulation	Earnings manipulation

Table 2: Overview of Mann-Whitney test results
(Source: Made by authors)

Based on the data in the table, we can see that in the reporting period 2015-2017 the level of significance is higher than the p-value, indicating that in the reporting period 2015-2017 our analyzed set of companies has detected the existence of earnings management, that we have adopted the alternative hypothesis (H1), which shows that companies in the Czech Republic manipulate earnings.

4.3. Determination of the direction of earnings management in the Czech Republic

Based on the assessment of the occurrence of earnings management in enterprises in the Czech Republic, it is clear that enterprises manipulate their profits by using earnings management. The question remains, however, whether this manipulation is through increasing or decreasing earnings. For this reason, it is necessary to determine the direction, degree, and scope of

earnings management occurring in Czech enterprises. Since the accrual is divided into a discretionary and non-discretionary accrual, it is necessary to determine the percentage of positive and negative discretionary accruals, where the positive discretionary accrual represents the gain management by increasing it as opposed to the negative discretionary accrual. The following table shows the percentage of discretionary parts over the three years 2015-2017.

Discretionary accrual	Period			Average
	2015	2016	2017	
Positive DA	65.16%	53.08%	55.45%	57.90%
Negative DA	34.84%	46.92%	44.55%	42.10%

Table 3: Percentage of positive and negative discretionary accruals
(Source: Made by authors)

Based on the percentage of discretionary accruals, we can say that in the reporting period 2015-2017, when the existence of earnings management was found in all three years, the percentage of discretionary (positive) accrual is higher compared to the percentage of non-discretionary (negative) accrual. The percentage share of discretionary accrual in 2015 was the highest, at 65.16%. In 2016 and 2017, the percentage dropped. In 2016, the percentage was around 53.08%. In 2017, the percentage was 55.45%. Unlike the discretionary accrual, the percentage of the non-discretionary accrual developed in the opposite direction. In 2015, we recorded a percentage of 34.84%. In 2016, the percentage increased to 46.92%. In 2017, we recorded the second-highest percentage of non-discretionary accrual at 44.55%. Comparing the percentage of discretionary accruals, we can say that more than half of businesses in the Czech Republic tend to manipulate profits by increasing it because the percentage of discretionary (positive) accruals in each year is higher than the percentage of non-discretionary (negative) accruals.

4.4. Determination of degree of earnings management in the Czech Republic

Once we have determined which direction profit is being manipulated, we determine the degree of earnings management, using the average value of discretionary accruals. The following table provides information about average values, expressed as a coefficient.

Discretionary accruals	Period			Average
	2015	2016	2017	
Average value +DA	0.107383	0.079787	0.083410	0.090193
Average value -DA	0.131134	0.102564	0.104022	0.112573
The difference value	-0.023751	-0.022778	-0.020612	-0.022380

Table 4: Average values of discretionary accruals
(Source: Made by authors)

From the table, we can see that the average value of the discretionary (negative) accrual in 2015 is higher than the average value of the discretionary (positive) accrual. When we compare the average values of discretionary accruals in 2016, we see that the average value of the discretionary (negative) accrual is again higher than the average value of the discretionary (positive) accrual. There was no change in 2017 either, suggesting that in each year the manipulation of profits by decreasing it is more obvious than manipulating profits by increasing it.

4.5. Determination of the scope of earnings management in the Czech Republic

To determine the extent of earnings management, we use average values and percentages of individual discretionary accruals. The results are presented in the following table, where

individual coefficient values were calculated by multiplying the average value of the discretionary accruals and the percentage of these discretionary accruals.

Scope of discretionary accrual	Period			Average
	2015	2016	2017	
Scope of positive DA	0.069970	0.042349	0.046253	0.052857
Scope of negative DA	0.045688	0.048126	0.046339	0.046718

Table 5: Discretionary accrual as an indicator of the scope of earnings management (Source: Made by authors)

From the table, we can see that the range of positive discretionary accruals in 2015 is higher than the range recorded in 2016. In 2017, the range of positive discretionary accruals changed slightly to 0.046253. The scope of the discretionary negative accrual has changed slightly in the individual years 2015-2017. In 2015 it was at the level of 0.0458888 and in 2016 it was 0.048126. In 2017, the scope of the negative discretionary accrual was 0.046339. Taking into account the average range of discretionary accruals, we can see that the range of positive discretionary accruals is higher than the average range of non-discretionary accruals, with the result that businesses in our analyzed set are manipulating the Czech Republic in 2015-2017 profit by increasing it.

5. CONCLUSION

Within the application of the Kothari model, we focused on estimating the discretionary accrual, we verified the occurrence of earnings management in companies in the Czech Republic and we determined the direction, degree, and scope of earnings management. The results of our analysis showed that Czech companies are manipulating earnings upwards, ie increasing it in all three years 2015-2017. We consider our goal to be fulfilled as the final results confirmed the occurrence of earnings management in companies in the Czech Republic and based on the overall statistical analysis we determined the direction, degree, and extent of earnings management.

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THE PARADIGM OF HUMAN CAPITAL IN THE CONTEXT OF DIGITALIZATION ACROSS COUNTRIES

Bayramova Sevinc Rafiq
Azerbaijan State University of Economics, Azerbaijan
bsr66@mail.ru

Anna Kogteva
Belgorod National Research University, Russia
annelya1@yandex.ru

Natalya Gerasimova
Belgorod National Research University, Russia
ngerasimova@bsu.edu.ru

Elena Veiss
Belgorod National Research University, Russia
bupsi980-90@mail.ru

ABSTRACT

Digital transformations of the modern world economy pose new requirements for the resource potential of states. Improving the country's competitiveness in the context of digitalization is associated not only with the development of serious potential. Main market directions are innovative digital information technologies and developments. The dominant role in the organization of activities is the ownership of information resources and methods for their effective use. Scientific and technological progress in the field of digitalization increases the importance of human capital as a means of achieving results, promotes the importance of physical activity in comparison with cognitive activity within the framework of production - the requirements for the level of education, digital literacy, creativity and intelligence of staff are being re-established. The development of human capital is of great socio-economic importance not only for organizing efficient production activities, but also for the country as a whole. Investments in human capital (in health, education, and the development of digital literacy of personnel) contribute to raising the level of labor productivity, GDP per capita, as well as living standards. The level of human capital within the country depends on the level of its innovative development, standard of living, strategic orientation and policy of the authorities in the field of formation of human resources. The purpose of this article is to analyze the characteristics of the formation and development of human capital across countries. In the first part of the paper, we characterize the ontology of human capital and coherent and integration investment factors that influence the formation of anisotropy within human capital. In the second part of the work, we will analyze the level of human capital across countries; compare the countries of the world in terms of education quality, health status, development of digital literacy of the population and implementation of investment measures in the field of human potential development. In the third part of the work, it is extrapolated as the differentiation of factors that form the level of human capital contributes to an increase in the level of capital and an increase in the quality of life within the country.

Keywords: *Human capital, Digitalization, Digital literacy*

1. INTRODUCTION

The current trends in the knowledge economy, the digitalization of society, increase the importance of human capital (particularly its cognitive capacity) and information in the

country's wealth. Born with certain abilities and genetic characteristics, an individual during the period of his life receives various kinds of knowledge and experience that make up human potential, which, subsequently, forms human capital. It depends on various factors influencing it. Necessary skills are also formed that make up various forms of the country's human capital. Differences in the level of factors of influence on human capital in the inter-country dimension contribute to the formation of its paradigm for various characteristics, such as life expectancy, level of education, digital literacy, etc. Identification of the peculiarities of the influence of various factors, as well as the level of state investment activity in the field of human capital formation on its formation and structure is the most relevant at present, since the use of world experience in the formation of competitive resources will help to avoid mistakes and identify bottlenecks in the development strategy of a particular subject in particular. In order to identify the features of the analysis within this work, we consider ontology of the «human capital» concept. The basis for the formation of the human capital essence as a resource producing income is based on the arguments of W. Petty, who puts forward in his scientific work "Political Arithmetic" the possibility of evaluating a person's abilities in monetary terms [6]. A. Smith and D. Stuart are considered to be the founders of the theory of human capital, implying by this concept the level of a person's ability to work [7]. According to A. Smith, a person needs to make capital investments in the formation of his own human potential (for example, in education) in order to be able to earn in the future. Modern trends in the development of the theory of human capital originate in the 50s of the XX century - their emergence is associated with increased interest in a person as a production factor, requiring investment and able to generate income. Among scholars of this direction, T. Schulz can be singled out, who was one of the first to suggest the presence of productive characteristics in human capital - the ability to reproduce and accumulate [6], as well as G. Becker, in whose opinion "human capital is formed through investment in a person, among which are the costs of education, training in production, the costs of health care, migration, and the search for information on prices and income" [1]. Among foreign researchers considering the formation and essence of human capital, a significant contribution to the development of this notion was made by: A. Smith, I. Bowen, J. Mincer, D. Stuart, D. Gilbert, G. Becker, T. Schultz, E. Flamholtz, J. K. Galbraith, F. Welch, , M. Malone, J. Psacharopoulos, E. Brooking, E. Lather, L. Edwinsson, H. St. Onge, J. Fickens, D. Duffey, R. Layard, B. Chiswick, W. Petty and others. National researchers involved in the development of human capital are: V. Bagov, E.B. Ermishina, E. Seleznev, B. B. Leontiev, V. Stupakov, I. A. Ivanyuk, O.B. Kazakova, K.R. Adamadziev, T. Astakhova, T.Yu. Feskova, S.A. Dyatlov, I.I. Prosvirin, R.I. Kapelyushnikov, L.G. Simkina, I. Ilyinsky, etc. The content analysis of foreign and national literature allows us to deduce the inferences on the difference in approaches to the interpretation of the essence of "human capital" concept, its components, as well as the need and species diversity of its investment. Analyzing the various points of view of scientists on the human capital components [10,3,2], we can conclude that its main components are the level of health, education, acquired skills and qualities, as well as in connection with the spread of digital technologies in the modern world, the presence of digital skills in the population. The formation of a country's competitive human capital is based on the degree of development of the main directions for acquiring knowledge and skills, as well as for preserving the personal resources of an individual (such as health). Consequently, a research of the human capital condition in states with consideration of the main factors level that influence it in accordance with the characteristics of the countries, the degree of investment activity of state bodies in the development of capital-forming spheres of public life, will allow us to deduce objective inferences on the dependence of the capital level on specific features of the of countries development, and also, applying the experience of other states, to avoid mistakes in the formation of modern human capital.

2. HUMAN CAPITAL FROM THE INTER-COUNTRY PERSPECTIVE

Human capital is one of the key resources contributing to the modern development of the countries and the world as a whole. Depending on country differences in the standard of living of the population, education, and the development of the healthcare system, the paradigm of capital is changing, and, consequently, the level of competitiveness of its components. An analysis of the human capital level across countries will help to form an idea of the influence of various factors on the quality of a resource, as well as deduce the inferences on the development degree of country policies in this notion. Among the indicators characterizing the level of human capital of the countries in the world, one can single out the Human Development Index, which includes the level of education, life expectancy, and living standards of the population. Let's consider the ranking of countries in terms of human development index in table 1.

Table 1: World Human Development Index

Ranking	Country	The weight of the Human Development Index
1	Norway	0,954
2	Switzerland	0,946
3	Ireland	0,942
4	Germany	0,939
5	Hong Kong	0,938
6	Australia	0,938
7	Iceland	0,937
8	Sweden	0,935
9	Singapore	0,933
10	the Netherlands	0,930

Source: United Nations Development Program

Norway has the highest level of human capital development among the countries of the world - a country with a high level of population safety, environmental quality, wages and education, as well as relatively high per capita incomes. In addition to Norway, the top ten countries also include countries such as Switzerland, Ireland, Germany, Hong Kong, Australia, Iceland, Sweden, Singapore and the Netherlands, which also have a high level of basic indicators of human capital development. The Human Development Index is not the only the indicator when considering the conditions for the formation of human capital, the creation of the most complete picture of human capital and the factors that influence it in the inter-country perspective, will allow the analysis of the components of the index in the framework of the research. In present-day developments as well as in the light of recent world events, one of the most important components of human capital is the level of health that makes up the physical form of human capital. Low levels of public health, a decrease in life expectancy, an increase in the number of chronic diseases, both of viral origin and those caused by the characteristics of the body and lifestyle (obesity, cancer, etc.) reduce the quality of human capital in the country and increase the level of capital investments in public health, healthcare, and also lowers the level of efficiency of investment in other areas. According to the analysis of the health level in different countries of the world, carried out by experts of the Bloomberg Healthiest Country Index [11] based on a selection of 169 countries by the level of health index, the country with the highest level of health in the world is currently Spain (table 2).

Table following on the next page

Table 2: World Health Rankings

Ranking		Country	Health index		Dynamics	Health expenditures,% of GDP
2019	2017		2019	2017		
1	6	Spain	92,75	96,56	-3,81	9,0
2	1	Italy	91,59	95,83	-4,24	8,9
3	2	Iceland	91,44	96,11	-4,67	8,3
4	7	Japan	91,38	95,59	-4,21	10,9
5	3	Switzerland	90,93	94,71	-3,78	12,2
6	8	Sweden	90,24	94,13	-3,89	10,9
7	5	Australia	89,75	93,96	-4,21	9,3
8	4	Singapore	89,29	93,19	-3,90	4,5
9	11	Norway	89,09	93,25	-4,16	10,5
10	9	Israel	88,15	92,01	-3,86	7,3

Source: Bloomberg Healthiest Country Index, World Health Organization: National Health Account Statistics, 2019

Japan also shows a significant increase in the level of health - the only Asian country among the top ten in the ranking - the country's indicator grew by 3 points - according to the analysis, the country's standard of living has decreased by 4.21 since 2019. Researchers are of the view that the increase in the level of health in Spain is caused by the peculiarities of the nutritional behavior of the population - the use of Mediterranean products helps to reduce the number of cancer and cardiovascular diseases in the country. Moreover, this dynamics is associated with the policy of public authorities in the field of health, among the main areas of development of which is the treatment of chronic diseases and the analysis of lifestyle factors such as obesity [9]. The growth in the ranking of countries such as: Italy, Japan, Iceland, Switzerland, Sweden, Singapore, Israel and Norway, according to Bloomberg researchers, is also due to the impact on the level of health of high quality health care - the organization of preventive measures for citizens, starting from the first years life, the high level of accessibility of medical services, significantly affect the growth of the level of public health in countries. Russia takes 95th place in the ranking, having a rather low value of the health index associated with high rates of alcohol consumption in the country, the number of suicides and the dynamics of deaths from violent acts, lagging behind Chile (33rd place), Belarus (81st place), Ukraine (93rd place) and Venezuela (87th place). According to K. Murray, the gap between the countries will be maintained by differences in the income level of the population, affecting both the possibility of obtaining high-quality medical services and the degree of education of the population (in particular, in the field of the basics of good nutrition, hygiene and bad habits) [13]. The development of digital technologies, the widespread computerization and softization, increase the importance of the cognitive characteristics of human capital over physical characteristics. Compared to the physical form, intellectual human capital as an investment considers a high-quality educational system that allows developing the individual's creative abilities, the level of work culture, and also providing the necessary knowledge base for further activities. As an indicator allowing deducing the inferences on the level of education in the countries, we use the Education Index - a combined index of the UN Development Program. The value of the Education Index, which characterizes the level of education of the country's population, consists of two indicators:

1. Adult Literacy Index;
2. The index of the total share of students in primary, secondary and higher education.

Let's consider the ranking of the countries by level of education in table 3.

Table 3: Ranking of countries by level of education in 2019

Ranking	Country	Index	Expenditures on education,% of GDP
1	Germany	0,946	4,6
2	Australia	0,923	5,1
3	New Zealand	0,923	7,2
4	Denmark	0,920	8,7
5	Norway	0,919	7,3
6	Iceland	0,918	5,7
7	Ireland	0,918	7,8
8	the United Kingdom	0,916	5,6
9	Finland	0,915	6,8
10	Sweden	0,914	7,3
34	Russia	0,832	4,1

Source: World Countries Ranking by Education. Humanitarian Encyclopedia

The first place in the ranking of countries in terms of education is Germany - in contrast to the United States, which has a significant number of "reputable" educational institutions that are among the ten best universities in the world; the number of literate people in the country exceeds the value of both the USA and England. The German education system is characterized by a large number of universities (250), a simple standard system of admission, both for the local population and for foreign students. In addition, within the framework of the country, support is provided for gifted students in the form of various scholarships, as well as an interest-free loan for study. Among the countries providing equal conditions for the admission of foreign and local students, we can single out the UK - a country with a high level of education. Educational institutions in the UK are among the most prestigious in the world - Oxford University, Cambridge University, Imperial College London, while studying in the country is significantly cheaper than the United States, a huge selection of study programs, as well as the possibility of official employment of students during the educational process. The level of Russia in the ranking of countries in terms of education is quite low - the country lags behind in the education of citizens from countries such as Belarus, Georgia, Japan and France. Among the negative aspects of the Russian education system we can distinguish: the predominance of the theoretical part over the practical, overload of the educational process with additional disciplines, a low level of infrastructure provision and the obsolescence of the scientific base of the universities, as well as the enrollment of students according to the results of the unified state exam. In addition, to increase the level of education in the country, as well as the education of citizens, it is necessary to increase governmental spending on education, which currently stands at 4.1% of Russia's GDP. Considering the level of expenditures of the leading countries in the ranking, it can be concluded that most countries, having a well-formed high-level education system, spend significant funds on maintaining it - from 4.6 to 8.7% of the country's GDP. Among the important components that form the qualitative cognitive characteristics of the country's human capital, one can also single out the level of development of scientific activity in the country. The participation of human resources in scientific activity contributes to the accumulation of quality human capital, the formation and implementation of creative abilities and the foundations of knowledge. As part of the study of the level of development of scientific activity in the countries of the world, we consider the level of R&D expenditures in% of countries' GDP. Thus, according to the UNESCO Institute for Statistics, among the countries with a relatively high level of investment in research and development, one can distinguish: Israel and the Republic of Korea (34.6%), Switzerland (3.4%), Sweden (3.3%) and Japan (3.2%). At the same time, when considering the absolute expression of these indicators, the list of leading countries varies markedly: the USA (543 billion US dollars), China (496), Japan (176), Germany (127) and the Republic of Korea (90). Among EU member states, a high level of investment has also recently been observed in Austria (3.2%) and Denmark (3.1%) [15].

The costs of Russia in investing in scientific activity in the country for 2018 are significantly small - 1.1% (the country is at 34th place in the ranking of countries in terms of funding). This trend can be called negative for the country and requires deep structural changes in order to create and maintain competitive human capital in the country. Thus, summarizing the above given data, it can be concluded that human capital is an important component of the resource provision of states, the level and quality of the existing country human capital depends on a number of factors, among which we can single out the quality of education in the country, the level of health care, the development of scientific activity, etc. ., the stability and condition of which directly depends on the effectiveness of the socio-economic policy of the states in question.

3. DISCUSSIONS

Human capital is a resource prone to changes under the influence of various kinds of factors, both economic and social orientation. Currently, among the differentiated factors that have a significant impact on the formation of this indicator, one can distinguish digital transformations of the world order. The digital transformation of the economic and social life of society has a direct impact on the change in the traditional human capital of both the country and the regions. The ubiquity of digitalization leads to the intellectualization of labor, the increase in the share of people employed in the service sector, to the modification of traditional forms of human capital, as well as the creation of new (network) forms [5]. Global digital technologies are being introduced increasingly into the everyday life of the population, so in 2019: the number of unique mobile users is 5.11 billion people (compared to 2018, the growth was 2%), the audience of Internet users increased by 366 million users and amounted to 4.39 billion people, the number of registered users on social networks increased by 9% and amounted to 3.48 billion people. The coverage area of 3G and subsequent generations is increasing every year - in North and South America, the Asia-Pacific region and Europe, the coverage area is more than 95% of the territories, in Arab countries - 91%, in the CIS - 88%, in Africa - 79%. The formation of modern competitive human capital involves the development of digital literacy of the population, which is complicated by differences in the cost of services of Internet providers and mobile operators - due to their high cost poor countries cannot obtain the necessary knowledge in the modern world - the gap between the population is already widening having digital skills (working on a computer, using email and digital gadgets) and far from them. In the future, these digital skills will not be enough for a comfortable existence in the digital environment - we are talking about the development of advanced digital competencies among the population. Among the countries that are actively introducing training among the population in technical disciplines that increase the level of digital literacy, the USA can be singled out under the slogan “computer science for all”. This trend has both positive and negative aspects for the population in the inter-country perspective. For example, increasing the level of digital literacy among the population contributes to the competitiveness of human capital of the host country, and the existing gap between the layers of the population will significantly rise, as well as the level of digital development of countries. This will increase social tension among residents. Changes are appearing in the production sphere, the level of business computerization is increasing in business processes, production robotics are growing, cloud communication with customers and suppliers is being introduced [4], the number of production operations using manual, mechanical labor is being reduced, all this leads to a decrease in demand for many professions, and in the long run to their disappearance. Specialists in the ICT field, engineers with developed digital skills and capable of constant self-training, are currently in first place in demand. According to another point of view, automation of production processes implies an increase in the production of modern equipment and robots, which can create additional jobs and, therefore, reduce the unemployment rate in the country.

Increasing the availability of high-speed Internet, increasing the level of provision of the population with computer equipment and digital gadgets, contributes to the development of new forms of employment, such as freelance - remote self-employment, which allows workers to earn income without reference to the workplace. In the United States, individual entrepreneurs account for more than one third of the total workforce; in India, more than 15 million specialists operate in the form of freelance. According to the geography of the freelance market, 35.4% of employees are in Europe, 28% in Asia, 21.2% in Latin America, 10.1% in Africa, 4.1% in North America and 1% in countries The Middle East. The global freelance market is showing annual growth on a global scale - in 2019, US freelancers' income increased by 79% compared to 2018, a significant increase in freelancer income is also observed in Britain (59%), Brazil (48%), Pakistan (47 %), Ukraine (36%), Philippines (35%), India (29%), Bangladesh (27%), Russia (20%), as well as Serbia (19%). The structure of the freelancers market also differs depending on the country of location - for example, the US freelancers market is represented by self-employed people of various ages, while the Asian market consists of people under 35% of the Asian market. The specialization of freelancers is quite diverse - from the IT industry to administrative and client support and law [12]. Nowadays, the digital transformations of modern society are one of the significant factors that have a significant impact on the formation of human capital of the countries of the world - the development and continuous improvement of technical and information support in the environment surrounding the population involves the formation of new capital requirements, among which are: development of workers' cognitive qualities, digital skills, the desire for continuous self-improvement and raising the level of existing knowledge; the widespread use of high-speed Internet contributes to the formation of new types of employment, such as freelancing, which allows using self-employment to reduce the territorial dependence of the employee, and also contributes to his self-realization, which also positively affects the qualitative characteristics of the country's human capital.

4. CONCLUSION

The digitalization of modern social life has brought significant changes to the structure of value guidelines in the world - the resources that are the fundamental components of capital give way to human capital, and physical strength to cognitive skills. The development of the popularity of studying, as well as the allocation of human capital to the category of strategic directions for the development of competitiveness of countries is directly related to the increasing importance of information, and, consequently, knowledge, the creation and dissemination of which are associated with the intensive work of effective professionals and competitive specialists. Human capital, like any kind of capital, has the ability to accumulate when affected by various kinds of factors, such as education, science, the level of quality of life, etc., and is also subjected to wear - moral and material. Depending on the conditions created for the population, the quality of the human capital of countries varies significantly. According to the analysis carried out in this researchwork, it was revealed that Norway has the highest level of human capital development among the countries of the world - a country with a high level of population safety, environmental quality, wages and education. The top ten countries also include countries such as Switzerland, Ireland, Germany, Hong Kong, Australia, Iceland, Sweden, Singapore and the Netherlands, which also have a high level of basic indicators of human capital development. The basis for the formation of the country's human capital is health and the level of education, therefore, without a high-quality and generally accessible healthcare and education system, the formation of highly competitive capital is not possible. In the ranking of countries by educational level, the leading places have such countries as: Germany, Australia, New Zealand, Denmark, Norway, Iceland, Ireland, the UK, Finland and Sweden, with a high level of education, with the availability of high-quality educational services, a developed scientific base,

allowing forming a competitive, aspiring to development, and intellectual capital of the state. This list of countries also presents the leaders in the world in terms of population health, where Spain took the leading place in 2019 - a study of the dynamics of the incidence rate within the country led to the conclusion that the quality of the physical components of human capital is influenced by the nutritional behavior of the population, as well as quality and accessibility health systems. The aspect of considering the scientific, educational bases and the healthcare system in Russia, we can make conclusions on the low efficiency of measures taken within the state to develop these areas, which significantly affects the level of human capital, as well as the growth of outflow of intellectual capital abroad. One of the primary factors influencing the formation of human capital in modern conditions is the digital transformation of the modern world, contributing to the emergence of new forms of employment, the predominance of cognitive skills on the physical, improving the living standards of the population. At the same time, the use of digital technologies also strengthens social stratification between countries due to the high cost of their use, which affects significantly low digital literacy rates among the population and the growth of social tension. We can say that high-quality competitive human capital contributes to the economic growth of the state in connection with an increase in the effectiveness of all types of activities, the development of innovative areas and the production of intellectual products, which, nowadays, helps to increase investor interest in investing in the economy. The formation of an effective state policy to improve the quality of life of the population, investment support of the spheres fundamental for the formation of capital, contributes to the economic growth of the country, increase its competitiveness, as well as create a high-level basis for innovative development.

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BENCHMARKING AS A TOOL FOR IDENTIFYING THE DIRECTIONS OF SMART SPECIALIZATION IN THE REGION

Elnara Samedova
Azerbaijan State University of Economics (UNEC), Azerbaijan
Elnara_Samadova@unec.edu.az

Elena Stryabkova
Belgorod National Research University, Russia
stryabkova@bsu.edu.ru

Mikhail Kochergin
Belgorod National Research University, Russia
kochergin1994@yandex.ru

Anna Kulik
Belgorod National Research University, Russia
kulik@bsu.edu.ru

ABSTRACT

One of the current approaches to spatial development is the concept of "smart" specialization developed in the early 2000s in the European Union. It implies the development of those industries that will provide the regions with the greatest competitiveness (at various levels). The selection of such industries should take into account endogenous advantages of the region. At the same time, when it comes to the spatial development strategies of the supra-regional level, it is important to select different industries for different regions in order to avoid 'duplication' of advantages. However, in practice, the implementation of the "smart" specialization concept encounters significant difficulties, the main of which is to define the industry in which a region could specialize. The selection process should take into account both the above-mentioned endogenous advantages of the region and the demand for products of the prospective industry on the national and global markets. The purpose of this article is to provide a rationale for using the benchmarking as a potential tool for identifying the directions of "smart" specialization in the region. In the first part of the article we look upon the theoretical basis of benchmarking. In the second part we select (with the help of the data from Eurostat and Rosstat) European regions with the gross regional product structure corresponding most that of the Belgorod region, i.e. we select the benchmarks. In the third part we offer perspective directions of "smart" specialization in the Belgorod region. As a result, we provide recommendations for the design of a regional spatial development strategy based on benchmarking – the search for structurally similar regions of the world for the transfer of knowledge and successful practices in the choice of a market niche for the region, taking into account its uniqueness in the context of the world's technological trends.

Keywords: *Benchmarking, endogenous development, Eurostat, Interregional cooperation, "Smart" specialization, Spatial development*

1. INTRODUCTION

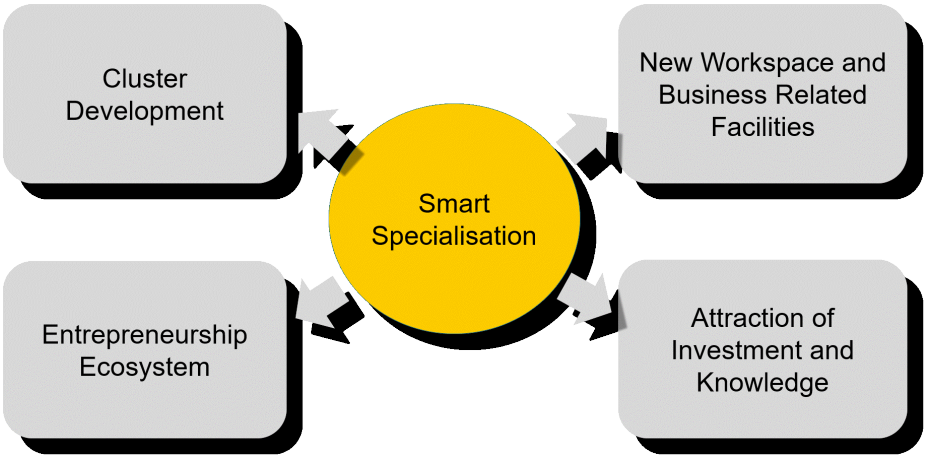
Spatial development of territories is quite a vast area of knowledge. Spatial development highlights a number of approaches and practices that are often contradictory. The choice of a particular direction depends on the objectives pursued by the authorities responsible for shaping spatial development strategies. One of the current approaches to spatial development is the concept of "smart" specialization developed in the early 2000s in the European Union.

It implies the development of those industries that will provide the regions with the greatest competitiveness (at various levels). The selection of such industries should take into account endogenous advantages of the region. At the same time, when it comes to the spatial development strategies of the supra-regional level, it is important to select different industries for different regions in order to avoid 'duplication' of advantages. However, in practice, the implementation of the "smart" specialization concept encounters significant difficulties, the main of which is to define the industry in which a region could specialize. The selection process should take into account both the above-mentioned endogenous advantages of the region and the demand for products of the prospective industry on the national and global markets. Benchmarking is a tool of analysis, which is a comparison of the object under study with a certain standard. Benchmarking identifies best practices and formulates ideas for improvement (Invernizzi et al., 2017; Improving Training...). Typically, benchmarking is used at the enterprise level to analyze business processes, marketing solutions, etc. (Mann et al., 2010, p. 24). Benchmarking, however, can be applied in other areas: in particular, in the creation of regional spatial development strategies and of regional clusters. In Russia, there is an understanding of the need to use European experience in the development of the cluster standard and requirements for assessing the effectiveness of the cluster. The European Cluster Excellence Initiative (European Clusters Excellence) is used as a reference point since 2009 to compare clusters (benchmarking procedures) and provide cluster management companies with methodological recommendations for improving the quality of cluster management. At the Krasnoyarsk Economic Forum in 2015, the Russian cluster management quality assessment system was developed based on the European Cluster Excellence Initiative indicators. This system for assessing the quality of cluster management is regarded as part of the Cluster Standard project (Cluster Management System Standard, 2015).

2. SELECTING BENCHMARKS FOR BELGOROD REGION

For Belgorod region it is possible to offer a set of activities of the regional cluster policy, the specific feature of which should be the transition to cluster portfolio management. The regional authorities should develop a cluster development strategy for the region, focused on "smart specialization" (Figure 1).

Figure 1: Cluster development as a part of Smart specialisation



Source: The urban dimension…, 2019

Smart specialization is the allocation of innovation priority zones in the spatial planning scheme (Uyarra et al., 2018; Radosevic et al., 2018). The concept was developed in the EU in the 2000s.

It is a mechanism that provides a coordinated implementation of industrial, scientific and technological regional policies (Methodology for Identifying...). We can highlight the following new initiatives within smart specialization framework:

- Macro-regional initiatives - the creation of macro-regions in the EU;
- Vanguard initiative - interregional cooperation of industrially developed regions, relatively evenly distributed across the EU territory (Methodology for Identifying...).

There are the following basic principles of smart specialization:

- A limited set of priority areas;
- Consideration of supranational / state priorities of socio-economic and current level of scientific and technological development;
- Consideration of Key Enabling Technologies, and the necessity to develop new industries and markets;
- Business plays a key role in finding priority areas;
- Creating platforms for coordination of government and business;
- Cross-sectoral nature of priorities;
- Interregional / international benchmarking (Methodology for Identifying…).

It is possible to propose the following steps within a smart specialization strategy:

1. Identification of specialization: we identify on the basis of statistics potential areas of specialization with obligatory consideration of regional potential (educational, scientific, industrial);
2. Regional expertise: experts, large and small business, academic community, informally employed people, and other categories of actors in each region conduct expertise of ideas formulated at the first stage;
3. Coordination and development of the plan: coordination of the decisions made between the regions, in order to identify opportunities and prospects for cooperation; adjustment of the national and regional strategies for spatial development; designing tools for the development of specialization (attraction of investors; support for scientific projects; retraining of personnel; withdrawal of business from the shadow sector, etc.) (Zemtsov et al., 2016; Zemtsov, 2019).

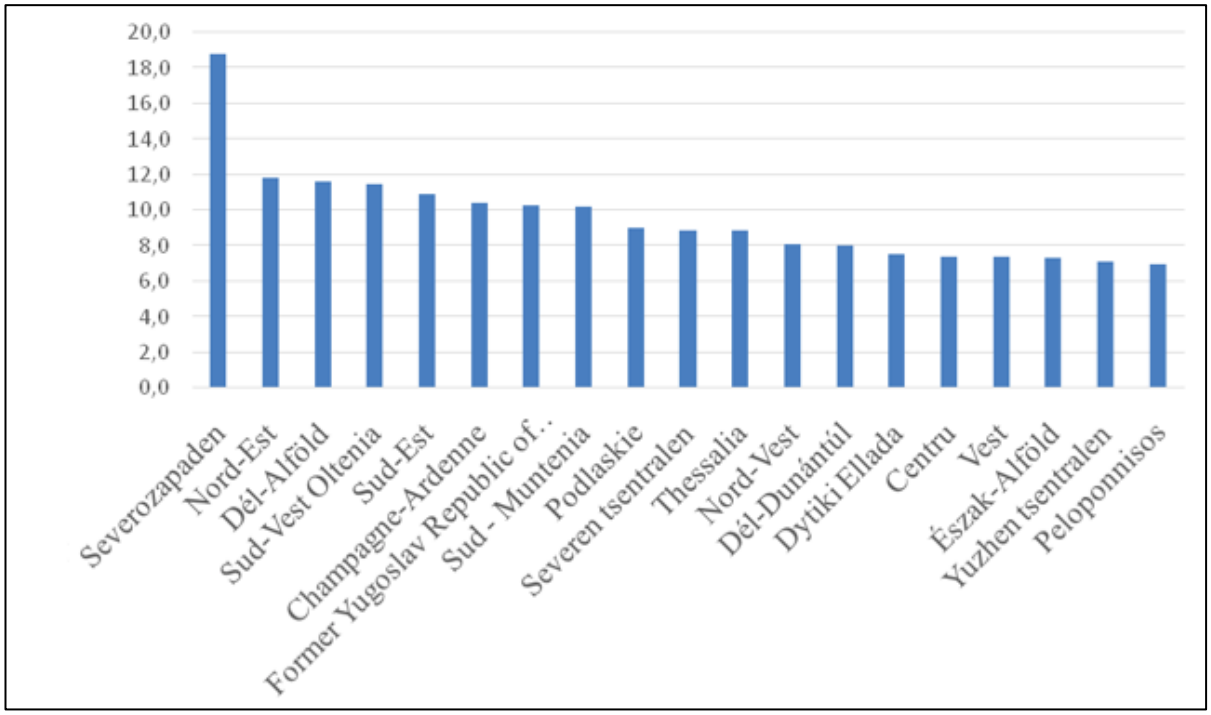
European Committee of Regions comes to the conclusion that it is necessary to form a network research infrastructure linking the neighbouring regions. This increases the exchange of knowledge, allowing each of the actors of inter-regional cooperation to contribute to the development of interdisciplinary research. The Committee thus points to the need to develop and implement a strategy of "smart specialisation", so that the European regions will ensure economic growth and job creation, taking into account endogenous regional characteristics (European Committee of the Regions, 2019). The strategy of cluster development of a region can be based on benchmarking, searching for structurally similar regions of the world for the transfer of knowledge and successful practices, and selecting a market niche, taking into account the uniqueness of the region in global technological trends. The following principles of implementation of the cluster policy should be considered as the main ones:

- Differentiated approach to the structure of activities, taking into account the stages of cluster evolution;
- Priority of development institutions (center of cluster development, specialized organizations), focused not on the support of subjects, but on the creation of conditions for activities, in the structure of the objects of the cluster infrastructure (Menshchikova et al., 2017);
- Relying on instruments to create and stimulate demand for innovation;

- Activization of new players - participants of cluster initiatives (civil society, local government, experts).

We carried out benchmarking of Belgorod region on the basis of recommendations for drafting the strategy of cluster development of Belgorod region on the basis of "smart specialization", comparing it with EU regions, which have an equal economic structure. The share of agriculture in the gross regional product of Belgorod region is 18.2% (Rosstat). We have singled out the regions of the European Union with the same high share of agriculture (Figure 2) (Eurostat).

Figure 2: European regions with share of agriculture in the sectoral structure of gross regional product of more than 5%

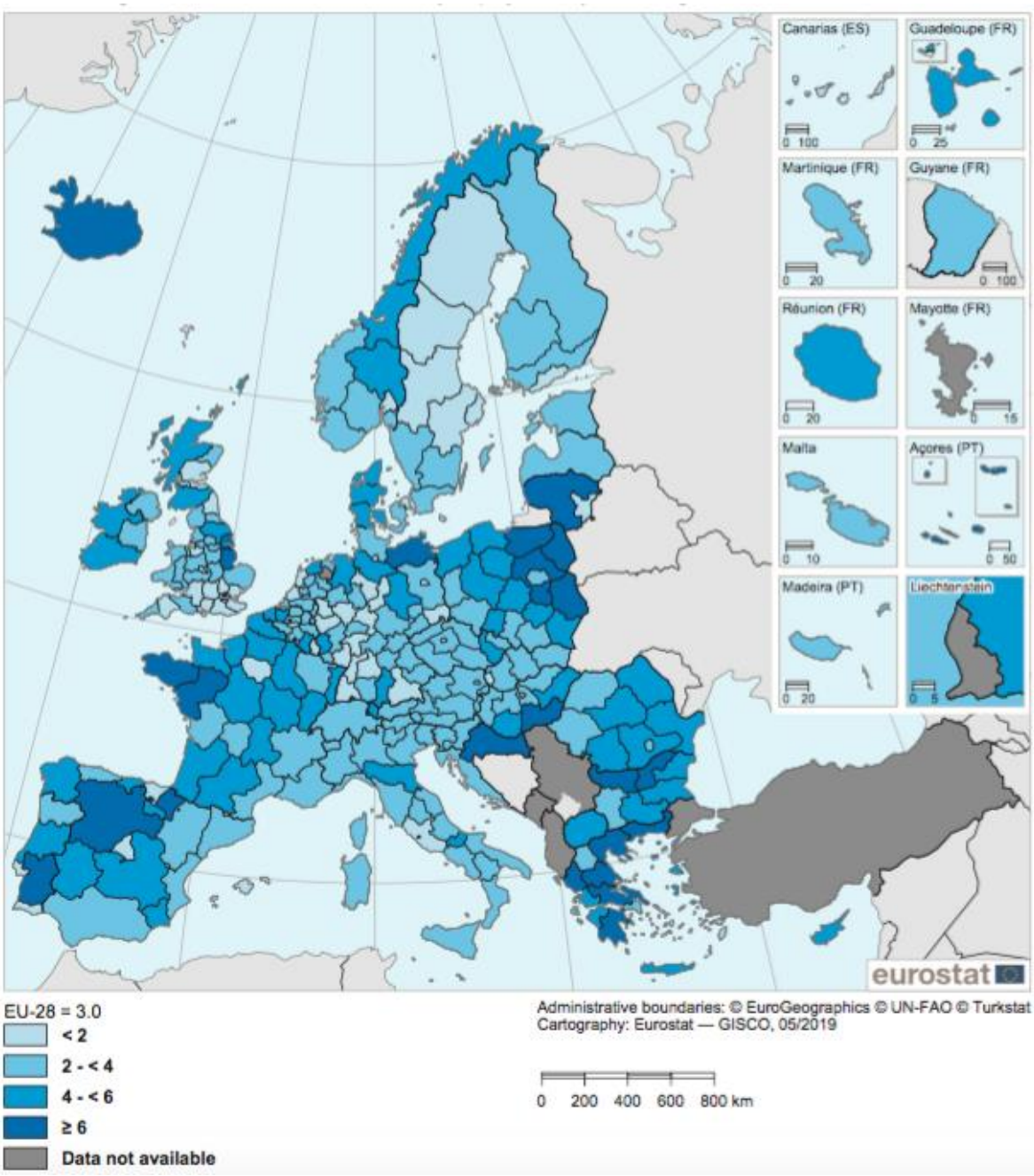


Source: Eurostat

Figure 2 shows that the majority of such regions are the least developed regions in Europe - Romania, Bulgaria, Macedonia, Estonia, Greece and Hungary. There is only one region among developed European countries with a high share of agriculture in the region's sectoral structure (10.4%) - Champagne-Ardenne in France. This region is the largest wine producer in France and has a large area for the cultivation of crops, characterized by a high standard of living. Since 1 January 2016, it has been part of the larger Grand Est Region (Grand Est). It should also be noted that among developed European countries France has one of the highest shares of those engaged in food production (Figure 3), which additionally indicates the suitability of the regions of France for benchmarking of Belgorod region, where the share is about 12% (Rosstat).

Figure following on the next page

Figure 3: Employment in the manufacture of food products, 2016



Source: Eurostat regional yearbook, 2019

Like all regions of Europe, Champagne-Ardenne is developing a "smart specialization" within the framework of the European Union Strategy "Europe 2020" and its extensions. Within the framework of "smart specialization" four areas are being developed: bioefficiency, production of new materials, health and quality of life, energy production (Grand Est). Within the Champagne-Ardenne region development policy, special attention is paid to the preservation of cultural and natural heritage. This is facilitated by the creation of regional parks for the sustainable development of the region, mainly in agricultural areas (Grand Est). The regional parks help to preserve the biological diversity and natural resources of the region and ensure a high quality of life in the region. Regional Parks use animation and experimentation programs, create so-called ecological corridors, recreate the features of 35 French municipalities. A so-called "health barometer" is being developed in order to maintain the health of the region's

population (Grand Est). Grand Est, of which Champagne-Ardenne is a part, positions itself as a region open to the whole world. The region forges long-term partnerships with regions in Europe and countries around the world. In this way, the region enhances its competitiveness, exchanges experiences and expertise (Grand Est). In general, the policy of territorial cooperation in the Grand Est region has three main directions:

- Line 1: international cooperation;
- Line 2: international solidarity and cooperation among local actors;
- Line 3: networking at national, European and international levels (Grand Est).

The aim of Grand Est is to become a European leader in bioeconomics. Bioeconomics is the production and processing of agricultural, forestry and other renewable resources, the production of bioenergy. Thus, the transition to the so-called "green" economy is ensured (Grand Est). The region is creating a road map to consolidate all bioeconomic initiatives. The scientific community, and regional business are involved in its creation within Industries & Agro-Resources (IAR) Competitiveness Cluster in Bezanne on the Marne (Grand Est).

3. PERSPECTIVE DIRECTIONS OF "SMART" SPECIALIZATION IN BELGOROD REGION

For the Belgorod region it is possible to choose the same priority development directions. A new direction for national and regional authorities is the application of smart specialization principles in the design of regional competitiveness policy (Stryabkova et al., 2019). The main objective of the smart specialization strategy is to transform the sectoral structure of the region, which can be achieved either through evolution, modernization and diversification of old industries, or through the creation of entirely new industries. The search for the region's unique specialization is done from the bottom up based on:

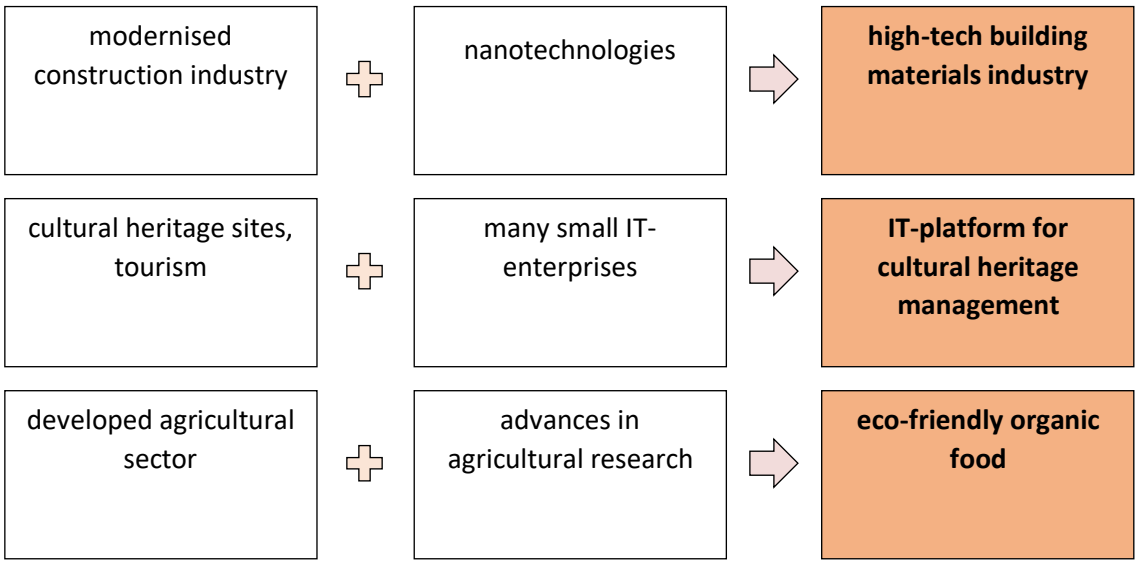
- Determination of unique competences in the region (intersection of branches of specialization with new scientific fields);
- Positioning of the region in relation to key enabling technologies (KETs);
- Cultural and creative innovations;
- Targeting the region's social objectives such as improving the environmental situation, providing jobs for special categories of the population, and overcoming social inequality and vulnerability.

The federal authorities must create the All-Russian Platform of Smart Specialization, which will provide a database for comparing regions with each other and choosing a unique specialization. For example, for Belgorod region:

- On the basis of modernization of the construction industry and introduction of nanotechnologies, we suggest creating a high-tech industry of building materials;
- On the basis of cultural heritage and tourism objects, and the existence of a large number of small IT companies, we offer the creation of an IT platform for cultural heritage management in Belgorod region;
- On the basis of the existing developed branch of the agro-industrial complex and taking into account achievements of agricultural science we offer specialization of the region on eco-friendly organic food (Figure 4).

Figure following on the next page

Figure 4: Choosing a unique specialization for Belgorod region of Russia



Source: Authors

4. CONCLUSION

We have formulated recommendations for the design of a cluster development strategy for the region on the basis of benchmarking, allowing regional governments to determine the conditions for transition to "smart specialization" and promote the creation of a unique market niche for the subjects of cluster initiatives. On the basis of recommendations for the design of a cluster development strategy for the Belgorod region on the basis of "smart specialization" we conducted benchmarking of the Belgorod region on the basis of its comparison with the EU regions, which have an equal economic structure. Within the framework of "smart specialization" it was suggested to develop four directions: bioefficiency, production of new building materials, health and quality of life, energy production. Belgorod region can develop specialization on the basis of creation of high-tech industry of construction materials, creation of IT platform for cultural heritage management in Belgorod region. On the basis of the existing developed branch of agroindustrial complex and taking into account achievements of agricultural science we offer specialization of the region on eco-friendly organic food. The positive effect that will arise in the functioning of the considered clusters of the Belgorod region, in our opinion, will be associated with their spatial localization, the effect of scale and a combination of competition and cooperation between members of the cluster, that is, will be the result of the properties of clusters. Analysis of the effects of clustering is supplemented by a new effect, which we have identified earlier - a decrease in the level of social vulnerability of the region's population.

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THE METHODS OF MANAGING FOR RISK OF COMBATING MONEY LAUNDERING (LEGALIZATION) OF PROCEEDS FROM CRIME AND THE FINANCING OF TERRORISM

Atik Kerimov
Azerbaijan State University of Economics (UNEC)
Baku, Istiqlaliyyat str., 6, AZ1001, Azerbaijan
atik.kerimov@yandex.ru

Galina Azarenkova
Kharkiv Educational and Scientific Institute of the Banking University
Kharkiv, Peremohy Av., 55, 61174, Ukraine
khibs@khibs.ubs.edu.ua

Alexander Masharsky
Baltic International Academy
Riga, Lomonosova str.4, LV-1003, Latvia
info.md@bsa.edu.lv

Tetiana Tomarovych
Kharkiv Educational and Scientific Institute of the Banking University
Kharkiv, Peremohy Av., 55, 61174, Ukraine
khibs@khibs.ubs.edu.ua

ABSTRACT

The article presents a comparative description of the current situation in the banking market of Ukraine, Azerbaijan Republic and Republic of Latvia, considers the main problems of modern risk management and its effectiveness in the field of combating the laundering (legalization) of proceeds from crime and the financing of terrorism (AML/CFT) under banking operations and transactions are at high risk of involvement in dubious operations. The article considers the risk of legalization (laundering) of proceeds from crime, and analyzes the methods of managing it that exist in banking practice using the example of one of the largest banks in Eastern Europe - CB JSC "Privatbank" in Ukraine and a subsidiary bank - JS "Privatbank" Latvia. The paper formulates the main characteristics of reputational banking risk. Here is revealed of the risk of AML/CFT. The article presents characteristic of the banking market in Ukraine, Azerbaijan Republic and Republic of Latvia. Analysis the dynamics of the main indicators of banking activity over the past 5 years, as well as the activities of CB JSC "Privatbank" in Ukraine and JS "Privatbank" Latvia were provided. Considered the legislative framework that regulates banking and the management of combating the laundering (legalization) of proceeds from crime and terror financing ISM in particular, the experience of developed countries in this direction is mentioned. Based on the study, it is proposed to identify the basic principles of risk-based approaches in the process of banking management in general, as well as specifically, taking into account the specifics of the management system for AML / CFT in the implementation of banking operations in Ukraine and the Republic of Latvia; presented the recommendations to reduce reputational risks in the field of Banking.

Keywords: *Risks, Banking risks, Risk management in bank, Money laundering risk, Banking market, AML / CFT*

1. INTRODUCTION

The banking market is a multidimensional socio-economic system and the market economy as a whole functions on its basis. Banks reputation and banking activity effectiveness in the context of the globalization of financial markets depend on the successful counteraction to money laundering and the financing of terrorism (AML/CFT). The specifics of the national economy and market reforms identified differences in the organization of risk management in banking systems that arose in the 80s and 90s in the post-Soviet space. In Ukraine and Azerbaijan, the legal and organizational system for managing ML/TF risk and reputation risks (compliance risks) is at the stage of formation, while in Latvia it formally already meets all international standards. An important channel for integrating national and international risk management systems is the work experience of foreign banks subsidiaries, like with one of the largest banks in Ukraine, JSC CB "PrivatBank" and AS "PrivatBank" in Latvia. The relevance of the research topic is also determined by the influence of AML/CFT on the reputation of national financial and banking systems, which determines the investment climate and the availability of financing in the context of the current global economy deterioration due to the COVID-19 pandemic. The subject of this research is risks management of legalization (laundering) of proceeds from crime and terrorism financing (ML/CT). The scope of this research is the theoretical and practical tools of the risks management of the legalization (laundering) of proceeds from crime and terrorism financing using the examples of Ukraine, Azerbaijan and Latvia. The research objective is to identify AML/CFT priorities in the banking systems of Ukraine, Azerbaijan and Latvia and ways to solve them.

Tasks:

- Trends and factor analysis of ML/CFT risks management in bank systems of Ukraine, Latvia and Azerbaijan;
- Analysis of the effectiveness of ML/CFT risks management in bank systems of Ukraine, Latvia and Azerbaijan;
- Identifying ways to improve the effectiveness of ML/CFT risks management in bank systems of Ukraine, Latvia and Azerbaijan.

Research methods: logical and statistical analysis, generalization, cross-country comparisons, expert assessments.

2. COMPARATIVE ANALYSIS OF THE DEVELOPMENT OF BANKING SYSTEMS IN UKRAINE, LATVIA AND AZERBAIJAN IN THE CONTEXT OF AML/FT

The banking systems of Ukraine, the Republic of Azerbaijan and the Republic of Latvia are the recent banking systems that began to shape in the 90s of the last century in the post-Soviet space. In all three countries, banking systems are represented by a classic dual level structure, including a central bank (National Bank of Ukraine, Bank of Latvia and the Central Bank of the Republic of Azerbaijan) and commercial banks and other credit institutions. As of January 1, 2020, the bank system of Ukraine is represented by 75 commercial banks, 35 of which are foreign invested, including 23 with 100% foreign capital participation [7]; Latvia – by 13 commercial banks, most of which are with foreign capital [8]; Azerbaijan – by 30 banks, including 14 banks with foreign investments [15] (Table 1). In 2019, the profit of the Ukrainian banking system exceeded the historical record of the previous year by 3 times (from 734.69 million euros to 2,255.70 billion euros). Thus, banks from the public sector increased profit by 2.4 times (to 1.33 billion euros) last year, banks with foreign capital - 5.1 times (up to 700 million euros), with private Ukrainian capital - 1.4 times (up to 223 million UAH) (Table 1).
For all three countries, there is a tendency toward a decrease in the total number of active commercial banks.

Therefore, from 2008 to 2020 the number of commercial banks in Ukraine decreased by 107 banks - from 182 to 75, in Latvia - by 16 banks - from 29 to 13, and in Azerbaijan by 15 - from 45 to 30 banks (Figure 1).

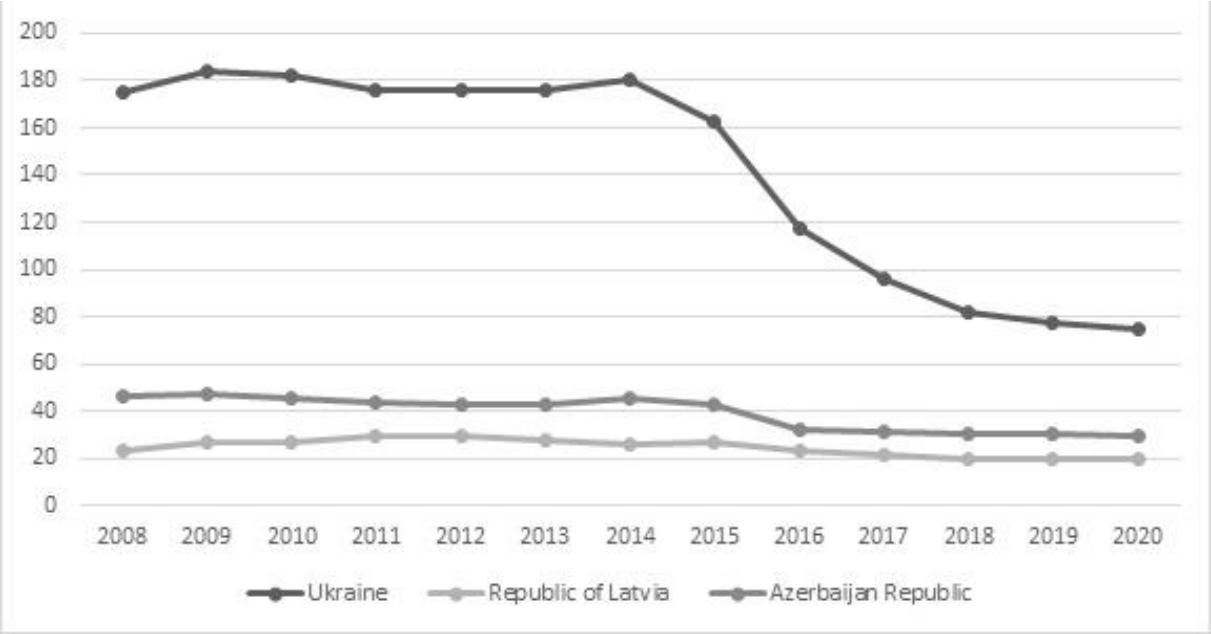

Figure 1: The dynamic of banks and subsidiaries of foreign banks in Ukraine, the Republic of Latvia and the Republic of Azerbaijan within the 2008-2020 period
(Source: 7, 8, 15)

Fifty percent of the Ukrainian banking system income is ensured by the largest national bank "PrivatBank" - the net income increased by almost 2.5 times up to EUR 1,23 billion [4]. In Ukraine, the Law on Prevention and Counteraction to the Legalization (Laundering) of Criminally Obtained Incomes, the Financing of Terrorism and the Financing of the Proliferation of Weapons of Mass Destruction was adopted on October 14, 2014 [12]. On the way to European integration, Ukraine is constantly harmonizing Ukrainian legislation and introducing international AML/CFT directives. Thus, the updated draft financial monitoring bill, which entered into force on April 28, 2020, adapts national legislation to the FATF Recommendation, as well as to the 4th and partially 5th EU Directives against money laundering and terrorist financing. These Directives have already been implemented in all EU member states and are mandatory for countries that intend to become EU members. The Law on Financial Monitoring requires banks to identify customers and analyze transactions by their matter, rather than by formal grounds, but such identification is not always carried out. In February 2020, NBU punished JSC "First Investment Bank", JSC "A-Bank", and JSC CB "Lvov" including for an inappropriate analysis of financial transactions. According to the conclusions of the Council of Europe Committee of Experts on the Assessment of Anti-Money Laundering Measures (MONEYVAL), in January 2018 in Ukraine there are significant risks of money laundering caused by corruption and illegal economic activity in the context of insufficient collection and use of information about financial transactions and crimes. Despite the conclusion in the 2019 MONEYVAL report that Ukraine has made progress since the decision on the procedure for enhanced monitoring in December 2017 was made, this regime was maintained. Thus, Ukraine is faced the task of intensifying efforts to eliminate remaining shortcomings in terms of incomplete legislative reforms. In Latvia, the formation of ML/TF risk management system began with the adoption of the AML/CFT law in 1997 and was of particular importance due to the high share of accounts of non-residents of the CIS countries - 48% of the total amount of

deposits with banks in 2015. In 1998, the AML/CFT service was created – the Control Service supervised by the prosecutor's office. In 2001 the FKTK begins to supervise banks' internal control systems, in 2005 - the AML/CFT Council was created; President of the Cabinet of Ministers was elected as the chairman of this Council. In 2008 - the Third EC Directive on AML/CFT was adopted, the main purpose of which was to find out the true beneficiary. In 2017 – the Fourth and in 2018 - the Fifth EC Directive on AML/CFT. The legal and organizational ML/TF risk management systems meet all international standards, and in 2017, Latvia was in the TOP 10 countries of the world with the most advanced legislation in the issues of anti-money laundering. However, despite the sharp tightening of the regulator's sanctions - the closure and high fines of violating banks, the accusations of Latvian banks in ML/TF did not stop even in August 2018. MONEYVAL included Latvia in the global gray list and introduced a tightened control regime for it. As a result, under pressure from the United States, a plan on reducing the share of non-resident accounts to 5% was adopted, whereas when Latvia joined the Organization for Economic Cooperation and Development in 2018 it was recommended to reduce their share only to the average European level - 30%. In fact, this means the liquidation of the non-resident sector of the banking system of Latvia. Azerbaijan joined the international struggle against the legalization of "dirty money" and the financing of terrorism in 2000 and since 2002, the republic has been closely cooperating with MONEYVAL. In 2009, the AML/CFT legislative framework was formed in the country, the international standards were actively implemented, and the Financial Monitoring Service (FMS) and the AML/CFT internal control system in banks were created. FMS adopted and implemented AML/CFT Strategy for 2010-2013, the fight against money laundering was included in the State Anti-Corruption Program in Azerbaijan. In October 2010, Azerbaijan was excluded from the list of FATF countries that have gaps in the anti- money laundering system. Nevertheless, the problems of the International Bank of Azerbaijan that appeared in May 2017 again raised the relevance of improving the AML/CFT system.

		Ukraine		The Republic of Latvia	
№	Reporting period / Name of position	2009	2019	2009	2019
1.	Number of banks and subsidiaries of foreign banks	182	75	29	13
2.	Assets	76,889.70	56,561.20	32,772.55	18,745.50
3.	Loan portfolio	65,276.80	39,116.60	23,319.10	9,529.27
4.	Capital and reserves	10,059.92	7,601.77	3,099.73	633.63
5.	Liabilities	66,829.78	48,959.43	37,753.00	13,445.08
6.	Net income /loss (–) before taxes	-3,358.40	9,249.87	–1,327.18	63.90
7.	Profit/loss of the reporting year	-	2,255.70	–1,169.20	27.15

Table 1: The main indicators of banking system in Ukraine, Republic of Latvia, The Republic of Azerbaijan within the 2009-2019 period
(Source: 2, 5, 7)

Thus, there is a tendency towards a decrease in the total number of active commercial banks for all 3 countries.

This tendency is determined by the policy of state regulators of the banking market (in Latvia since 2001 - the Financial and Capital Market Commission) on improving banking systems by closing both unprofitable banks and banks participating in schemes according to ML/FT [7; 3]. The revealed inefficiency of the AML/CFT systems of banks in Ukraine, Azerbaijan, and Latvia, with more and more complete implementation of the recommendations and directives of international regulators - FATF, MONEYVAL and the EU, indicates the decisive role of not formal, but substantial - institutional factors.

2.1. The role of the JSC CB "PrivatBank" Ukraine and JSC "PrivatBank" Latvia in the bank systems of Ukraine and Latvia

JSC CB "PrivatBank" was established as a limited liability company called Commercial Bank "PrivatBank" and was registered by the National Bank of Ukraine on March 19, 1992. JSC CB "PrivatBank" is one of the largest banks in Ukraine and represents an interregional universal systemically important Bank that focuses on the interests of customers of all forms of ownership and provides a full range of services in all segments of the financial market for servicing corporate and individual clients [4]. JSC CB "PrivatBank" has an extensive network of branches and divisions throughout Ukraine - 35 branches (including a branch in Cyprus) and 2243 divisions. As of January 1, 2019, the size of the net assets of JSC CB "PrivatBank" is UAH 280,750 million (EUR 8,852 million), shareholders' equity – UAH 37,905 million (EUR 1,195 million), the bank's loan portfolio – UAH 57,312 million (EUR 1,807 million); all calculations made as per rate of currency conversion (UAH – EUR) according to the National Bank of Ukraine as of December 31, 2019. In 2018, "PrivatBank" increased its loan portfolio to UAH 11 billion (EUR 347 million), compared with UAH 6.6 billion (EUR 208 million) in 2017. Over the year, the company issued loans to small and medium-sized businesses in the amount of UAH 6.4 billion (EUR 208 million). Moreover, more than 80% of decisions were made in the automatic mode [4]. As a result, currently the JSC CB "PrivatBank" is one of the leading and systemically important banks of Ukraine. AS "PrivatBank" has been created in the Republic of Latvia ("Latvia") as joint-stock company on July 31, 1992 [2]. The main activities of the Bank are attracting the deposits, credit activities and issuance of guarantees, cash and settlement transactions, operations with securities, foreign currency operations. The activities of the bank are regulated by the Bank of Latvia and the Finance and Capital Market Commission of the Republic of Latvia ("FCMC"). The bank has 13 branches. AS "PrivatBank" branches in Portugal and Italy have not proved their value and has been closed. Currently, bank's capital is owned by JSC Commercial Bank "PrivatBank" (Ukraine) – 46.54%, private individuals – 27.09%, other 36.37% - by four offshore companies [4]. Subsidiaries of the Bank are SIA "Private Consulting", SIA "Amber Real", SIA "Private Investment". As of March 11, 2016, the paid off capital asset of "PrivatBank" is EUR 86,349,556 [4]. As of the beginning of 2019, the total assets of the Bank amounted to EUR 198.6 million, operating income reached EUR 7,462 thousand and the net loss of the Bank amounted to EUR 6,530 thousand. The group incurred losses in the amount of EUR 5,330 thousand. The Bank's reserves for 2018 amounted to EUR 34,076 thousand (compared to EUR 31,784 thousand at the end of 2017) [4]. The Bank is considered sufficiently liquid, cash and balances in the Bank account for 26% of total assets compared with 36% in 2017. Customer loans and receivables account for 30% of the total assets and have decreased to EUR 58,835 thousand compared to the balance of EUR 69,495 thousand in 2017. This decrease occurred mainly due to a reduction in the loan portfolio for international clients in the field of trade finance [4]. Loans granted to residents of Latvia make up 87% of the total loan portfolio. Thus, we can conclude that JSC CB "PrivatBank" is the largest systemically important banking institution in Ukraine and its subsidiary bank AS "PrivatBank" in Latvia has the average performance level.

2.2. Analysis of the risk of legalization (laundering) of proceeds from crime and terrorism financing of JSC CB "PrivatBank" Ukraine and AS "PrivatBank" Latvia

Reputational risk and its main component - AML/CFT risk – is of particular importance in the current conditions for JSC CB "PrivatBbank" Ukraine and AS "Privatbank" Latvia. Reputational risk is the probability of customers, partners, shareholders of the Group and the Bank, regulatory authorities or other interested parties, forming a negative opinion about the Group and the Bank, that potentially could damage the Bank's ability to maintain existing and form new business relationships with customers and other business partners as well as negatively affect the funds availability for the Group and the Bank. AML/CFT risk is the risk that the Bank can be involved in money laundering and terrorism financing through the services provided by the Group or the Bank. As a result of the negative events of reputational risk occurrence, credit risk, liquidity risk, and other risks may also increase that in return may negatively affect the profitability and liquidity of the Group and the Bank. In order to timely and fully identify risks and assess acceptable risk levels, to launch new products and services, JSC CB "PrivatBank" and AS "Privatbank" Latvia assess potential risks and approve internal regulatory documents related to risk management, which include appropriate procedures, restrictions and hedging methods. The rules, procedures and managing and control tools to prevent the Bank from using the AML/CFT and performing initial financial monitoring were approved and implemented [1]. Upon nationalization in 2016, litigations have been established against ex-owners of Privatbnak accusing them on laundering the largest amount of money in the world history by one group of people. According to the lawsuit, by means of the total amount of loans granted by "PrivatBank" to Cypriot companies during 2006-2016, the owners of the bank laundered $470 billion [3]. The scheme for laundering funds through "PrivatBank" was very simple: money from the bank was transferred to its subsidiary bank in Cyprus. From there it went to law firms that invested these funds into purchasing the real estate and a number of companies in the United States. Many problems related to the legalization of illegal proceeds and terrorism financing have also been identified in the Latvian banking sector. In 2016, the Latvian division of AS "Privatbank" paid a fine of 2 million euros for servicing operations related to funds associated with the "Moldovan scheme" through which at least $ 22 billion was withdrawn from the Russian Federation from 2011 to 2014 [8]. In 2019, the Latvian financial regulator FCMC fined CB "PrivatBank" Latvia for EUR 1.02 million for violating the combating money laundering law [8]. In particular, the Latvian Financial Regulator FCMC revealed that in some cases the bank did not sufficiently check the origin of the funds in the clients' accounts and did not stop working with them on time. The main shortcomings in AS "Privatbank Latvia" risk management system at this stage is an incomplete assessment of the degree of risk in working with non-resident clients, which contributes to the potential laundering of funds obtained illegally and damages the bank's reputation. In response to stepping up the requirements of the FCMC of Latvia in recent years, AS "Privatbank" has also tightened its internal requirements for AML/CFT and continues to serve non-resident customers. The lack of effectiveness of AML/CFT systems in JSC CB "Privatbank" Ukraine and AS "Privatbank" Latvia reflect the general insufficient AML/CFT level in these countries. The conclusion from the analysis is that the more developed ML/FT risk management system, which operates a subsidiary Ukrainian bank in Latvia, does not guarantee a higher level of AML/CFT efficiency. On the other hand, the example of the leader in the banking sector of Latvia – "Swedbank" AS, a subsidiary of the Swedish Swedbank, also fined for deficiencies in AML/CFT, indicates that the corporate culture of banks in more economically developed Sweden is also not a guarantee of the effectiveness of AML/CFT when the bank operates in developing countries. Thus, the improvement of AML/CFT in Ukraine and Latvia requires taking into account the national characteristics of countries.

2.3. Anti-ML / FT action in Azerbaijan

Based on the results of the National Risk Assessment (NRA), which was completed in 2016, the NRA concluded that the national risk assessment of ML in Azerbaijan is average. The main income-generating crimes were found to be tax evasion, corruption, smuggling and human trafficking. The vulnerability of ML/FT to the banking and designated non-financial businesses and professions (DNFBP) sectors was recognized higher than in other sectors. FT risk was rated as high, mainly due to gaps in legislation related to FT. The NRA also noted that the ability to combat ML and FT is the country's main vulnerability. Based on the NRA, Presidential Decree No. 2461 (November 18, 2016) approved the AML/CFT Action Plan for 2017–2019. The action plan defines the measures that should be implemented by law enforcement agencies (LEAs), the Financial Monitoring Service (FMS), as well as supervisory and other relevant bodies to strengthen national AML/CFT potential. On April 27, 2016, Presidential Decree No. 1993 also adopted the National Strategy for Enhancing Transparency and the Fight against Corruption for 2016-2018, which aims to increase transparency in public institutions, accountability and public participation, as well as the use of new technologies. Important legislative reforms have been undertaken since the adoption of the MER. In addition to the amendments to the Criminal Code (CC) (April 2015 and June 2017) and the AML/CFT Law (November 2015 and March 2016) mentioned in previous SDFs, the Republic of Azerbaijan adopted the following laws: "On amendments to Law of the Republic of Azerbaijan "On state registration and state register of legal entities", April 14, 2017; "On amendments to the" Regulation on the Anti-corruption Commission of the Republic of Azerbaijan ", approved by the Law of the Republic of Azerbaijan No. 906-IIQ of May 3, 2005", April 14, 2017; "On Amendments to the Law of the Republic of Azerbaijan" On the Securities Market "of April 14, 2017; "On amendments to the Law of the Republic of Azerbaijan" On counteracting the legalization of proceeds from crime, other property and the financing of terrorism ", April 14, 2017; "On amendments to the Law of the Republic of Azerbaijan" On insurance activities "dated June 13, 2017; "On amendments to the Criminal Code of the Republic of Azerbaijan", June 13, 2017; "On Amendments to the Law of the Republic of Azerbaijan" On Currency Regulation "of June 13, 2017; "On amendments to the Code of Administrative Offenses of the Azerbaijan Republic", June 13, 2017; "On amendments to the Criminal Code of the Republic of Azerbaijan", October 10, 2018; "On the fight against the legalization of criminally obtained funds or other property and the financing of terrorism," October 10, 2018; and "On Amendments to the Code for the Execution of Sentences of the Republic of Azerbaijan", October 10, 2018. In addition, a number of Presidential Decrees and Ordinances of the Cabinet of Ministers were adopted, in particular regarding financial supervision, information on beneficial ownership, declaration of cash in national currency and targeted financial sanctions. A guide was also prepared on the freezing of assets, money laundering in free trade areas, confiscation and return of assets, financial investigations, Know Your Customer (KYC) and Risk-Based Approach (RBA) for credit organizations. An important institutional reform was the creation of the Financial Markets Supervision Authority (FIMSA) by Presidential Decree No. 760 (February 3, 2016). FIMSA began functioning in April 2016 and, until its liquidation, acted as a supervisor for AML/CFT for organizations previously covered by the Central Bank (banks), the Ministry of Finance (insurance sector), the State Securities Committee (securities market) and Ministry of Communications and Information (post offices). Its creation was aimed at improving licensing, regulation and supervision of these sectors. Since 2016, the AML/CFT supervisory functions of the MCIT (post offices), the CBA (commercial banks), the SCS (securities sector) and the MFA (insurance sector) have been taken over by FIMSA. In this regard, FIMSA had the right to issue rules. After liquidation, all FIMSA powers, including in the area of AML/CFT, were transferred to the Central Bank of Azerbaijan. FIMSA was funded not from the state budget, but from fees paid by controlled organizations.

After positive feedback on the proposed Financial Intelligence Unit (FIU) model from the Egmont Group, the Decree of the President of the Republic of Azerbaijan "On the establishment of the Financial Monitoring Service of the Republic of Azerbaijan" was signed on May 25, 2018. According to this Decree, the Financial Monitoring Service was created as an independent FIU with the aim of improving compliance with the requirements in the field of combating the legalization of proceeds of crime or other property, as well as financing terrorism, strengthening the capacity of the supervisor and enhancing the coordination of the activities of relevant public authorities and institutions. Authorities report that due to violations of the AML/CFT Law, 34 members of senior management and 6 senior officials of organizations controlled by FIMSA were punished. According to FIMSA, in 50 cases, sanctions totaling 75,000 manat were applied to banks, insurance companies, post offices and non-bank organizations: sanctions totaling 45,000 manat were imposed on 30 banks; sanctions totaling 15,000 manat were imposed on 10 insurance companies; 8 non-bank credit organizations were authorized in the amount of 12,000 manat; sanctions amounting to 3,000 manat were imposed on 2 post offices. In addition, the authorities report that 37 notaries were disciplined for not identifying clients. The Law of the Republic of Azerbaijan "On Amending the AML / CFT Law" of October 12, 2018 amended the Law "On AML/CFT", which states that there is a risk of financing terrorism, money laundering or other criminal acts. Funds received should be evaluated once a year, and inspections should be carried out in accordance with the identified risks. In addition, according to authorities, FIMSA has prepared a risk-based surveillance methodology that is being put into practice. The authorities report that FMS employees participated in 51 inspections conducted by FIMSA between 2016 and 2008. Moreover, various supervisors 21 times requested information from the FMS on issues related to AML/CFT.

3. WAYS OF IMPROVING THE RISK MANAGEMENT SYSTEM OF LEGALIZATION (LAUNDERING) OF PROCEEDS FROM CRIME AND TERRORISM FINANCING IN BANK SYSTEMS OF UKRAINE, AZERBAIJAN AND LATVIA

National characteristics and the achieved level of efficiency of AML/CFT systems determine the nature of the tasks on improving the AML/CFT banking systems of the regulators of Ukraine, Azerbaijan and Latvia. The main direction of improving AML/CFT systems in national banking systems is the implementation of international standards, including the Fourth adopted in 2017 and the Fifth adopted in 2018 EC Directive on AML/CFT, aimed at more accurately identifying the true beneficial owners of firms. While in Ukraine and Azerbaijan the legal and organizational systems for managing ML/TF risk and reputational (compliance risks) banking risks continue to develop, increasing compliance with international standards, in Latvia it formally already meets all international requirements. The geographical location and historical relations of Latvia with neighboring countries have determined its role as a regional financial center with a high share of deposits from the CIS countries in US dollars. Despite the fact that all the rules of international AML/CFT regulation have been introduced in the banking system of Latvia, its effectiveness has been recognized as insufficient by international regulators. Followed in 2018 a sharp tightening of international requirements for AML/CFT in the banking system of Latvia led to the adoption and implementation of a plan to reduce the share of non-resident accounts to 5% and the actual liquidation of the non-resident sector. As a result, nearly 10 billion euros of foreign clients left the Latvian financial market. The sharp toughening of the AML/CFT requirements posed the problem for the bank regulators of Latvia in protecting the legitimate interests of bank customers, as a significant increase in the complexity and responsibility of personnel when checking customers and their counterparties often led to a simpler and cheaper solution – closing the account of a particular company. From 2019 to 2022, Latvia shall submit annual reports on how to improve the situation when Moneyval prepares the next report.

The ways to improve the AML/CFT system in Latvian banks today are to deepen a risk-based approach, tighten client disclosure requirements, refuse to cooperate with shell companies (dummy companies), increase the resources of supervisory authorities, including financial intelligence for strategic and operational analysis. An important area is staff development in the field of AML/CFT through training, consultations with specialists and training on their own practical experience. These areas, of course, are relevant for the banking systems of Ukraine and Azerbaijan.

4. CONCLUSION

Banks reputation and banking activity effectiveness in the context of the globalization of financial markets depend on the successful counteraction to money laundering and the financing of terrorism (AML/CFT). The formation and development of AML/CFT systems in national banking systems is taking place under the conditions of constant tightening of the requirements of international regulators to increase the effectiveness of ML/FT risk management. Currently, the relevance of AML/CFT to national banking systems has intensified due to the recession caused by the COVID-19 pandemic in the global economy and the growing uncertainty of its further development. The influence of institutional factors - historical, national-cultural, geopolitical, and legislative determined the differences in the organization of ML/FT risk management in the banking systems of Ukraine, Azerbaijan and Latvia that arose in the post-Soviet space in the 1980s and 1990s. In Ukraine and Azerbaijan, the legal and organizational system for managing ML/TF risk and reputation bank risks (compliance risks) continues to be formed in accordance with international standards, while in Latvia the AML/CFT system formally already meets all international standards. An important criterion for the effectiveness of AML/CFT is the number of ML/FT investigations, trials, and convictions that match the level of ML / FT risks in the country. The lack of human and information technology resources allocated to AML/CFT limits the analytical potential of the AML/CFT system of banks and may lead to unjustified infringement of the rights of clients. The revealed inefficiency of the AML/CFT systems of banks in Ukraine, Azerbaijan, and Latvia, with more and more complete implementation of the recommendations and directives of international regulators - FATF, MONEYVAL and the EU, indicates the decisive role of not formal, but substantial - institutional factors. Improving AML/CFT in the banking systems of Ukraine, Azerbaijan and Latvia requires taking into account the national characteristics of countries. Assessing the prospects for improving AML/CFT systems, one can be sure that all significant changes in international regulation will be widely accepted in the national banking systems of Ukraine and Azerbaijan. However, their real effectiveness will continue to be limited by the level of economic development of the country, national specifics and the nature of the ongoing state socio-economic policy.

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HOUSEHOLD FINANCIAL BEHAVIOR IN COUNTRIES WITH TRANSITION ECONOMIES: EFFECTS AND CONTRADICTIONS

Azer Babayev
Azerbaijan State University of Economics
Baku, Istiqlaliyyat str., 6, 1001, Azerbaijan
azik.347@yandex.ru

Bogdan Stetsenko
SHEI Kyiv National Economic University named after Vadym Hetman
Kyiv, avenue Peremohi, 54/1, 03057, Ukraine
stetbog@ukr.net

ABSTRACT
The article analyzes the problematics of financial behavior of households in countries with transitive economies. The influence of objective and subjective factors on financial behavior is characterized. The connection between the concepts "financial behavior", "economic behavior", "financial literacy" is disclosed. The role of historical factors in the formation of financial behavior and financial literacy on the example of former USSR countries is determined. The relationship between financial behavior of households and development level of financial sector is evaluated. Recommendations aimed at activization of household investments in the financial market with the help of their financial behavior transformation are justified.
Keywords: *Financial market, Financial sector, Financial institutions, Households, Financial behavior*

1. INTRODUCTION

Any country that reforms its own economy solves a whole range of complex problems, which differ by degree of their severity and impact on the final results. Existing experience shows that the presence of certain favorable conditions (for example, in the form of natural resources) is not always the key to successful transformations. For effective economic reforms the basis should be rather the presence of political will and readiness of society to accept such changes. Only synchronization at the level of "society-government" gives the opportunity to quickly and effectively implement necessary reforms. All this applies to financial sector. It is clear that the vast majority of countries with transitive economies need adequate financial support for their own development. At the same time, the opportunities of national financial markets at the beginning of the reforms are obviously extremely low. Accordingly, countries with transitive economies are often the recipients of capital in global financial markets. This dependence very often has catastrophic consequences, because it provokes additional risks at the level of public finances, in the part of balance of payments, in terms of additional debt burden on business, etc. These problems can be solved through the rapid development of domestic financial market, primarily in the part of interaction between financial institutions and households. However, investment strategies of households in countries with transitive economies are determined by specifics of their financial behavior, which, in turn, reflects the level of financial literacy. It should be noted, that it especially in the countries of former USSR significant part of the population at the beginning of the reform phase did not have the necessary experience of financial services' consuming. As a result, natural skepticism about the functioning of the financial sector has formed, which was reinforced by appropriate corporate strategies of financial intermediaries.

As a result, in most countries with transitive economies, there is a weak degree of households' "involvement" in the model of formation and usage of savings, and financial behavior is determined by numerous false stereotypes.

2. "FINANCIAL BEHAVIOR - FINANCIAL LITERACY - FINANCIAL KNOWLEDGE": PRINCIPLES OF INTERCONNECTION

Quite often for characteristic of the current stage of human civilization development such terms as "financial economy", "financial civilization", etc are used. In such conditions, the question arises about the possibility of science to explain the large-scale role of finance in the modern world, and the place of individual in such financial relations and processes, and the perception of individuals of this place. Such research is impossible without transformation of methodological foundations of financial science, which further will pay more and more attention to human, its' preferences, habits, behavior. For many centuries, economic theory was based on rational human behavior. However, later such approach, under the influence of primarily pragmatic principles of economic relations, was revised (in particular, in terms of practical implementation of behavioral concepts) (Ashraf, Camerer, Loewenstein, 2005; DellaVigna, 2009). Such problematics is additionally intensified by manifestations of knowledge economy, in which knowledge itself becomes the main driving force of economic progress. It is obvious that knowledge, as the modern economic resource, is directly connected with human, its' abilities (Machlup, 1962; Schultz 1971; Becker, 1964). Moreover, such changes are relevant for Azerbaijan and Ukraine, because to a large extent their financial science is still captivated by stereotypes of the Soviet period, when human was considered as a kind of "cog" for state mechanism. Necessity of rapid implementation of the concepts of "financial behavior", "financial literacy", "financial outlook" into the conceptual apparatus of economic science is not only a tribute to the fashion for interdisciplinary research. This is real response of scientific community to the complex contradictions that inherent to financial environment. Modern philosophy considers the outlook as a multi-component concept that contains various structural elements, which are faith, ideas, practical experience, knowledge, desires, principles, values , beliefs, and others. Note also the fact that the vast majority of human outlook elements have an intellectual basis and directly related to knowledge. The concept "economic outlook" is much less common. Herewith, its' interpretation actually repeats the approach to the essence of outlook, only emphasizing a human's awareness of it's' place in economic life and its own attitude to it. In this case, we are not talking about a certain ignoring of economic outlook role in public life, but rather here we are dealing with the analysis of economic relations only in the context of outlook as the only integral understanding of human's place in the world. However, the importance of economic and financial relations for each person determines the necessity to distinguish as the concept "economic outlook" and also a concept "financial outlook". In turn, financial behavior is a real reflection of financial outlook, and with it - financial literacy. However, the question about the essence of financial behavior is not trivial, because it is behavior that determines financial relations of individual participants and particular social groups at all levels. Modern science considers behavior as a form of interaction of living beings with the external environment. However, financial behavior is one of the types of social behavior, so it is formed and realized in financial relations of individual with other economic agents. Financial knowledge, as the basis of financial behavior of individuals and corporate strategies of financial institutions, has their own characteristics. Note, that modern science pays a lot of attention to the essential characteristics of knowledge (Stewart, 1997; Colman, 2001). To them, in our opinion, first of all we need to include the following:

1) Implicitness of knowledge. Knowledge, as a resource, does not have a materialized form, which, accordingly, determines the features of their management. This "invisibility" has several forms of manifestation - both at the level of financial institution and at the level of

consumers and customers. The place of financial intermediaries in the modern knowledge economy is largely determined by informational nature of financial instruments, financial services and financial transactions. This reveals the implicitness of knowledge for financial institutions in another area - because of their "invisibility" at the level of financial services' consumers.

2) In the realization process of its corporate strategy, a financial institution uses all possible types of knowledge. In the most common version, the classification of knowledge involves the allocation of scientific, technological knowledge, innovation, human capital, competencies, information and communication component. Even the simplest and most formalized model of financial intermediation includes the necessity to apply all types of knowledge without exception. Moreover, the features of financial intermediaries' activities determine the features of formation of normative requirements by the state for both the level of employees' knowledge and the processes of its use.
3) Initiative of knowledge. The economic effect from knowledge as a resource arises only in the case when financial institution and its representatives use them in their practice. Unused knowledge does not benefit to organization that owns it without use. The modern concept of human capital management is based on the most effective use of knowledge that is possessed by organization members. At the same time, in the context of financial intermediaries' activities, such feature of knowledge as initiative acquires a special color due to the presence of agency conflict. The vast majority of financial services provide that consumers or customers delegate at the level of financial institutions part of their authority to manage capital. In such circumstances, the agency conflict determines a number of issues regarding the availability of knowledge in the organization and its employees (in this case - the financial institution), the level of which will be sufficient to ensure such results of finance management that another economic agent could not achieve independently. And although the problematics of agency conflicts is widely represented in professional literature (Jensen and Meckling, 1976; Ang, Koul and Lin, 2000), the problem of overcoming them is practically unresolved.
4) Such characteristic of knowledge as subjectivity is directly connected with the previous one. Even if we theoretically assume that different economic agents have the same knowledge, this does not mean that they can have the same effect. Clear examples of such failures are the cases of bankruptcy of the largest financial institutions with a century-old history due to mistakes of highly qualified management. The reasons of irrational financial decisions are extremely many, but we can safely affirm that in any case they are based on the process of using information knowledge.
5) The infinity of knowledge is in fact characterize only the impossibility of measuring it, but in our opinion, it cannot be equated with infinite possibilities of obtaining economic benefits from their application, especially for financial institutions. Such restrictions are primarily have institutional nature, both through the financial market itself, and through the labor market, and through purely subjective reasons connected to human activities.
6) Competitiveness, as a feature of knowledge is formed primarily under the influence of the possibility of their uncontrolled growth, even regardless of the will of their creators and owners. Increasing of knowledge role in economic and with them in financial relations gradually led to the emergence of fundamentally new direction of management at the level of business units - knowledge management. Accordingly, knowledge management has become one of the most important functional strategies of corporate management.

Thus, financial behavior of households (individuals) among other things reflects the level of their financial knowledge.

In turn, financial institutions in their corporate strategies also rely on the knowledge they possess, as well as take into account the level of financial knowledge and financial behavior of households that has formed at particular time.

3. KEY CHARACTERISTIC OF FINANCIAL BEHAVIOR OF HOUSEHOLDS IN COUNTRIES WITH TRANSTIVIVE ECONOMIES: POSTSOCIALISTIC SYNDROM

The main parameters of financial behavior of households in countries with transitive economies will be considered on the example of Ukraine. Let's note at once that existing stereotypes at the level of individuals have historical character and are primarily connected with following factors: firstly, the lack of experience in the majority of population of interaction with financial institutions with gaining of independence; secondly, frankly unsuccessful results of privatization from the point of view of society; thirdly, contradictory nature of economic reforms; fourthly, the paternalism of the state in relation to its own citizens; fifthly, features of financial sector development. It has been 28 years since Ukraine gained its independence, but till this time financial literacy level remains extremely low even among those part which was born after 1991. It is paradoxical that in a country with an extremely high level of higher education (80-85%), financial literacy and financial behavior of households suffer from numerous irrational stereotypes. In our opinion, the current situation is the result of economic policy failures, including at financial sector level. A clear example in this context is privatization. The apparent inability of the state in the 1990s to ensure equality and social justice in privatization has determined long-standing skepticism from the part of most citizens about economic reforms in Ukraine. It was impossible to count on another result in the conditions of total poverty of the population. At the end of 1999 (the actual end of active privatization), 42.7 million people (or 87.4% of the total population of Ukraine) received average monthly incomes below the subsistence rate. It is clear that in such circumstances, the choice between the hypothetical income from the ownership of shares and current income through the sale of privatization securities was decided in most cases in favor of sale. When analyzing the impact of economic reforms on the financial behavior of households in Ukraine, it is worth considering that in general their results are extremely contradictory. First of all, we must pay attention to the impossibility of solving poverty problems for a long period of time. As a result, there is a significant differentiation of population income in Ukraine, and only a small part of people can be attributed to the middle class. It should be noted that the modern approach to identifying the concept of «middle class», besides material component, often operates with other criteria, in particular, we talk about certain positive perception of degree of own adaptation to market reforms, focus on achievements' value. For Ukraine, obtained by such criteria estimations are extremely low. Another problem that has not been solved for almost three decades of reforms is «shadow» sector, which according to official data is about 40%, and according to expert estimations - up to 60%. The nihilism of population in the issue of obtaining official income leads to significant distortions in the labor market. Although the incomes of many households are outside of formal economy, they can potentially be seen as additional resource on which financial intermediaries can count. It will be possible in the case of competent state policy realization in the sector of capital amnesty; and also implementation of active business strategies of financial institutions, directed at attracting of individuals' savings. It should be noted that for many years the state has demonstrated the necessity to reduce the role of "shadow" economy and capital amnesty, but in the vast majority of cases, such declarations remain unrealized in pragmatic field. Policy of leading financial-industrial groups significantly influences on the financial behavior of households in Ukraine. Perhaps the main reason for skepticism from the part of society to their activities is the attitude of the state to such form of cooperation of production and financial capital. To a large extent, increasing influence of financial-industrial groups in Ukraine was provided by explicit and implicit state support.

As a result, there is tremendous fusion of business and politics, which significantly impact on public perceptions of corruption and on trust to government and the state as a whole. Let's pay attention to the fact that since 2006 the level of public confidence/distrust to the activity of National Bank of Ukraine was too way negative. And if in 2005 this indicator was recorded at the level of -3.5%, then at the beginning of 2019 it was at the level of -62.3%. It is clear that all this not only distorts, but also complicates the relationship between population and financial institutions in Ukraine. As a result, there is a gray and “shadow” credit market, which is outside the legislative field, but is popular among Ukraine’s citizens. Middle-level bank employees also take part in their realization, which thus try to earn additional income. All the described processes take place against the background of low efficiency of institutional mechanisms of requirements’ satisfaction and fulfillment of obligations by credit agreements. In no small part, the state contributed to this by slow reaction to the problems in the credit market. As a result, there was created a basis for expansion of various microfinancial organizations and collection companies, whose activities further undermine public confidence to financial sector. In such conditions, state banks should act as a certain stabilizer. It must be acknowledged that in Ukraine their inertial perception in the eyes of consumers as banks with a high level of reliability has been preserved. In addition, the state tries in every possible way at legislative level to promote the formation of the image of state-owned banks as reliable financial institutions through the establishment of additional guarantees in comparison to private banks. In this case, we are dealing with an interesting psychological effect, when consumers of financial services are oriented on certain historical analogies concerning state-owned banks, rather than information about the real state of these banking institutions. Based on this, it is state-owned banks are the group of the largest owners of deposit portfolio in Ukraine (60-65% of total deposit portfolio), which accumulates additional risks for both banks and entire banking system in the conditions of instability of public finances. Significant problems are also accumulated at the level of interaction of non-bank financial institutions with households. In particular, macroeconomic instability, permanent currency crises and inflation for a long time have undermined confidence to long-term investment instruments. As a result, extremely modest results of life insurance companies and private pension funds. A peculiar situation is forming when the richest people in Ukraine are trying to bring capital abroad, and the middle class and people with low-income do not have sufficient motivation to invest in financial instruments. In our opinion, it is difficult to ignore such a problem as paternalism of the state concerning its citizens. At first glance, such strategy looks at least strange in a country with a high level of poverty. However, in many cases, the state tries to "compensate" the failures of its economic policy through various payments and privileges. This problem is especially acute during the election period, when each government tries to persuade electoral sympathies in its favor through certain material incentives. It must be acknowledged that such strategy is often successful, which is also evidence of financial behavior features of households.

4. FINANCIAL BEHAVOIR OF HOUSEHOLDS AS A RESULT OF IMBALANCES IN THE DEVELOPMENT OF FINANCIAL SECTOR

At the same time, it should be emphasized that irrational financial behavior of households is largely determined by features of corporate strategies of financial institutions in Ukraine. In 1990s in Ukraine, the principles of market behavior of financial intermediation were laid down, which could not be changed even now. In the process of their activities, financial institutions tried and are trying to maximize their own benefits through the use of various gaps in the legislation, realization of "shadow" schemes, and others. And large-scale dominance of financial-industrial groups makes such corporate strategies more attractive and effective than others. Thus, at the stage of creation, usual practice of Ukrainian financial-industrial groups was the presence of an industrial core (formed mainly during privatization and post-

privatization redistribution of property). Gradually, financial institutions were established, including banks, insurance companies, institutions of collective investment, financial companies, and, more rarely, private pension funds. In such organizational model, activities of financial component were aimed at solving priority tasks for the industrial cluster. Even today, a significant part of domestic financial institutions purposefully realize "subordinate" strategy, which takes into account primarily the possibility of minimizing tax payments and capital withdrawal. In such conditions, the choice of investment objects is rather conditional process, which is subordinated to the main goal - maintenance of various projects and "optimization" schemes. Described processes are based on the influence of such features in financial behavior of households:

- at an extremely high level of information asymmetry, that is inherent to the activities of financial institutions in our state;
- at stereotypes and features in financial outlook and financial behavior of domestic households;
- at leveling the role of information and knowledge as a basis of interaction between financial institutions and consumers of financial services.

Also it is worth to state the principles of activities of various companies in Ukraine that operate in the market of individual investments. The choice of investment object depends on current trends in the global financial market - in the volatility conditions of currency segment, such companies offered currency trading, at the peak of popularity - trading Bitcoin and other crypto currencies, often offering trading on the US stock market. Herewith, the level of financial knowledge of a potential bidder (read - the consumer of such services) for these companies has no absolute value. Everyone is promised to be trained, open a demo account, and provide the maximum return with the minimum risk and amount of invested resources. We do not claim that all companies offering such services, without exception, operate according to described scheme. However, ordinary citizens are gradually forming vision about relative simplicity of financial transactions, the purpose of which is making of profit is largely guaranteed. And only after investor deposits real money into the account and loses them, here comes an understanding of the duality of financial investments, risks and high probability of loss. It should be noted that such participants of financial market of Ukraine conduct an active campaign of advertising their own services. Quite often, their activities are the focus of law enforcement, as it turns out that these companies are only imitating bidding, but in fact they engage in fraud.

5. POSSIBLE CHANNELS OF POSITIVE INFLUENCE OF STATE POLICY ON THE FINANCIAL BEHAVIOR OF HOUSEHOLDS

The obviousness of the issue about destructive impact of households' financial behavior on the trends of financial sector in countries with transitive economies determines the necessity to develop measures to overcome such distortions. It is clear that in this context it is expedient to ensure changes both at the level of state economic policy, and at the level of corporate strategies of financial institutions, and from the point of view of households themselves. From the whole range of possible solutions, special attention should be paid to changes in public policy that will stimulate rational financial behavior of households. In our opinion, on the horizon of 3-5 years, countries with transitive economies (including countries of the former USSR) should:

- gradually refuse the policy of paternalism concerning its own citizens, despite the possible loss of electoral sympathies. The experience of successful reforms clearly shows that there are no simple recipes on this path. Even more - some segments of population will be forced to radically change their worldview;

- form institutional "protectors" for the spread of opportunistic corporate strategies of financial intermediaries, which would make it impossible to maintain additional economic benefits from the use of information asymmetry and low level of financial literacy;
- transform existing programs of increasing of population financial literacy by maximum expansion of communication range. The main purpose of such programs – radical change in the worldview of individuals, the level of economic knowledge and their financial behavior.

An important aspect of formation problem of households' financial behavior in Ukraine is the activity of the mass media. Today, the profession of economic analyst or columnist is second only to political scientists and political commentators in popularity (in the presentation of the mass media). Numerous television talk shows are actively discussing economic, and with it the financial topics. Actors of such shows allow themselves to make loud statements and forecasts about a wide range of financial indicators - from the UAH exchange rate to the amount of funds raised through the issuance of government bonds to the state budget. Herewith the horizon of such forecasts extends from one day to several years, and present persons are not interested in the quality of them. Moreover, such "experts" are often engaged, and form their own forecasts and recommendations based on the priorities of major political forces. From the above we can make a conclusion that financial self-education in Ukraine forms numerous distortions at the level of financial outlook, which further destructively affect the financial behavior of households. In this regard, it should be noted that at the current stage there are in fact no legal grounds for establishing liability for manipulating of public opinion on economic and financial issues. Any attempt to regulate these issues by setting requirements concerning mass media activity, or the application of codes of professional ethics immediately met with criticism from the mass media environment and various international organizations about the violation of freedom of speech in Ukraine.

6. CONCLUSION

The further development of transitive economies will largely depend on the state's ability to transform economic behavior of households, including in terms of their interaction with financial institutions. The model formed in economically developed countries, where net savings are formed at the households' level and directed to the financial market, was not fully implemented in most countries of the post-socialist camp. As a result, resource potential of such markets is extremely limited, which significantly hinders their economic development. In order to remedy the situation, the state should implement a set of measures to support the investment activity of households and ensure a high level of financial inclusion. However, it should be taken into account that such transformations at the level of financial behavior will be extremely complex and long-lasting, and the expected effects in many ways will have probable character.

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BRANDING OF CROATIAN ISLANDS ON SELECTED EXAMPLES

Ivana Bekic
VERN' University of Applied Sciences
Trg Drage Iblera 10, 10000, Zagreb, Croatia
ivana.bekic@vern.hr

Nina Bozickovic
VERN' University of Applied Sciences
Trg Drage Iblera 10, 10000, Zagreb, Croatia
ninabozickovic@gmail.com

Zrinka Mrkonjic
VERN' University of Applied Sciences
Trg Drage Iblera 10, 10000, Zagreb, Croatia
zrinkamrkonjic@gmail.com

ABSTRACT

Today's evolving macro environment conditions are characterized by hyper-production and hyper-competition. Remaining competitive requires differentiation through utility and emotional values, which is made possible by branding. Destination branding brings multiple benefits. Primarily helps achieve desired market placement and consequently builds an emotional connection with tourists that leads up to creating a sustainable competitive advantage. In order for the branding process to be successfully implemented, it is necessary to develop a strategic framework for communicating the values present in the foundations of the brand. Effective implementation of destination branding strategies presupposes the interactive involvement of the public and private sectors. The aim of this paper is to point out the importance and potential of branding of Croatian islands. To this end, a secondary and primary survey was conducted, i.e. an analysis of selected statistical indicators and a survey of managers of tourist boards on the islands of Cres, Mljet and Rab. The contribution of the research stems from the conclusion that the strategically driven branding process is a prerequisite for year-round tourist attendance.

Keywords: *Branding, Destination, Strategy, Emotional connection, Sustainable competitive advantage*

1. INTRODUCTION

Tourism, as one of the main economic activities in the Republic of Croatia, arouses great interest of all stakeholders. The Croatian coast stands out for its diversity and indentation (Vlahović, 2009), which is also highlighted by the long-standing slogan of the Croatian Tourist Board: Croatia - the land of a thousand islands. Each Croatian island is characterized by a unique set of natural, social and economic features. The obvious differences and uniqueness of individual elements of the marketing offers are main preconditions for creating brands. A strong and recognizable brand is an indispensable part of marketing communication and the foundation of building a relationship with the consumer (Kotler, Keller and Martinović, 2014: 242). Namely, the main goal of this paper is to point out the importance and potential of branding of Croatian islands on selected examples (Cres, Mljet, Rab). To this end, auxiliary goals have been set:

1. Analyze the identity of the island as a basis for building a brand;
2. Point out the importance of adopting an island-wide strategy in the context of successful branding;

3. Highlight the potential impact of the brand building process on the development of new forms of tourist offers that will contribute to the year-round tourist offer;

The above-mentioned goals are set with the following assumptions:
1. Croatian islands have at their disposal an identity on which it is possible to build recognizable and competitive destination brands;
2. The tourist potential of the islands can be systematically developed as a brand in tourism by adopting a strategy at the level of the entire island;
3. Inclusion of island resources as a whole in the management of the island's brand is a prerequisite for year-round tourist attendance.

The research part of the paper is based on data obtained by a telephone survey in which the managers of the tourist boards of the three Croatian islands of Cres, Mljet and Rab participated. The research instrument was a survey questionnaire in which the first group of questions covered information on the island's branding process, the development of strategies needed to implement successful branding and future planning. The second group of questions covered statistics of the 2013. and 2018. season, in order to see the shifts achieved within a five-year time period. As a preparation for compiling the survey questionnaire, a preliminary research was previously conducted, i.e. an interview with the director of the Vis tourist board and the deputy mayor of the town of Vis. The analysis of the obtained data speaks about the potential and the existing branding process of an individual island. In the final part of the paper, a proposal for branding of selected islands was presented with the aim of greater recognition and extension of the season with new forms of specific offers.

2. CONCEPTUAL DEFINITION OF A BRAND

Marketing, and thus branding, is based on sensations and consumer experiences that are the basis for building a long-term relationship of trust and satisfaction with the target market segment (Kotler et al., 2006:9-10; Kotler, 2001:19-23). “Good marketing is not a coincidence, but the result of careful planning and implementation with the help of the most modern instruments and techniques” (Kotler, 2014:3). By use of product, price, promotion, distribution, physical environment, people and processes as tools to help create relationships with consumers in a bid to communicate the values by which a particular marketing offer differs in the market. Values are the foundation for brand building (Kotler et al., 2006:33-35; Kotler, 2001:292-295). “We can think of marketing as a way to ensure that consumers have experience with products and services in order to create the right structure of brand knowledge and enable it to be retained in memory” (Kotler, 2014:164). The term brand, as defined by the American Marketing Association, assumes “the name, term, sign, symbol, form or combination of all of these, the purpose of which is to identify the goods or services of one seller or group of sellers and distinguish them from competition” (Kotler, 2014:241). Numerous theorists agree that the term brand encompasses a broader meaning that is not focused solely on the visible features of the marketing offer. It implies a set of consumer associations that reflect their emotions, sensations and experiences (Paliaga, 2008:19). Thus Skoko (2009) believes that a brand is a set of all mental associations caused by stimuli from the environment. The brand creates an image of a product or service in the minds of consumers (Kotler, Keller and Martinović, 2014:241). According to Keller (2003: 9), a brand ensures product origin identification, determination of producer / service provider responsibility, reduction of purchase risk, reduction of product / service search cost, promise and guarantee, and presupposes a significant symbolic means of quality. According to all of the above, the marketing role of the brand can be observed through the aspect of market differentiation and the aspect of creating a special sensation with potential customers.

In addition to tangible, intangible, sensational differences are also important (Paliaga, 2008:19). The ultimate value of a brand is determined by consumers and is presented primarily by their personal experience (Vranešević, 2007).

3. THE BRANDING PROCESS OF A TOURIST DESTINATION

Technological progress has led to international infrastructural connectivity and enabled the development of the tourism sector. In conditions of hyper-production, the tourist is looking for new sensations. Creating a recognizable brand of a particular tourist destination in a saturated market is becoming a necessity (Kotler, Bowen and Makens, 2010:725-730). The brand of the destination needs to communicate the unique experience of tourists. "No matter how famous the destination is, how rich and unique its culture and its natural beauty are, the most important measure of a destination is the reality of how visitors experience the destination, how visitors are treated and how they felt during their stay" (Rogers, 2008:132). Development of tourism has led to changes in the definition of a tourist destination. Previously, the notion of a tourist destination was closely related to the notion of a tourist spot. Today, the term tourist destination refers to a complex system of offers in an organized and defined space within which tourists find content that will first attract them and then keep them for a longer stay (Kotler, Bowen and Makens, 2010:726-727). Laws (1995 according to Jakovljević, 2011) points out that a destination no longer means just an area, but a complex set consisting of numerous commercial tourist services, such as accommodation, gastronomy and entertainment, and elements important for touristic development such as landscape and domicile population. It can be seen from the above-mentioned that destination branding requires the commitment of different providers who form separate elements of the marketing offer united by the brand. Due to its complexity, the implementation of the destination branding process assumes the synergy of state institutions and the private sector. "It can be said that the branding of tourist destinations is very similar in nature to the branding of products. The only difference is in their complexity, i.e. in the complexity of tourist destination products" (Radišić, Berc and Mihelić, 2006:187). Thus, when positioning tourist destinations on the market, different variables, shown in Table 1. are used.

Table 1: Variables that affect placement

VARIABLES	
• Architecture and design	• Influence and power
• Attractions	• Symbols of the area
• Celebrities	• Legends and myths
• Climate	• Geographical position and approach
• Gastronomy and wine	• Natural environment
• Culture	• Nightlife
• Emotional benefits and feelings	• People
• Ethnicity	• Personality and values
• Events	• Physical attributes
• History	• Social benefits
• Industry and local products	• Sport

Source: Križman-Pavlović, D., 2008

During every moment of the branding process, it is necessary to be aware of which variables are at disposal and which variable, or more of them, should be singled out in order to build the desired position in the minds of consumers. It is important to pay attention to the trends determined by the macro environment and the existing wishes of the target market during the

brand building process. Namely, the prerequisite for successful branding being the systematic coordination and communication of selected variables, which presupposes the destination brand strategy. "Strategy is the approach that destinations opt for in order to achieve their goals" (Oliva and Paliaga, 2015:17). The destination brand building strategy consists of five phases which are shown in Table 2.

Table 2: Destination brand building strategy

PHASE 1	Market research, analysis and strategic recommendations
PHASE 2	Brand identity development
PHASE 3	Launching a brand, getting to know the brand - communicating the vision
PHASE 4	Implementation
PHASE 5	Monitoring of valuations and feedback

Source: Oliva, E., Paliaga, M., 2015

Strategic planning begins with the discovery and profiling of the target market segment on the basis of which communication goals and the manner of their implementation are determined. According to the wishes of consumers, the values on which the brand identity and its systematic communication are built with the instruments of the marketing mix are defined. In the branding process, interactive communication with consumers is extremely important. It is on their perception that the brand is based.

4. DESTINATION MANAGEMENT

Destination brand management presupposes destination identity management based on the emotional connection between the consumer and the destination (Kotler, Bowen and Makens, 2010:284-287), and is the task of destination management. Bartoluci (2013) states that destination management can be defined as a business activity that combines and coordinates the work of different entities in the creation and realization of a tourism product, in order to achieve quality, competitiveness and sustainability which in turn achieve optimal economic effects. Furthermore, destination management assumes the management of destination processes from the aspect of tourist needs and destination sustainability. Rudančić (2018) in his paper says that when managing a destination, it is important to respect the unique natural resources, cultural attributes and interests of the destination. He believes that tourism must enable the realization of positive effects today, but also create a promising legacy for future generations by applying the principle of sustainability. Tourist destination management is a long-term process that should primarily ensure the competitiveness of the destination, but also the high quality of living of the population and the preservation of the original cultural identity of the destination (Kotler, Bowen and Makens, 2010:729-730). According to Petrić (2011), the body responsible for managing the destination system is the Destination Management Organization (DMO) which has the task of coordinating the activities of all development participants. The umbrella organization for tourism management in the Republic of Croatia is the Croatian National Tourist Board (CNTB). Tourist boards are the main subject of destination management, which in cooperation with local businesses, travel agencies and local people, works on branding a particular tourist destination.

5. RESULTS OF EMPIRICAL RESEARCH

The results of the research are presented within two units into which the survey questionnaire is divided. Branding issues represent the first research unit and cover four topics: 1. target markets, 2. branding process, 3. development of branding strategies, 4. creation of visual brand identity. In the second part of the research process, statistic data from the tourist seasons of 2013. and 2018. are portrayed.

5.1. Target markets

When developing a destination as a brand, one of the important components is the question of whom to address, more precisely whom to focus the marketing activities towards. In order to be able to successfully place a destination as a brand in new markets as well as to maintain and more clearly profile the position in known markets. It is necessary to know who the target consumers are, i.e. tourists. In order to accurately and precisely define them, it is certainly necessary to determine a set of demographic, geographical, psychographic and behavioral variables. The research proved that none of the surveyed islands focused specifically on one age group of tourists, but created content that could attract a wide audience. The tourist boards of Rab and Cres state that younger visitors are interested in active tourism, while the older age groups are mostly attracted by the peace and quiet, indigenous gastronomy and cultural and historical sights and events. The Tourist Board of the island of Mljet has a different attitude, they believe that younger tourists are increasingly attracted not only by active tourism, but also the peace and quiet through which they try to escape from the hectic lifestyle. As for age groups, Rab wants to attract the younger (25 to 30 years) and middle-aged population (30 to 40 years), while the island of Cres and Mljet have not specified their target age groups. As far as purchasing power is concerned, they are all oriented towards tourism accessible to everyone and not elite tourism. Germany, Austria, Slovenia, Italy and Croatia are listed as target emitting markets on the island of Rab. However, Rab additionally wants to impose itself on the new market of Scandinavian countries, which are becoming interesting to it in order to expand its offer. On Cres, the target markets are Germany, Italy, Slovenia, Austria and the Czech Republic, while the target geographical areas of Mljet are the United Kingdom, Germany, Scandinavia, Italy and Slovenia.

5.2. The branding process

The first question referred to the tradition of tourism on the island. The island of Rab has a long tradition of tourism. In 2019, it celebrated 130 years of tourism, which was accompanied by numerous events and campaigns in major Croatian cities in order to attract domestic tourists. The tradition of tourism on Cres is 170 years long, while Mljet has the shortest tradition of tourism lasting 79 years. The research of the branding process also examined the specifics by which the observed islands stand out from other Croatian islands. Each destination, in order to stand out in the market and provide a specific experience to the tourist, should provide a differentiated value. The island of Rab singles out four bell towers as its notable landmarks. These are found on almost all souvenirs and impose themselves as a viable opportunity to choose a recognizable visual identity of the brand. Among the specifics of the island are Rab crossbowmen, an internationally known association with a long tradition, the unique gastronomic product Rapska torta, as well as Rapska fjera. It is a summer medieval festival, the first and largest in Croatia. The desire to expand the offer by introducing elements of sports and recreational tourism has been recognized on Rab. There are over 80 Geo-park info points on the island, which are interconnected by promenades and hiking trails, and the goal is to declare the entire island area a Geo-park area that will be abundant in hiking, kayaking and cycling content. The specificity of the island of Mljet is its untouched nature. Mljet is often called the green island, which is emphasized by the official slogan of the island: Mljet-mystical oasis. What absolutely sets Mljet apart from most other islands is the Mljet National Park, located in the northwestern part of the island and includes tourist attractions such as Malo and Veliko jezero. Among other specifics, the rich cultural heritage, Mljet folk costumes, customs and speech stand out. Tourists recognize Mljet as a vacation spot known for the hospitality and cordiality of its locals. The branding process of the island of Mljet is aimed at enriching the cultural and gastronomic content, with a recognized story of untouched nature and remoteness of the micro destination.

The specifics listed for the island of Cres are natural landmarks, especially plant species. There are 1500 plant species present on the island, 300 of which are medicinal. The rich flora is associated with indigenous gastronomic offer with the famous olive oil. As a special feature of the island, Beli, the Recovery Center for Griffon Vultures, a legally protected bird species, also stands out. Cres is also characterized by many beautiful natural beaches and freshwater lake Vrana. The islands destination management is focused on positioning Cres as an island of natural features.

5.3. Branding strategies

In accordance with the stated specifics of each island, branding strategies defined by the managers of their tourist boards were presented and elaborated accordingly. Strategy is important for achieving set branding goals. This set of survey questions aims to determine how the branding process is managed. It was found that each of these islands to a greater or lesser extent has a developed destination brand and is working on a systematic positioning of values in the foundations of the brand. In all three observed islands, the branding process was formalized in writing in accordance with the set strategic framework. In order to attract as many visitors as possible and increasing the adaptability to the current state, strategic adjustment and planning for each coming year is extremely important in addition to long-term strategies. The island of Cres limits its planning process to the period from September to the end of December of the same year. On the other hand, Rab and Mljet plan marketing activities for the following year during the course of the current year. Regarding the necessary adjustment to the factors of the macro environment and changes in strategies, the island of Cres has not recorded a significant change during the last five years. As opposed to Mljet and Rab which have experienced moderate changes. In the case of Rab, the changes were carried out in order to expand the offer and extend the season by positioning the island in the minds of consumers as a sports and recreational weekend destination. Strategic marketing changes on Mljet were aimed at the local community and the promotion of traditional values. The management of all three islands state the exceptional importance of financial resources and cooperation with other stakeholders for the effective planning and implementation of set strategies. In all of the three observed islands, the involvement of political entities in strategic planning is largely present. A possible reason for this is the importance of tourism as an economic branch that greatly affects economic opportunities, as well as the structure of tourist boards. In addition to the directors of tourist boards, an important role is played by the presidents of tourist boards who, based on the current structure of tourist boards in the Republic of Croatia, are represented by county prefects and mayors. In all three islands, it is estimated that local businessmen/craftsmen also participate to a large extent in the branding process. The results that speak to the participation of the local population differ significantly. Thus, on the island of Cres, the local population participates to a lesser extent in the branding process, while in Rab and Mljet the situation is quite the opposite because the local population largely participates in the process. The obtained results can be related to the strategies used. The island of Mljet bases the branding process on the specifics of its local community and cooperation with the local population, unlike the island of Rab, which uses various strategies for the implementation of which the interactive communication of various stakeholders is crucial.

5.4. Creation of a visual brand identity

Rab has a recognizable visual identity of the brand based on four bell towers that are a cultural specificity of the island of Rab. Its slogan is: Rab-the island of happiness. The example of the visual identity of the island of Rab shows the planned thinking and the use of a striking symbol, the value of which has been used to the maximum. The visual identity of the Mljet brand is uncoordinated in marketing terms and has not been noticed by the general public.

However, its slogan Mljet-the mystical oasis is relatively well known and in line with the brand's development strategy. The island of Cres does not have a clear visual brand identity. Recently, its slogan "No stress on Cres" has been promoted, due to it signifying the fundamental values with which it wants to be placed within market. Cres is home to a protected bird species, the griffon vulture. Its visual identity could be based on it in an effort to make a step forward in further branding, since the natural features are something on which the island of Cres is basing its further development possibilities.

Figure 1: The visual identity of Mljet

Source: http://www.mljet.hr/

Figure 2: The visual identity of Rab

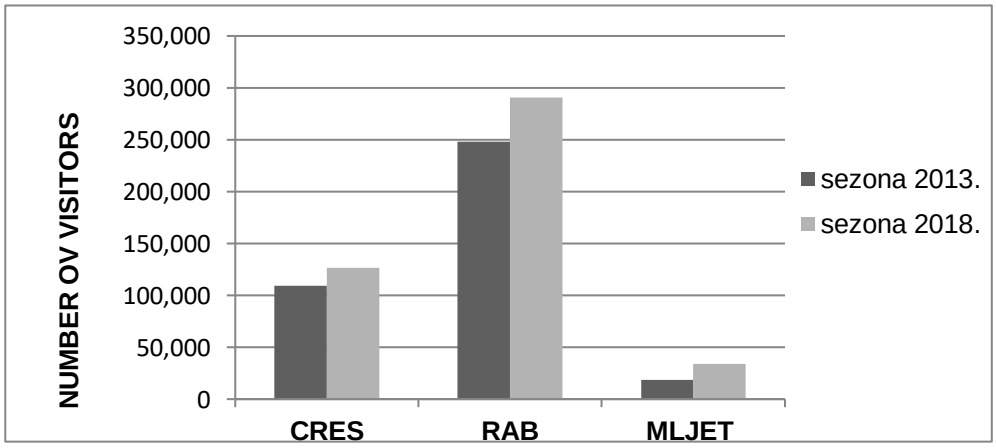
Source: http://www.rab-visit.com/hr

Figures 1 and 2 depict the current visuals for the islands of Mljet and Rab. The island of Cres lacks brand recognition in its marketing communication, both locally and on its Internet platform.

5.5. Statistical indicators

The secondary survey includes statistical indicators of tourist seasons for the years 2013. and 2018. A time period of five years was also used to examine the desired changes and advances made within the branding strategies of the observed islands. In this way, changes in numerical indicators can be observed in correlation with the strategic branding process. Insight into the databases of tourist boards provided understanding of the duration of the tourist season, the number of visitors, the target geographical areas and the ratio of domestic and foreign visitors.

Figure 3: Number of visitors to the islands of Cres, Rab and Mljet in 2013. and 2018.



Source: Own research

Comparison of the obtained data, noted that the largest increase in the number of visitors on was recorded on Rab, followed by Mljet and lastly Cres. It is Rab that records the largest growth in the number of visitors. Consequently, Rab also works the most on the development of its island brand through the implementation of destination branding using various carefully planned strategies. In contrast, the island of Cres, which records the smallest increase in the number of visitors, also shows the least involvement in the strategic planning and implementation of branding strategies of the island. Although there is a branding strategy, it is not implemented systematically as in the case of the island of Rab. In the total structure of Mljets visitors, the share of domestic visitors is constantly around 12% compared to foreigners during the observed period. The share of domestic tourists on the island of Cres is also unchanged and amounts to about 4%. However, on Rab from 2013 to 2018, the share of domestic visitors in the total structure increased from 9.10% to 14.17%, which indicates the strengthening of the strategic reorientation to the Croatian market.

Table 4: Geographical structure of guests

MLJET		**CRES**		**RAB**	
2013.	2018.	2013.	2018.	2013.	2018.
Slovenia	France	Germany	unaltered	Germany	Germany
Croatia	UK	Slovenia		Austria	Austria
Germany	Croatia	Italy		Italy	Croatia
France	Slovenia	Austria		Slovenia	Slovenia
Italy	Germany	Czechia		Croatia	Italy

Source: Own research

The geographical structure of guests remained largely unchanged during the observed five-year period and is aligned with the previously established geographical determinant of the target market segment. Regarding the duration of the tourist season during the observed years, the island of Rab, according to the results of the research, has the longest season, which reopened in 2018 for a week due to the Advent offer. The island of Mljet has a season of half a year, which is associated with the opening and closing of the Mljet National Park. The island of Cres has the shortest season lasting only four months. The island of Rab and Mljet, where the branding process has advanced and is being implemented strategically, have a longer period of the season that is not related to the traditional notion of the season in the summer months, as is the case with Cres. This confirms previous theoretical considerations on the relationship between sustainable supply and competitive advantage combined with destination branding.

6. DISCUSSION OF RESULTS

The obtained research results confirm the presented theory and the previously stated assumptions. Therefore, a survey conducted among representatives of the tourist boards of the three islands: Cres, Rab and Mljet confirmed that Croatian islands have an identity on which it is possible to create competitive destination brands. Each of these islands has its own specifics that are the basis for providing a specific tourist experience and building a brand identity. Survey questions related to strategic planning confirm the hypothesis that tthe tourism potential of the islands can be systematically developed as a tourism brand by adopting an island-wide strategy. Research has shown that each of these islands uses a development strategy that does not promote a particular micro-location on the island but the island as a whole. Various strategies are used and the involvement and interest of all stakeholders can be seen. The island of Rab, known as a bathing destination, seeks to build a brand of active tourism destination,

which is specially adapted to the domestic market and is promoted as a weekend destination that is easily accessible and provides the opportunity to engage in active holidays thus creating a year-round offer. The results also confirm the assumption that the inclusion of all island resources within brand management is a prerequisite for year-round tourist attendance. Mljet and Rab, which are developing new strategies and working to expand the offer, which assumes different resources and stakeholders, record a larger increase in tourist arrivals in the observed period, unlike the island of Cres, which shows some stagnation in terms of branding.

7. CONCLUSION

The development of technology and globalization have imposed new market conditions. The intensification of competition, as one of the direct consequences of globalization, had led to the growing importance of a relationship-based marketing way of doing business. Relationships presuppose experiences, values and emotions that are an indispensable part of the marketing offer presented by brands. In order to build and communicate the brand of a tourist destination, there is a need for strategic planning. The strategy helps focused and systematic brand development in order to ease the process of market placement. Brand management presupposes the management of the identity of a destination, during which the brand represents a promise to the consumer. In order for a branding strategy to be successfully implemented, it must involve various destination management stakeholders, i.e. government bodies, business people and the local population. The long-standing slogan Croatia - the land of a thousand islands indicates the importance of branding Croatian island destinations. The contribution of this paper is reflected in the fact that based on the conducted research, the assumption about the potential and importance of branding Croatian islands was tested and confirmed. This can be used as motivation for islands that have not yet built their own brands. Croatian islands should take advantage of existing natural and cultural features and use them to tell a story by communicating unique values and providing a specific tourist experience. In this way, they would develop their own recognizable brand that enables the sustainability of offer and provides a competitive advantage.

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BLOCKCHAIN TECHNOLOGY IN BANK'S ANTI-MONEY LAUNDERING

Atik Kerimov
Azerbaijan State University of Economics (UNEC),
Baku, Istiqlaliyyat str., 6, AZ1001, Azerbaijan
atik.kerimov@yandex.ru

Vitaliia Koibichuk
Sumy State University, Sumy, Rimsky-Korsakov str., 2, 40007, Ukraine
v.koibichuk@uabs.sumdu.edu.ua

Serhii Mynenko
Sumy State University, Sumy, Rimsky-Korsakov str., 2, 40007, Ukraine
s.minenko@uabs.sumdu.edu.ua

ABSTRACT
An extremely important and relevant issue today is the study of the implementation of innovative blockchain technology in the field of finance, e-commerce, the banking sector as the most effective tool of providing securing, saving confidential information as well as anonymity of participants in transactions. The paper describes the use of blockchain technology by financial institutions. The main features of the use of blockchain technology are identified. In this study, the advantages and disadvantages of blockchain are described. The article investigates the nature of the threats that arise during the transfer, storage and use of digital currencies for anti-money laundering. The use of blockchain technology in the bank as an integrated system for anti-money laundering is justified to minimize the negative impact of this phenomenon. For effective counteraction of the illegal income legalization in the bank, it is recommended by authors to use a three-step approach to build the anti-money laundering system. It consists of client identification based on the blockchain consensus algorithm, blocking transactions with the risk of anti-money laundering, which are determined by international and national regulators in anti-money laundering sphere as well as monitoring transactions using intellectual transaction risk assessment algorithms with the use of transaction metadata and maintaining complete information about users. The block diagram of the algorithm for conducting transactions in a bank through the system based on blockchain technology with a possible connection to the network of the external regulator in the sphere of anti-money laundering has been proposed.
Keywords: *anti-money laundering, blockchain technology, cryptocurrency, user identification, intelligent data analysis*

1. INTRODUCTION

An extremely important and relevant issue today is the study of the implementation of innovative blockchain technology in the field of finance and e-commerce. The most popular area of blockchain technologies application in the banking sector. This is due to the creation of new models of financial relationships, the pursuit of transparency and the ability to make bank transfers cheaper and faster, increase the documents circulation and reduce the share of cash in circulation around the world, and, most importantly, reliable protection of confidential information of both the client and the bank. However, more and more regulators are worried about criminals who are increasingly using cryptocurrencies for illegal activities like money laundering, terrorist financing and tax evasion.

2. ANALYSIS OF RECENT RESEARCH AND PUBLICATIONS

In works [1, 36, 28, 10], the authors propose to consider modern innovative technologies and approaches to attracting people's savings in today's economy, to define the impact of gender policy indicators, which will increase the level of banks competitiveness, create a high-quality system of counteraction to the legalization of criminal incomes and increase the efficiency of banking development as a whole [45, 26, 38, 37]. Investing in the stock market is subject to a high degree of risk. The reason is the insufficient level of financial literacy of the population, the considerable need for investment resources [42, 20, 8], so there is an urgent need to use the latest information technologies and security systems based on digital data blockchain exchange technologies [9, 33]. In the context of the de-shadowing of the national economy the anti-money laundering was considered in [32]. From an ethical point of view, this issue has been considered in the works [1, 19,23]. The visualization of bibliometric data of scientists' publications on the use of blockchain technologies in various fields and countries are represented in Figures 1-2. It is based on the publications analysis of Scopus database for the period 2014-2020.

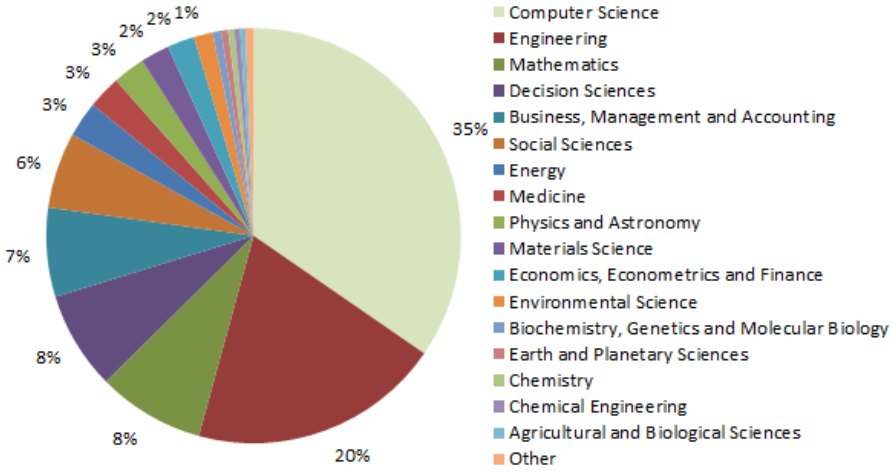

Figure 1: The network visualization of the blockchain technologies by the subject areas (Other: Multidisciplinary, Nursing, Immunology and Microbiology, Neuroscience, Veterinary, Pharmacology, Psychology, Health Professions, Arts and Humanities)

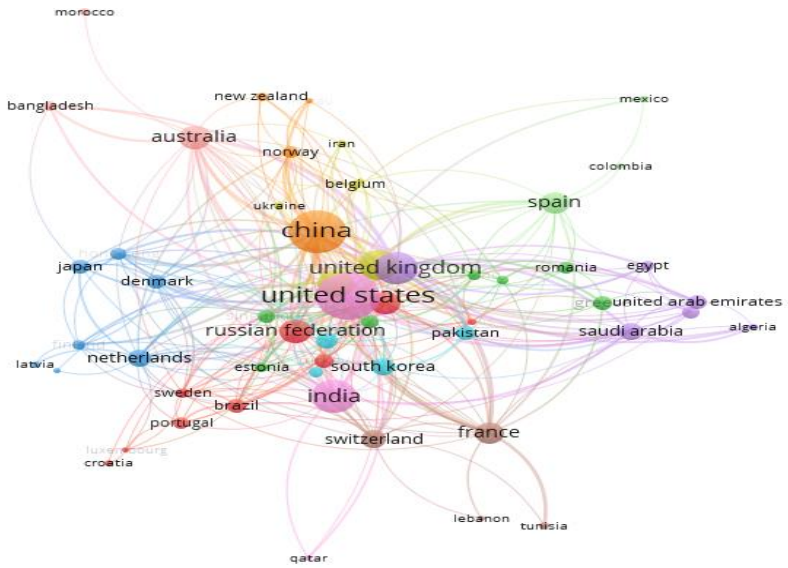

Figure 2: The network visualization of the co-citation of the papers on blockchain technologies with close areas (Compiled by the authors using the Scopus database and VOSviewer tool)

Figure 2 shows 11 clusters, formed from 57 countries, authors from which highlight blockchain technology in their articles.

3. PRESENTATION OF THE MATERIAL

Money laundering is the transfer of property if it is known that this property was obtained as a result of criminal activity. The main purpose of money laundering is to conceal the illegal origin of income. Also, this crime includes the concealment of a genuine nature, source, location, transfer of rights to property that was obtained as a result of illegal activity, or participation in this activity [14, 6]. FATF notes: "Money laundering is the processing of these criminal proceeds to disguise their illegal origin. This process is of critical importance, as it enables the criminal to enjoy these profits without jeopardising their source" [47]. The world community mobilizes forces to combat money laundering and terrorism financing. The main burden in countering the legalization of income lies with the banking sector since almost all schemes of legalizing income at one stage or another use banks as intermediaries in the transfer of funds [18, 17]. Therefore, the study aims to determine the role of new technologies, such as blockchain, in the banking sector, the possibility of their use to improve the system of counteraction to the legalization of criminal income. Blockchain is a set of interconnected units (nodes) that interact according to certain rules. At its core, it is a way of storing data that combines storage decentralization, constant registry duplication and transaction anonymity. To visualize the essence of blockchain technology, one can compare it with an open, decentralized, publicly distributed digital book, where transactions between people are recorded on many computers so that the record cannot be changed retroactively without changing all subsequent blocks and the network consensus. The basis of this technology is the use of cryptographic protocols and their combination, allows you to transfer digital information from sending node to the receiving node through the network. The transfer is carried out in blocks; each is assigned a digital signature in the form of a hash sum and serves as a unique identifier [24]. Blocks are transferred in the order specified by the hash function. For attempts to change the transfer order of the blocks, the system will generate a mismatch error between the structure and the identifier. In addition, one of the features of blockchain technology is the organization of information storage with sharing and synchronization of digital data by consensus algorithm [30, 41]. The geographical distribution of equivalent copies is carried out in different parts of the world, and there is no central administrator (Distributed ledger technology). The advantages of DLT technology in comparison with classical databases using a hierarchical or relational structure are shown in Table 1.

Distributed ledger technology (DLT)	**Classic databases**
Decentralization – there is no single centre of trust and the ability to verify any operation by any person, which makes the system transparent and reduces transaction time.	Centralization is the responsibility for data retention rests with a limited number of participants – clearly defined administrators, which limits transparency over DLT, increases reliability and increases transaction time.
Stability / security – data cannot be changed, and therefore there is no need to protect the system using particular infrastructure and firewalls. All data in the circuit is already protected by cryptography and cannot be manipulated. That is, the data stored in the block is stable and reliable, which, in turn, makes the payment transaction automated (validation becomes unnecessary).	Vulnerability is the need for a infrastructure and firewalls to protect personal data and system resilience.
Error – the longer information is stored in registers (chains), the more secure it becomes, as it is confirmed by more participants. All stored data is subject to automatic verification.	Riskiness – the longer the information is stored, the greater the risks of its preservation.

Table 1: Comparative characteristics of Distributed Registry Technology and classic databases
(Source: compiled by authors based on works [2, 40, 43])

Today, blockchain has several drawbacks and limitations. The main drawback of blockchain is its slowness. The speed of processing information on the network depends on both the number of blocks on the network and the specifications of the computers themselves. It is also affected by a large amount of information in the ever-growing block. Another major drawback is the unregulated legal use of technology in many countries. The use of blockchain raises issues of information confidentiality and trade secrets in particular. Blockchain should be viewed from two perspectives, characterized by the following concepts. According to the first concept, blockchain is considered as the necessary technology of the leading computing tools of the future cryptocurrency [14, 7, 3]. In recent years, there has been a rapid development of the digital currency industry, the issue and circulation of which is performed on different models, using various technologies and in various legal boundaries [2, 22]. Today, cryptocurrencies have high risks in the area of money laundering. In the framework of the second concept, the blockchain is characterized as technology, allowing you to create a unified system to combat the laundering of income illegally obtained to minimize the negative impact of this phenomenon [13]. At present, regulators identify the features of cryptocurrencies built on blockchain that impede counteraction to the laundering of proceeds from crime. First, it is anonymity. In its purest form, all transactions through the blockchain are anonymous, which is a significant problem in the fight against money laundering. Anonymity prevents adequate monitoring of cryptocurrency transactions, allowing for shadow transactions outside the sphere of influence of responsible authority in a country. The solution to this situation lies in the introduction of appropriate rules for establishing pseudonymity. In his case, system users must be identified and, where necessary, and regulators should have access to personal users data. This issue affects many established rights and freedoms. Some countries in the world have already begun the process of legal regulation of cryptocurrencies [15, 35]. But today we can consider this issue not settled enough to be considered useful in counteracting the legalization of income obtained illegally. Second, it is the global nature of cryptocurrency. The main threat of this feature is due to the placement of cryptocurrency markets and holders outside the jurisdiction of the regulator. This means that regulations must be adopted internationally. Third, it is the absence of a central mediator. The cryptocurrency has no regulatory focal point and no issuer. This is the role that the banking system has to assume in part. The complexity of distinguishing between cybersecurity, data protection and privacy also should be emphasized. It is generally accepted that the encryption used for the cryptocurrency functioning is an effective means of protecting citizens and enterprises from hacking, identity theft, fraud and the disclosure of confidential information [14]. Despite these threats and weaknesses, it is recommended that banks use a private blockchain to effectively combat the legalization of funds obtained illegally. First Interbank Information Network (ININ) payments made by Wall Street banking giant JPMorgan Chase two years ago to Quorum with Royal Bank of Canada and ANZ (Australia and New Zealand Banking Group) [47]. The main objectives of the IIN are to conduct interbank monetary operations, cross-border financial operations, transaction support during the contracts conclusion, collection and storage of data on signed agreements. It should be noted the undoubted advantages of using blockchain technology when conducting interbank transactions are the following: high speed of transfer (1:00, instead of three days), cheapness (2-3% of the transaction fee, instead of 5-30%), reliability. Money stored electronically is divided by [2, 46]: payment technology (a type of verification) classic (centralized) and distributed ledger technology (decentralized); accessibility (full or limited availability of use); identity (identified or anonymous). The very use of blockchain technology allows taking into account the peculiarities of the use of electronic money in transactions with a high degree of protection. According to studies by Accenture consulting company [43, 29], the use of blockchain in payment transactions will allow banks to save up to $ 12 billion a year. In particular, they can implement Lightning Network technology, use cryptocurrency with low fees, or develop a

payment system with free transactions. Banks can use different digital currencies (Bitcoin, Ripple, Ethereim, IOTA, Stellar) and create their blockchains when making transactions. The form of fiat money is publicly available, has the status of legal tender, is issued by the state [2, 15, 11]. The use of blockchain to counter the legalization of criminal proceeds obtained illegally can be applied in three main stages [16]: preventing the legalization of criminal proceeds through the system. It is implemented by changing the approach to client identification using blockchain; block transactions that have the risk of legalizing income illegally obtained; transaction monitoring uses intelligent transaction risk assessment algorithms. At the first stage, it is crucial to have a customer sign up and confirm the system. The user enters their identification information into the system on their own. For an individual, this could be the last name, first name, patronymic, date of birth, ID number, phone number, ID photo, fingerprint, and more. For the legal entity, this could be a registration number, location, data of the founders and responsible persons. Next, the verification and confirmation process should go through to make sure that this user is real. At this stage, both algorithms for checking this information on registries within the country and checks for the presence of a person in international blacklists such as the United Nations Security Council Consolidated List [44] work. At the second stage, transactions are blocked, subject to the rules defined by international and national regulators in the field of counteracting the legalization of funds obtained illegally. These rules relate primarily to the compliance of the operation with the declared scale of the user. Also, the countries of the transaction parties and recent transactions of the participants' data with the risk assessment that the funds simply transfer from one holder to another are important [34]. If these rules have been violated, the transaction is forbidden, and there is a record in the blockchain to reject the transaction, which will be valuable in the next step. The third stage is the most important in terms of efficiency in combating the legalization of income obtained illegally [25, 31]. It is based on the intellectual analysis of transactions made by the user. So, we propose an economic and mathematical model of a neural network for assessing the risk of using a bank in the legalization of illegal income [27]:

$$f(x) = F\left(\sum_{i_N} w_{i_N j_N N} \dots \sum_{i_2} w_{i_2 j_2 2}\, F\left(\sum_{i_1} w_{i_1 j_1 1} x_{i_1 j_1 1} - \theta_{j_1 1}\right) - \theta_{j_2 2} \dots - \theta_{j_N N}\right) \quad (1)$$

where $F\left(\sum_{i_1} w_{i_1 j_1 1} x_{i_1 j_1 1} - \theta_{j_1 1}\right)$ – sphere 1; $\sum_{i_2} w_{i_2 j_2 2}\, F\left(\sum_{i_1} w_{i_1 j_1 1} x_{i_1 j_1 1} - \theta_{j_1 1}\right) - \theta_{j_2 2}$ – sphere 2; $F\left(\sum_{i_N} w_{i_N j_N N} \dots \sum_{i_2} w_{i_2 j_2 2}\, F\left(\sum_{i_1} w_{i_1 j_1 1} x_{i_1 j_1 1} - \theta_{j_1 1}\right) - \theta_{j_2 2} \dots - \theta_{j_N N}\right)$ – sphere N; i – the entry number; j – the number of the neuron in the layer; $x_{i_1 j_1 1}$ – the i-th input signal of the j-th neuron in the layer 1; $w_{i_N j_N N}$ – the weighting factor of the i-th input signal of the j-th neuron in the layer N; $\theta_{j_N N}$ – the threshold level of the j-th neuron in the layer N.

A detailed description of the model is given in work [27]. The Broyden – Fletcher – Goldfarb – Shanno (BFGS) algorithm is used to construct the MLP multilayer perceptron neural network. The methods of deep learning [21, 39] and machine learning for anti-money laundering [12] are recommended as alternative methods of intellectual analysis. As one of the features of blockchain is the prohibition of changing transaction metadata and retaining complete user information even if there is a change in the personal information about the system users, the data is not overwritten, but a new current record is added. That is, mainly the information on the system is eternal, and even if the attackers take possession of part of the blocks, the information will be stored on other blocks. This feature is handy because it forms the complete basis for intellectual analysis.

This analysis can be aimed both at analyzing the transactions frequency and the conformity of activities and at determining the adequacy of calculations between legal entities by their areas of business. Monitoring algorithms may include the analysis of the amounts of transactions performed for compliance with the financial condition, the purpose of the transaction, the frequency of previous transactions failure, the frequency of personal data change, changes in the transactions geography (e.g. based on IP). This list cannot be considered exhaustive. The analyzed data set is anonymous, meaning only user IDs are available, which is a manifestation of user pseudonymity. The result of the analysis will be evaluated by the degree of user risk, the data of which should be transmitted to the appropriate authority for investigation [31]. The approximate algorithm of the system operation is shown in Figure 3. The algorithm in Figure 1 begins with the identification of the user who wants the transaction. Additional information on Blacklists is used for identification. Then, if the user in the Blacklist, he is recorded in the Alert message block and the transaction is blocked, if not, then the transaction is checked for compliance with the rules defined by the regulators and the bank. If the transaction complies with the rules, the algorithm begins an intellectual assessment of the operation riskiness, if the transaction is against the rules, then it is written into the Alert message block and the transaction blocks. If the transaction is risky in terms of money laundering, an Alert message appears and transaction blocks. Otherwise, confirmation and operation are needed. Information about the transaction is record ed in the block as Previous transactions.

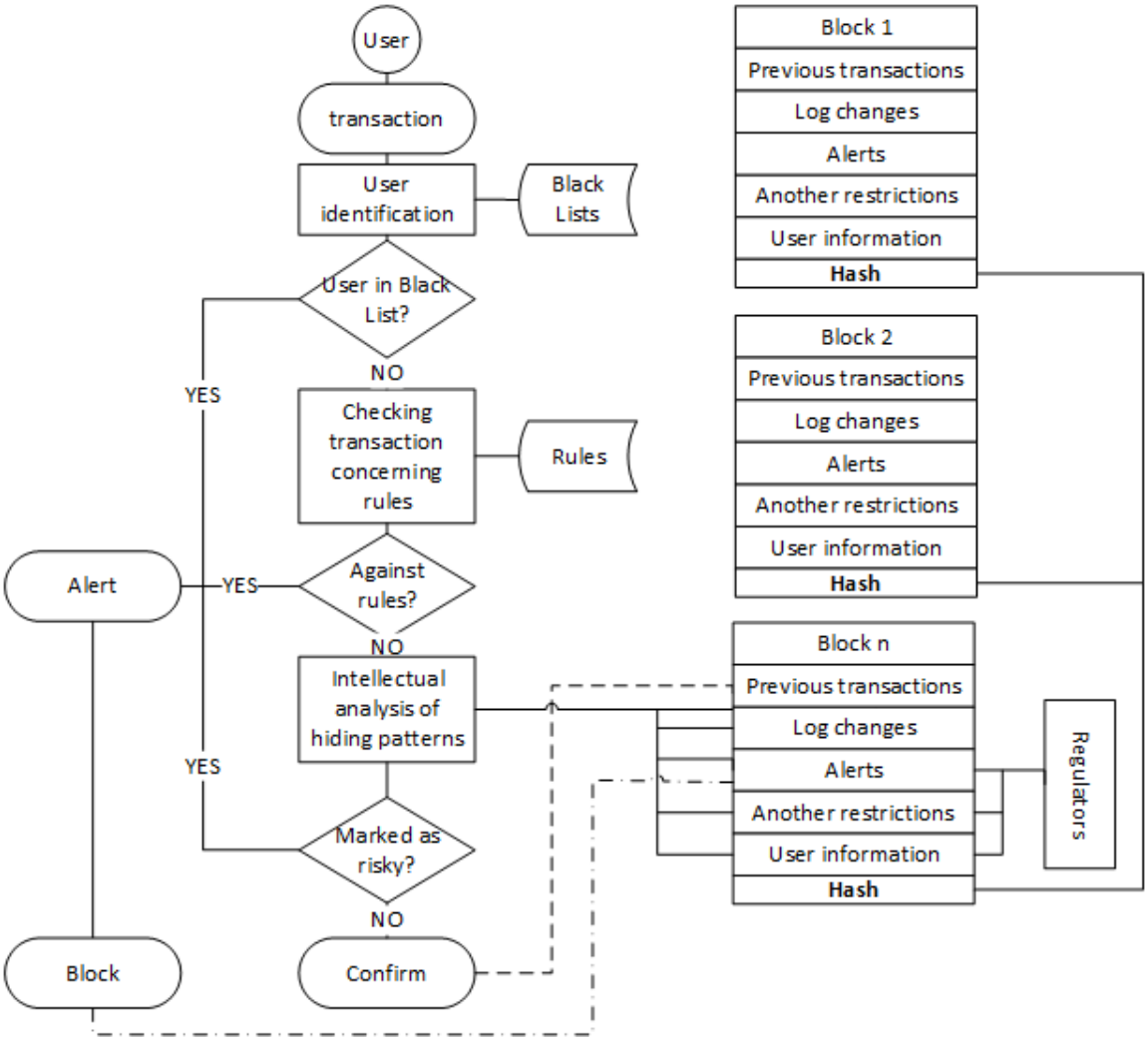

Figure 3: Algorithm of anti-money laundering system in bank on the blockchain basis (Source: developed by authors)

The blockchain includes information about the transaction history, the history of user state changes, previous alarm messages and transaction locks and other restrictions. Based on this data, transactional analysis is carried out and is shown in the diagram. All blocks in the system are connected by a hash function that replicates transaction information to all blocks. Also, regulators have limited access to the blockchain, where necessary and in the presence of alarms, where they can obtain and verify transactions and users.

4. CONCLUSIONS

The issue of money laundering is significant as it is closely linked to the shadow economy. In the process of money laundering, banks have an essential role to play, as it is these financial institutions that carry out more than 95% of all asset operations. It was defined that the use of blockchain technology in the bank can significantly increase the system effectiveness to counteract the legalization of income illegally obtained. The bank blockchain in the bank section is private, there will be no glut of information on the network, and the system will be able to maintain sufficient speed. But to regulate the legal field of blockchain use, it is necessary to make considerable efforts in the whole world community. In the article, the approach of system-based blockchain technology for anti-money laundering is not exhaustive. Technology is evolving day by day, and economic agents need to take advantage of it to increase their efficiency.

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MARKETING AND MANAGEMENT STRATEGIES FOR ENHANCING GREEN COMPETITIVENESS

Eldar Khanlarov
Azerbaijan State University of Economics (UNEC)
Baku, Istiqlaliyyat str., 6, AZ1001, Azerbaijan
Khanlarov.eldar@gmail.com

Olena Chygryn
Sumy State University
Sumy, Rimsky-Korsakov str., 2, 40007, Ukraine
o.chygryn@econ.sumdu.edu.ua

Oleksii Lyulyov
Sumy State University
Sumy, Rimsky-Korsakov str., 2, 40007, Ukraine
alex_lyulev@econ.sumdu.edu.ua

ABSTRACT

The article deals with green competitiveness advantages for companies. The green competitive development is considered to be an essential condition to provide a high level of sustainable social and economic development. The authors systematized scientific investigation of the key determinants of the green competitiveness according to the marketing, technological, innovative, communicative, stakeholders, qualitative, level, fiscal and ethic approaches. The primary purpose of the study is to analyse the preconditions for promotion the green competitiveness of enterprises and analyse the influence of the using marketing tools (ensuring the proper quality (environmental) of green goods and services, differentiation of pricing policy, creation of green commercial networks and platforms, promotion of eco-goods and green activity, interaction with the consumers) on a company's descriptive variables (market segment (sales volumes), green image, efficiency of companies activity, products competitiveness). The object of study is the companies from the food industry, agriculture, machinery-producing industry and production of building materials. The quantitative study employed a sample of 110 companies, for testing each competitive advantage dimension against the established green marketing tools and company descriptive variables using the method of logistic regressions. The obtained results showed the level of integration mix marketing tools for supporting the green competitive advantages. The highest level of integration is in the food industry, the lowest level – in the production of building materials. Provided evaluation gives the opportunity to suggest the system of marketing instruments for forming and strengthening the company's green competitive advantages.

Keywords: *Green competitiveness, Green marketing tools, Companies' performance, Strategy*

1. INTRODUCTION

Current development trends are characterized by the inclination of many countries to promote green strategies that will meet the goals of sustainable development, address global environmental problems, shape the green competitiveness of regions and the business sector. At the same time, a significant number of countries that favour green strategies of operation, while trying to solve global and regional environmental problems, are making significant progress. Focusing on sustainable development and ensuring companies green competitiveness causes a number of challenges, which include the following features: orientation to the rational use, protection and reproduction of natural resource potential; provision the resources and

production waste recycling; providing targeted green investment at different levels of the economy (for the national economy, for the regions, for individual companies and businesses); the necessity of using the different sources of financing eco-oriented activity of companies, the possibility of combining them in time and space, ensuring the implementation of differentiated investment objects of different forms and types; the need to take into account the features of natural ecosystems (assimilation potential), which may lose their original properties and the corresponding value under the influence of anthropogenic factors; the existence of differentiation in the forms of investment for enterprises of state, interstate, private, mixed forms of organization of economic activity; taking into account the specific natural properties of self-regulation and restoration of ecosystems with their individual components. It should be noted, that simultaneously with the economic and technological development, the fulfilment by countries the goals and objectives of the concept of sustainable development are spreading and scaling up the anthropogenic load on the environment on global and countries scale. Thus, it is relevant to study the theoretical and applied foundations of the formation of marketing and management strategies for promoting green competitiveness.

2. LITERATURE REVIEW

The modern tendencies in the implementation of sustainable development strategies analyzed by the domestic and foreign scientists [4, 7, 8, 11, 13, 16, 21-24, 27, 30]. They investigated the impacts of green economic instruments on indicators of national development. The paper [34] deals with the analysis of the green investment impact on the energy efficiency gap. The authors [37-39] considered that using the green economic instruments are the incentives for green entrepreneurship development. In works [35, 42, 43, 45] the authors demonstrate how green economic tools influence on countries economic indicators. They noted that there is a huge interconnection between economic, social, and environmental dimensions of sustainable development. Such investigation is based on the concept of the Environmental Kuznets Curve hypothesis, which describes the non-linear relationship between economic growth and environmental pollution. The authors [5] analyzed the main economic indicators which influenced on macroeconomic stability of countries. The authors in the papers [1, 6, 14, 18, 25, 26, 29, 31, 33, 44] recommend for companies seek ways of utilizing the competitive strategies for improving the organizational performance and which lead to a sustained competitive advantage over competitors. The research [2] is examining the impact for assigning the percentage of investment grades on the company's market share. Besides, the scientists in the papers [3, 15, 17, 19, 20, 32, 46] justified the implementation the marketing strategies for increasing the company's performance. The scientists [36] analyzed the basic definitions and models of the communication process, which reflect the elements in the process of communication and types of effects of D. Lasswell's model. The articles [9, 10, 12, 40, 41, 47] are analyzing the green marketing strategies and instruments for supporting sustainable development. The aim of the paper is to analyze the preconditions for promotion the green competitiveness of enterprises and analyze the influence of the using green marketing tools on a company's descriptive variables. As global experience demonstrates, countries benefit from green functioning strategies to address global and regional environmental problems. The main success factors of green enterprise competitiveness are production and technological potential of companies, market factors that characterize the main competitors and consumers, structure of business entities and their involvement in value chain communications, eco-innovation management and marketing, company's environment policy. The key determinants of the green competitiveness are investigated in the frame of marketing, technological, innovative, communicative, stakeholders, qualitative, level, fiscal and ethic approaches. Researches about the using of green eco-policy tools [48-50] indicates the feasibility of using green marketing tools to shape and strengthen the green competitive advantages of businesses.

3. METHODS

Therefore, it is necessary to evaluate the impact of the individual components of the mix marketing to ensure the green competitive advantages. The object of study is the companies from the food industry, agriculture, machinery-producing industry, and production of building materials. The quantitative study employed a sample of 110 companies, for testing each competitive advantage dimension against the established green marketing tools and company descriptive variables using the method of logistic regressions. The following indicators were selected as the basic indicators for determining the green competitive advantages: growth of the market segment (sales volumes), formation (strengthening) of the green image, increase of efficiency (environmental) of activity, increasing the products competitiveness. So, the next five hypotheses were formulated:

- H1. The formation of a system of strategies for ensuring the appropriate quality (environmental) of green goods and services will ensure the growth of sales (growth of market share of the company), to shape and strengthen the green image of companies, to increase the efficiency of enterprises, to increase the competitiveness of products.
- H2. Differentiation of pricing policy in order to stimulate the transition to consumption of environmentally friendly goods and services will provide: increase in sales volumes (increase of market share of the company), form and strengthen the green image of companies, increase the efficiency of enterprises, ensure the increase of competitiveness of products.
- H3. Creation of green commercial networks and platforms will provide: increase of sales volumes (increase of the market share of the company), to form and strengthen the green image of the companies, to increase efficiency of activity of the enterprises, to provide increase of competitiveness of production.
- H4. Promotion of eco-goods and green activity will provide: increase of sales volumes (growth of the market share of the company), to form and strengthen the green image of the companies, to increase efficiency of activity of the enterprises, to provide increase of competitiveness of production.
- H5. Interaction with the consumers will provide increase of sales volumes (increase of the market share of the company), to form and strengthen the green image of the companies, to increase efficiency of activity of the enterprises, to provide increase of competitiveness of production.

The generalization of the hypotheses is represented on table 1.

Table 1: Hypotheses – mix marketing tools—green competitive advantages

	Mix marketing components	Green competitiveness indicators
Managerial strategies are integrating	ensuring the proper quality (environmental) of green goods and services for:	sales growth (market share growth) green image efficiency of the enterprise activity product competitiveness
	differentiation of pricing policy for:	
	creation of green commercial networks and platforms for:	
	promotion of eco-goods and green activity	
	interaction with the consumers for:	

(Source: created by the authors)

The research methodology included a two-stage approach. At first the qualitative investigation was provided through the using of interviews by managers and marketing experts. Subsequently, based on the findings, a questionnaire was formed to be used in a next quantitative study. The assessment of the measured competitive advantages was provided using the logit regressions. The proposed for expert's questionnaire was drafted using by dichotomic scales (0/1) to evaluation the providing of the four green competitive advantages. In the sample was included the companies from the food industry, agriculture, machinery-producing industry and production of building materials. After verification and scrutinizing the questionnaires, 110 valid responses were obtained.

4. RESULTS

For assessment the degree of integration of the marketing tools for strengthening the green competitive advantages was used the five-level approach, which includes such degrees of valuation: very high (5), high (4), neutral (3), low (2), very low (1). Data were collected from managers and marketing experts from the hugest companies of the food industry, agriculture, machinery-producing industry and production of building materials (table 2).

Table 2: Industry descriptive statistics

Industry	Frequency	Percent	Valid Percent	Cumulative Percent
Food industry	30	27,3	27,3	27,3
Agriculture production	30	27,3	27,3	54,6
Machinery industry	30	27,2	27,2	81,8
Production of building materials	20	18,2	18,2	100,0
	110	100	100	

(Source: calculated by the authors)

For estimation of the complexity and scale of using and implementing the mix marketing components into the company's activity was assessed the degree of their integration companies in the system of used marketing strategies (table 3).

Table 3: Integration the mix marketing components

	Ensuring the proper quality (environmental) of green goods and services	Differentiation of pricing policy	Creation of green commercial networks and platforms	Promotion of eco-goods and green activity	Interaction with the consumers
Valid	110	110	110	110	110
Missing	0	0	0	0	0
Median	3,0	3,0	2,0	2,0	2,0
Mode	3	3	2	2	2

(Source: calculated by the authors)

Considering the median and mode indicators (table 3), two marketing tools are neutral integrated (ensuring the proper quality (environmental) of green goods and services, differentiation of pricing policy). At the same time, the creation of green commercial networks and platforms (with a median value of 1,0, assigned to the very low level). Two marketing tools (promotion of eco-goods and green activity and interaction with the consumers), have a median value of 2,0 (low integration).

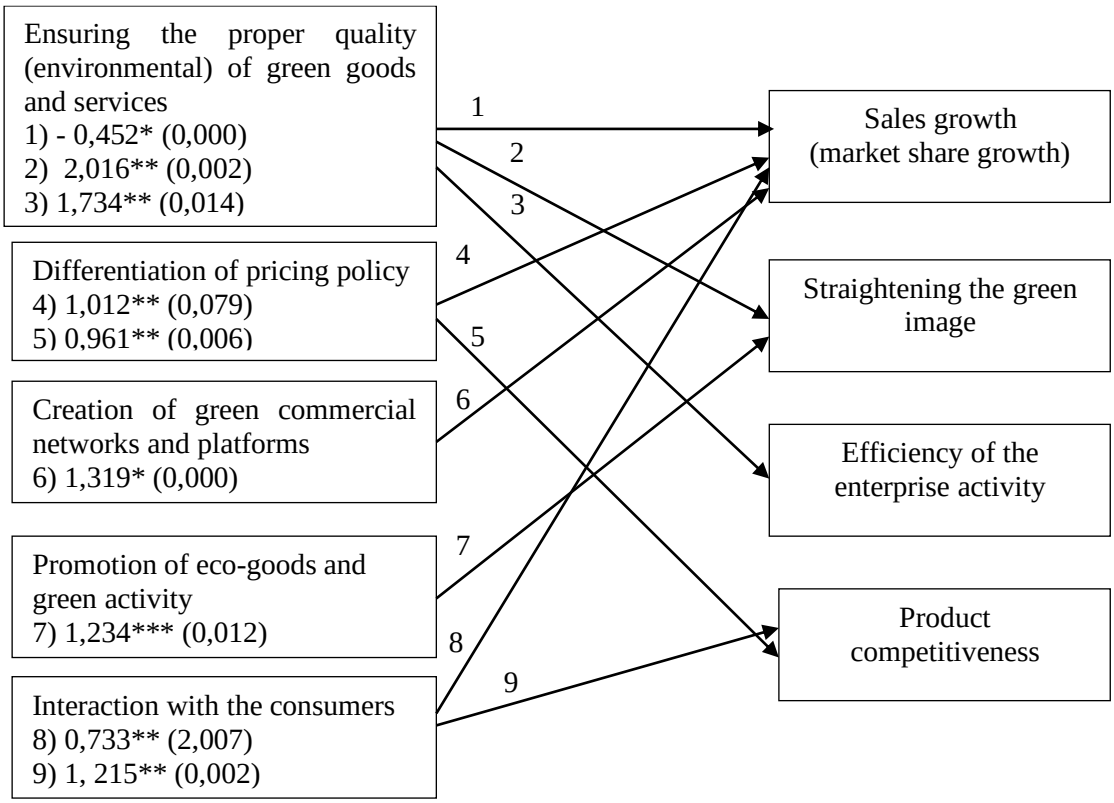
Overall, it can be concluded that these components of mix marketing tools are low integrated in companies' activity. Measuring the impact of the mix marketing components (based on their integration represented in figure 1) and the influence of the descriptive variables on each green competitive advantage, two logit regressions were formed. The results of the assessment (figure 1) told, that hypotheses H1–H5 were partially confirmed with the amendment that one of marketing tool (ensuring the quality of green goods and services) was found to have an impact on three competitive advantage (sales growth, straigthening the green image, efficiency of entreprise activity), another two tools (differentiation of pricing policy and interaction with the consumers) were found to impact on two dependent variables (sales growth, product competitiveness), another two marketing tools (creation of green commercial networks and platforms, promotion of eco-goods and green activity) were found to impact on one dependent variable separately (sales growth, straigthening the green image). It is necessary to account for the sectoral features in the process of assessment. The use of marketing tools by the food industry for the formation of green competitive advantages is fairly uniform and is determined by the medium and low degree of their implementation. In agriculture sector we divided the measuring process for the sub-sectors, where the three sub-groups of enterprises are conditional on the use of marketing tools to developing green competitiveness:

- companies (large agro holdings) that are not significantly interested in positioning themselves on the market as environmentally oriented
- agricultural producers who are somewhat interested in shaping the green image and creating green competitive advantages and are only partially ready to use marketing tools to shape and promote green competitiveness
- agro-producers that are independent in decision-making (they are not within the structure of large agricultural holdings and associations). They are interested in developing a green image and green competitiveness through the use of marketing tools.

In the machinery industry due to industry specificity, the products of machine-building enterprises directly cannot be characterized as "green" (environmentally friendly).
However, this does not preclude the use of certain evaluation criteria to determine, as a whole, the specific nature of environmentally-friendly activities and the level of environmental safety of the economic activities of mechanical engineering enterprises. Accordingly, a number of determinants will be characterized: environmental safety of the production process; the level of waste generation, the extent of recycling; using resource-saving technologies; energy and material intensity of the production process; development of green infrastructure of the enterprise; implementation of environmental management and audit systems; environmental standardization and certification; environmental culture and ethics.

Figure following on the next page

Figure 1: Relationships between variables



** - p<0,01; ** - p<0,05; *** - p<0,1.*
(Source: calculated by the authors)

Therefore, prioritization in assessing the feasibility of using marketing tools to shape the green competitive advantages of machine-building enterprises was conducted on the above-mentioned principles.

5. CONCLUSION

The obtained results showed the level of integration mix marketing tools for supporting the green competitive advantages. The highest level of integration is in the food industry, the lowest level - in the production of building materials. Provided evaluation gives the opportunity to suggest the system of marketing instruments for forming and strengthening the company's green competitive advantages. The such system has to include the next groups of marketing tools, connected with the basic categories.

1) Product. Formation a system of strategies for ensuring the appropriate quality (environmental characteristics) of green goods and services by: environmental standardization and certification; eco-labeling; product quality control; use of eco-friendly packaging; providing recycling; avoidance of greenwashing; formation of green brand and company image; branding of green products and services; information on the effects of green investment and prevented economic damage.
2) Price. Differentiation of pricing policies to stimulate the transition to consumption of environmentally friendly goods and services, tax rebates for eco-responsible companies, loyalty and compensation programs for green loans, obtaining additional economic, environmental and social effects from green competitive advantages.
3) Platform. Creation of commercial ecological networks, creation the specialized market platforms for green goods and services, crowdfunding platforms for support of eco-innovation, development of distribution networks (eco shops, eco services networks) and more.

4) Promotion. Promotion of green products and services and promotion of eco-activity, green business and entrepreneurship, creation of the green and social advertising, application of traditional and modern marketing communication tools.
5) Consumer. Consumer interaction, segmentation of the green goods and services market, identification and specification of the target audience, set of activities to prepare the target audience for the perception of the green innovation.

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DEVELOPMENT OF METHODOLOGY AS PART OF APPLIED TOOLS FOR STRATEGIC RESEARCH AND ASSESSMENT OF INSTITUTIONAL STABILITY OF THE NATIONAL SECURITY SYSTEM

Venelin Terziev
National Military University, Veliko Tarnovo, Bulgaria
University of Rousse, Rousse, Bulgaria
terziev@skmat.com

Mitko Stoykov
Rakovski National Defence College, Sofia, Bulgaria
mitkostoykov@hotmail.com

ABSTRACT
In order to support the updating and improving of national expertise, it is necessary to develop scientific and scientifically applied tools such as methodologies for expert evaluation of the sustainability of modern administrative units and their institutional capacities, as well as the need for internal interinstitutional and international cooperation to counteract of modern threats to national security. Scientific instruments have been selected for the conduct of the study to carry out quantitative and qualitative measurements, evaluations and analyses, the application of which in a specific sequence forms a specialized scientific methodology for the complementary of measurement, evaluation and analytical techniques, as well as for the enhancement of representativeness and reliability of the obtained results.
Keywords: *National security system, Applied tools, Development, Strategic research, Business Game*

1. INTRODUCTION

In order to support the updating and improving of national expertise, it is necessary to develop scientific and scientifically applied tools such as methodologies for expert evaluation of the sustainability of modern administrative units and their institutional capacities, as well as the need for internal interinstitutional and international cooperation to counteract of modern threats to national security. The generalized goals of implementing such an approach are: expert assessment of institutional sustainability through the state of institutions' capabilities to counter modern threats; the need to increase institutional sustainability by improving and building new capabilities in coordinated interagency and international interaction and integration; summarizing the results and empirical research using the developed toolkit and synthesizing proposals to improve strategic regulation and build the capabilities of security institutions to counter future risks and threats.

2. METHODOLOGY FOR THE STUDY OF INSTITUTIONAL SUSTAINABILITY FOR COUNTERING CONTEMPORARY THREATS

During development of the methodology, it is important to consider the possibility of conducting research with systematic scientific methodologies at the first stage - scientific-expert evaluation by the Delphi method and the second stage - Management simulation game (Business Game), with a final summary of the results and development of proposals. Main research objectives with implementation of the methodology of using the expert evaluation card and management simulation game are as follows:

- Assessment of the role of the main institutions of the national security system in ensuring the fulfillment of its basic functions (Table 1);

- Assessment of the currently available capabilities of institutions and organizations to realize the essential functions of the national security system to counter hybrid threats and their readiness to use them;
- Assessment of the current capability shortfall to fulfill the essential functions of the national security system for counteracting hybrid threats; Identification of potential hybrid threats and their main characteristics, probable areas for their occurrence, which may endanger the national interests of the Republic of Bulgaria;
- Determination of the need for capabilities to counteract hybrid threats of different nature and ways to create them; Identification of forms and methods of interinstitutional interaction in the construction and use of capabilities to counter hybrid threats.

The report of all the aforementioned research highlights in the development of the expert evaluation card is done by applying the Conceptual Analysis and Research Framework methodology, which allows semantic and functional alignment of different concepts in the common subject area. A thorough review of the entire legal framework of the national security system, i.e. laws, regulations, regulations, strategies and other strategic national and institutional laws which, in comparison with the nature and areas of manifestation of modern hybrid threats to national security, contributed to reporting and matching the conceptual basis of these standards and, as a result, synthesizing and arranging the basic functions of any modern national security system. In addition, the analysis of the institutional obligations in the respective legal framework of each ministry or agency allows the systematization or determination of different levels of institutional responsibility for the implementation of the basic functions. Such an approach allows the division of institutions into several groups, in accordance with their role for the realization of the main functions of the state in the field of security. Considering the specialization of the institutions - defence, internal security, international affairs, infrastructure, crisis management and disaster response, economics, finance, etc., as well as the possibility of pre-structuring the potential target group of participating experts, in the expert evaluation card the institutions are divided into three groups - Ministry of Defence and the Bulgarian Army, Leading institutions in the national security system with a focus on internal security, Institutions with a contribution to the realization and the basic functions of the security system (Petrova, Petrov, 2020-c).

Table following on the next page

No.	List of the main functions of the national security system.
1.	Observation, detection, recognition, identification and analysis of the development of challenges, risks and threats to national security
2.	Investigation, sharing and provision of information and knowledge
3.	Horizon scanning, long-term forecasting, risk analysis and assessment, modeling and simulation of the development and manifestation of threats
4.	Surveillance, command, control and coordination system
5.	State border security, border control and migration
6.	Observation, control and defence of sea and air space, protection of sovereignty, independence and territorial integrity
7.	Implementation of international and coalition commitments for participation in NATO and European Union operations and missions
8.	Participation in UN and OSCE operations for crisis and conflict management and humanitarian aid
9.	Fight against terrorism, antiterrorism, counter-terrorism, management of the consequences of terrorist acts
10.	Fulfillment of allied and bilateral agreements commitments for participation in operations for crisis, disaster and emergency consequences management
11.	Public information, strategic communication, media and alert systems
12.	Information policy, security and defence of information systems and networks
13.	Public order protection, fight against organized crime, law enforcement, investigation and court
14.	Health care, quarantines, epidemic control, safety and disposal
15.	Protection of the population and critical infrastructure
16.	Politics, government and creating capacities of the national security system
17.	Economics, public finances, banks, stock exchanges
18.	Research, education, innovation, training, teaching
19.	Management of the natural disasters consequences, major industrial accidents and catastrophes
20.	Crisis and wartime planning, government reserve and logistics

Table 1: List of the main functions of the national security system
(Source: The list has been prepared after analysis of national legislation and regulations of the security sector institutions)

The table presents the main functions of national security, synthesized through review and analysis of the legal framework of the Republic of Bulgaria, limited to twenty, but including all the most important functions that the modern state should activate in defending the institutional stability and protection of the national security against modern hybrid threats (Georgiev, 2019-b).

2.1. Target group representing the institutions in the study

The research focuses on conducting an expert evaluation of the institutions' available and necessary capacities to fulfill the essential functions of the national security system. Taking into account the scope, objectives and tasks of the study, a total of 51 experts from 16 ministries, state agencies and organizations are included in the target group:

1. Ministry of Defense and the Bulgarian Army
   1.1. Defence Policy Directorate
   1.2. Operations and Preparation Directorate
   1.3. Strategic Planning Directorate

1.4. Communication and Information Systems Directorate
1.5. Information Security Directorate
1.6. Human Resources Management Directorate
1.7. Military Information Service
1.8. Military Police Service
1.9. 'Professor Tsvetan Lazarov' Defence Institute
1.10. Military Medical Academy
1.11. Vasil Levski National Military University
1.12. N. J. Vaptsarov Naval academy
1.13. Joint Forces Command
1.14. Land Forces Command
1.15. Air Force Command
1.16. Naval Forces Command
1.17. Command of 68th Special Forces Brigade

2. Defence Committee at the National Assembly
3. Ministry of Internal Affairs
4. Ministry of Foreign Affairs
5. Ministry of Energy
6. Ministry of Economics
7. Ministry of Finances
8. Ministry of Justice
9. Ministry of Transport, Information Technology and Communications
10. State Intelligence Agency
11. National Security State Agency
12. State Commission on Information Security
13. Municipality of Sofia
14. Ministry Of Education And Science
15. Ministry of Health
16. Center for studying, building and improving NATO`s crisis managent and disaster response capabilities

In order to use the specialization in participant expertise, the study target group is divided into three subgroups:

- The first one is to evaluate the role and capabilities of the Ministry of Defence and the Bulgarian Army in the implementation of the main functions of the national security system;
- The second one is to evaluate the role and contribution of ministries and organizations, which are legally assigned a key role and contribution to the fulfillment of the functions of the national security system;
- The third one is to assess the role of the contribution of other ministries and organizations in the implementation of the main functions of the national security system.

The first subgroup included 33 experts in the field of defence and national security, representatives of directorates, staffs, services, military educational establishments and centers of the Ministry of Defence and the Bulgarian Army, including experts from the Defence Committee at the National Assembly (presented as the number of participants in the Ministry of Defence and the Bulgarian Army in Table 2).

Table following on the next page

No.	Ministry of Defence and the Bulgarian Army	Number of participants
1.	Defence Policy Directorate	1
2.	Strategic Planning Directorate	2
3.	Communication and Information Systems Directorate	2
4.	Information Security Directorate	1
5.	Military Information Service	1
6.	Military Police Service	1
7.	Military Medical Academy	1
8.	Vasil Levski National Military University	1
9.	N. J. Vaptsarov Naval academy	1
11.	Joint Forces Command	1
12.	Land Forces Command	3
13.	Air Force Command	1
14.	Naval Forces Command	1
15.	68th Special Forces Brigade	2
16.	Georgi Rakovski Military Academy	10
17.	Defence Committee at the National Assembly	1
18.	Center for studying, building and improving NATO`s crisis managent and disaster response capabilities	3
Total number of participants in the first subgroup:		33

Table 2: Number of experts from directorates, staffs, services, military educational establishments and centers of the Ministry of Defence and the Bulgarian Army

The second group included 7 national security experts from ministries, agencies and government organizations with a statutory leading role and a significant contribution to the fulfillment of the main functions of the national security system (represented by the number of participants from the relevant ministries and agencies in the Table 3).

No.	Institutions and organizations with a leading role in the implementation of the main functions of the national security system	Number of participants
1.	Ministry of Internal Affairs	1
2.	Ministry of Foreign Affairs	1
3.	Ministry of Justice	1
4.	National Security State Agency	2
5.	State Commission on Information Security	2
Total number of participants in the second subgroup:		**7**

Table 3: Number of national security experts from ministries, agencies and government organizations with a leading role and a significant contribution to the fulfillment of the main functions of the national security system

The third group included 11 experts from other ministries and organizations contributing to the realization of the main functions of the national security system (represented as the number of participants from the respective ministries and agencies in Table 4).

Table following on the next page

No.	Institutions and organizations that contribute to the implementation of the main functions of the national security system	Number of participants
1.	Ministry of Energy	2
2.	Ministry of Economics	1
3.	Ministry Of Education And Science	1
4.	Ministry of Health	2
5.	Bulgarian National Bank	2
6.	Executive Agency Electronic Communications Networks and Information Systems	1
7.	State Agency for Refugees	1
8.	Sofia municipality	1
Total number of participants in the third subgroup:		**11**

Table 4: Experts from ministries and organizations who contribute to the implementation of the main functions of the national security system

The initial composition of the MoD and BA in the target group of the study (51 experts), who participated directly in the first stage of the completion of the Expert Evaluation Card and the second stage, the Management Simulation Game, during the first stage (completion of the Expert Evaluation Card) in order to increase the representativeness of the obtained results, was adjusted by 20 students in the "Strategic Course" of the National Security and Defence Faculty at the Georgi Rakovski Military Academy and by 7 experts from the Center for studying, building and improving NATO`s crisis managent and disaster response capabilities. Preliminary analysis of the results of the expert evaluation based on the summarized empirical data showed that no significant differences were obtained in the expert group of the Ministry of Defence and the Bulgarian Army when comparing and summarizing the evaluations of the majority of the investigated issues, regardless of whether the experts filled in the expert evaluation card on the day of the study or were part of the experts from the groups further included in the study and filled in the expert evaluation card later (Nichev, 2009). After clarification of the representatives of the MoD and BA in the target study group, the total number of experts involved in completing the expert evaluation card was 78. Therefore, the summarized statistical results will also cover the participation of this additional group of experts, and subsequently the analyses and conclusions will be drawn on the data obtained from the overall systematization of the results of all 60 representatives of the MoD and BA. Following the submitted clarification, the final composition of the target group that participated in the study by completing the expert evaluation card according to the representativeness of the individual institutions is allocated as follows: 60 experts from the Ministry of Defence and the Bulgarian Army; 7 experts from institutions and state organizations with a leading role and significant contribution to the fulfillment of the main functions of the national security system and 11 experts from institutions with a contribution to the implementation of the main functions of the national security system. The distribution of the experts of the research target group into three different subgroups with representatives of leading institutions in the defence and security sector was made in order to select and group the composition of the subgroups and participants in strict accordance with the expertise available to ensure complementarity and comprehensive coverage of the assessed institutional roles and capabilities for the implementation of the main functions of the national security system. Such an approach to structuring the target group of the study (in strict accordance with the existing institutional expertise in the field of defence and national security) allowed a wide and representative scope on the one hand, and the use of the expertise and detailed knowledge of the basic institutional and national capabilities and responsibilities on the other hand.

The consolidation approach is also applied to enhance the guarantees of the consistency and credibility of the results of the expert review, as well as to increase the likelihood of validity of the main results and conclusions, as well as to support the validity of the proposals made in scientific research (Petrov, Georgiev, 2019c).

2.2. Methodology for conducting the first stage of the study

Scientific instruments have been selected for the conduct of the study to carry out quantitative and qualitative measurements, evaluations and analyses, the application of which in a specific sequence forms a specialized scientific methodology for the complementary of measurement, evaluation and analytical techniques, as well as for the enhancement of representativeness and reliability of the obtained results. The first part of the study is divided into two stages. The first one is organized and conducted in the form of a scientific and expert evaluation using the Expert Evaluation Card and the application of the Delphi method and the second is in the form of a Business Management Game. The summarized assessments and analyses of the first part are grouped as the results of the first stage. The results of the study were presented in an international conference format and a discussion on the role and opportunities for interinstitutional and international cooperation in building and using capabilities to counter hybrid threats. The first stage of the study, expert assessment of the institutional role, capabilities and needs of interinstitutional and international co-operation for fighting hybrid threats, was organized and conducted in two separate phases: completion of the expert evaluation card using the Delphi method and conducting a management simulation game in the form of a discussion between the experts involved in the study. The specifics of the organization and the conduct of the two phases in the first stage of the study, as well as the use of different forms of processing and analysis of the results, necessitated the application of different methods for processing, summarizing and comparing the obtained results. The specialized processing of the obtained empirical data obtained from the completion of the Expert evaluation card necessitated the application of appropriate statistical methods for their processing and subsequent qualitative analysis of the results, the reflected opinions of the experts in assessing the ability to realize each of the main functions of the national security system. The processing of the information and the results of the discussions between the experts in conducting the Business Game was carried out by applying methods for qualitative evaluation, grouping and analysis of the proposals. Therefore, the results of each stage of the first part of the study are grouped separately, and afterwards they are integrated into the main conclusions and proposals of the research report (Terziev, Madanski, Georgiev, 2017-a).

2.3. Applied Scientific Research Methodology Using the Expert evaluation card

The methodology of research and content of the expert evaluation card is an original development of Doctor of Science Mitko Stoykov. The main objective of the developed research and analytical methodology is to enable the use of highly specialized institutional expertise to assess the institutional role and adequacy of available capacities of ministries, agencies, organizations, and the need to build new capabilities, in the context of the concrete contribution of each institution to the realization of the main functions of the national security system. After the requirement to assess the institutional role and available capabilities were specified during the briefing, it was further specified for the MoD and BA experts group that, regardless of the participants' affiliation to different MoD and BA structures, they would evaluate the generalized role and capabilities of the Ministry of Defence and the Bulgarian Army. While developing the expert evaluation card, the operational functionality of the national security system is represented through the ability to implement 20 key functions (Table 1) identified through analysis of national and relevant institutional legal documents. The ability to perform each major function is realized through a leading, secondary and contributing

institutional role for the institutions. The likelihood of the implementation of the role of each institution is accounted for by assessing the availability and relevance of institutional capabilities (Given the widespread entry and use of capabilities from the defence planning system, we will provide some clarifications on the nature and core imperatives, basic elements of defence capabilities/security. The capability is defined as an ability to achieve the desired effect under specific standards and conditions through a combination of means and ways to complete a set of tasks. Capability imperatives (elements of the structure) include Doctrine, Organization, Training, Material (equipment), Leadership and Education, Personnel, Facilities and Interoperability - DOTMLPFI)) - own and/or other participating institutions (group of institutions), as well as through the assessment of the need to improve the current or to create the lacking capabilities and the assessment of the impact of the capabilities on the operability of the institution itself. Each of the assessed groups of capabilities for the implementation of the core functions is divided into a range of 5 to 7 key areas. The assessment of the institutional role (primary/leading, secondary or supporting, as well as non-participating) of each institution for the implementation of each of the main functions of the national security system is measured on a three-level scale with options "basic", "auxiliary", "lacking". For experts who feel that they do not know enough about the contribution of their organization or have doubts about the institutional contribution to the implementation of any of the functions, the opportunity to indicate the answer "I cannot judge" is added to the methodology. The assessment of the degree of completion of the necessary capabilities of the respective institution or organization for the successful performance of each function is performed on a five-point scale allowing the options:

- "complete" (when the necessary capabilities are completely built and allow smooth implementation of the function, including the presence of sufficient technological and operational reserves for future use);
- "rather complete" (when the estimated capabilities are built to a large extent and allow complete function);
- "average" (when the core capabilities elements are built up and allow the institution's core tasks to be accomplished without limitations (to an average degree);
- "negligible" (capabilities are minor and allow for implementation of a function with some constraints);
- "lacking" (capabilities that are not built and are lacking, meaning that the relevant institution does not contribute to the realization of the function).

Those experts, who do not have sufficient knowledge of their organization's capabilities or have doubts about their use to perform any of the functions, can again choose the answer 'I cannot judge'. Identical 5-point scales were used to assess the impact of the available groups of capabilities on the implementation of each of the main functions of the national security system, as well as to assess the need to build new ones or to improve the available capabilities for performing the relevant function:

- "extremely high" - when the presence of the assessed group of capabilities exerts an extremely high influence on the performance of a given core function, or accordingly there is an extremely high need for the assessed group of capabilities to realize institutional roles and contribute to performance of the specific core function of the national security system;
- "high" - when the presence of the assessed group of capabilities has a high degree of influence on the performance of a given main function or there is a high need for the assessed group of capabilities to make an institutional contribution to the performance of a particular main function of the national security system;
- "average" - when the presence of the assessed group of capabilities has an average influence on the performance of a given main function or there is an average need for the assessed

group of capabilities to make an institutional contribution to the performance of a particular main function of the national security system;

- “negligible” - when the presence of the assessed group of capabilities has low or negligible influence on the performance of a given main function or there is a negligible need for the assessed group of capabilities to make an institutional contribution to the performance of a particular main function of the national security system;
- “lacking” - when the presence of the respective group of capabilities does not affect the performance of the main function or, accordingly, there is no need to build the given group of capabilities.

Those experts who lack sufficient knowledge or competence or have doubts about assessing the impact and the need for a given group of capabilities to make an institutional contribution to one of the main functions are also given the option for evaluation "I cannot say". Following the assessment of each group of capabilities, a personal comment space is left on the expert evaluation card which allows the experts to provide further arguments, clarifications, comments on the measured availability, impact or need to build the respective groups of capabilities in the institution they represent or organization. The expert evaluation card finishes with a table with summarized assessment of the institutional availability of capabilities to perform the functions of the national security system. In this table, the measurement of institutional capabilities is done through the evaluation of 8 (eight) imperatives or constituents of capabilities:

1. Laws, regulations, strategies, doctrines, concepts, regulations, programs and plans;
2. Systems, structures, organizations;
3. Trainings, workshops and teaching;
4. Materials and equipment;
5. Management, command and control;
6. Education personnel and training;
7. Critical infrastructure, infrastructure;
8. Cooperation, collaboration and interoperability.

The assessment of the imperatives or elements of the structure of capabilities is also done through the already presented 5-point scale:

- rating “complete” - when the assessed items or capability imperatives are completely formed;
- rating “rather complete” - when the assessed elements of institutional capabilities are rather complete or are in a high degree of their formation;
- rating “average” - when the elements of institutional capabilities are rated at average degree of their formation;
- rating “negligible” - when the capabilities elements are underdeveloped or negligible;
- rating “lacking” - when the evaluated capabilities elements are not formed or lacking.

Once again, the measurement scale provides the option “I cannot say” in case of insufficient knowledge or doubts about the extent to which the assessed capabilities imperatives are formed. The survey procedure is intended to ensure the anonymity of participants. It is only mandatory to take into account the institutional identification of experts on the expert evaluation card, ie. marking their affiliation with any of the participating institutions or organizations. Statistical methods have been used in the scientific research for processing and empirical analysis of the results obtained from the completion of the expert evaluation card:

- analysis ofaverage values - to present a score based on an assessment of institutions or of the respective capability groups;

- analysis of the standard deviation from the average value - to reflect the convergence or diversity (variation) of the results obtained from the assessment of identical roles or capability groups.

Mann-Whitney and Kruskal-Wallis nonparametric methods (nonparametric methods were applied in the case of deviations from the normal distribution of the estimated parameters of the groups of capabilities. They were used to prove or disprove the statistical significance of the differences in scores between the average values of the institutional capability groups assessed (Terziev, Georgiev, 2017b).

3. CONCLUSION

The methodology developed for assessing the role and capabilities of counteracting hybrid threats to the institutions of the national security system allows: Definition of potential hybrid threats, whose manifestation may endanger the national interests and the national security of the Republic of Bulgaria; Identification of the areas of available institutional capabilities; Identification of the deficits of institutional capabilities; Determination of the need for institutional capabilities to respond to hybrid threats and the opportunities for their creation; Identification of forms of interinstitutional interaction for the creation and use of capabilities to counter hybrid threats. The main efforts in developing such an intellectual product as evaluation methodology are targeted at: identification of the main functions of the national security system and the role of institutions in their implementation; identification of the areas of available capabilities of institutions and organizations of the national security system to counter hybrid threats and their readiness to use them; identification of the deficit of the ability to counteract hybrid threats; identification of potential hybrid threats, the manifestation of which could endanger the national interests of the Republic of Bulgaria; identification of the need for the necessary capabilities to respond to hybrid threats and the ways to build them; identification of forms of interinstitutional interaction in building and using capabilities to counter hybrid threats.

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DIGITALIZATION OF THE BANKING ENVIRONMENT: FORMATION OF EFFECTIVE BANK ECOSYSTEMS

Fahri Mourshoudli
Azerbaijan State University of Economics (UNEC)
6, Istiqlaliyyat str., Baku, AZ1001, Azerbaijan
fahri_murshudli@yahoo.com

Natalya Bykanova
Belgorod National Research University
85, Pobedy St., Belgorod, 308015, Russia
bykanova@bsu.edu.ru

Denis Evdokimov
Belgorod National Research University
85, Pobedy St., Belgorod, 308015, Russia
971454@bsu.edu.ru

ABSTRACT

Digital technologies adoption in all spheres of life has already reached a certain level and continues to grow, especially in the banking segment. The processes of the banking business transformation are inextricably linked with automation, introduction of the latest financial technologies and technical means to market new products and services. Therefore, the main direction of the banking sector development is the use of effective remote service technologies. These technologies provide an opportunity for customers to carry out banking operations through remote access using various means of telecommunication devices. One of the important trends in modern remote banking is the development of own ecosystems by banks, which help to differentiate businesses, strengthen the position of banks in the financial products and services market, increase customer loyalty and customer base, as well as generate additional income. The ecosystem is a combination of products and services from different areas, united around a single technological platform that is able to satisfy all the needs of customers in one window. It is for this reason that the development of ecosystems allows banks to successfully exist, develop in the conditions of increasing competition, and occupy new niches in the financial services market. The article considers the place and need for the development of modern remote banking services, analyzes the main segments of digital banking for retail and corporate clients in a transformation of the banking sector. Particular attention is paid to identifying promising areas for the remote banking service environment development based on the ecosystem approach. Creating their own ecosystems is a priority for large banks amid growing competition in the digital banking market. In conclusion, measures for banks to form an effective business model that will facilitate the transition to ecosystems are proposed.

Keywords: *Banking ecosystem, Remote banking services, Commercial banks, Financial technology, Digital economy*

1. INTRODUCTION

Current trends in the development of the global and national financial systems are associated with the increasing digitization of its particular segments and spheres (Tapscott, 2016; Nicoletti, 2017; PwC, 2017; Scardovi, 2017; Tiberius, Rasche, 2017; Beaumont, 2019). The banking sector is one of the most mobile and innovative business areas. Remote maintenance as well as modern financial technologies not only strengthen the competitive position of the bank in the market, but also help to achieve the necessary level of security of the banking business, both

for the credit organization and its clients (Skinner, 2014; Scardovi, 2016; Ernst & Young, 2017, 2018; Nicoletti, 2018; King, 2018; Bilan et al., 2019; Tanda, Schena, 2019). The Business Insider study notes that the modern generation is characterized by the active use of Internet technologies and is interested in obtaining services from credit organizations without physical presence in the bank's office. For example, less than 40 per cent do not visit banks, about 26 per cent visit a branch at least once a month, and another 10 per cent visit offices approximately once a month or twice a month, only 6 per cent visit branches on a weekly basis (Heggestuen, 2015). Modern banks must therefore take into account the preferences of a modern customer and actively develop a remote service channel. It is obvious that the main advantage of remote banking is the creation of comfortable conditions for consumers of banking services. Currently, they can get almost the whole range of banking services through remote access without leaving their homes.

2. DISCUSSION

Against the backdrop of the active digitalization of all business processes, it is important to provide effective customer service using traditional sales offices and contact centers, official sites and marketplaces, mobile applications, and social media accounts; terminals, interactive kiosks, ATMs; mobile or virtual offices, etc. According to expert estimates, Russia ranks 5th in the level of banking digitization in the EMEA16 region and ranks 1st in Europe in the distribution of mobile payments. On several other indicators, the country is approaching the European Union. Among the traditional banks most prepared for the digitization and integration of financial technologies are Tinkoff, Sberbank, Alfa-Bank. Let us present the position of the largest Russian banks in the context of the development of digital banking in Table 1.

№	Bank	The Faster Payments System (FPS) of Bank of Russia	Self-employment services	Online Accounting	Legal entity account opening online
1.	Tinkoff	✓		✓	✓
2.	Sberbank		✓	✓	✓
3.	Alfa-bank	✓	✓	✓	✓
4.	Raiffeisenbank	✓			✓
5.	Ak Bars	✓	✓	✓	✓
6.	Rosbank	✓			
7.	VTB	✓			
8.	Russian Standard Bank				✓
9.	Uralsib Bank				✓

Table 1: The largest banks positions in the development of digital banking in Russia (Source: KPMG, 2019)

According to the data of Table 1, it can be stated that Alfa-Bank to a greater extent has all the necessary services, participates in the FPS of the Bank of Russia, realizes online accounting for its clients, and performs opening of accounts of legal entities online. Sberbank became a member of the FPS only on March 31, 2020 and while the functionality is being piloted on a limited number of customers. Raiffeisenbank's digital strategy now focuses on two key areas: digitization of manual labor, and processes and creation of new products. In 2018, the organization actively developed mobile banking and chats as priority channels for interaction with clients. From our point of view, it is today's leaders in the technological transformation of banking business that will change the way banking services are provided and will compete in the market in the next two to three years. However, it is possible for banks to gain a certain market niche through the development of their own digital development programs, the use of

which will increase the operational efficiency of banks and reduce their costs. The main financial technologies used by Russian commercial banks are presented in Fig.1.

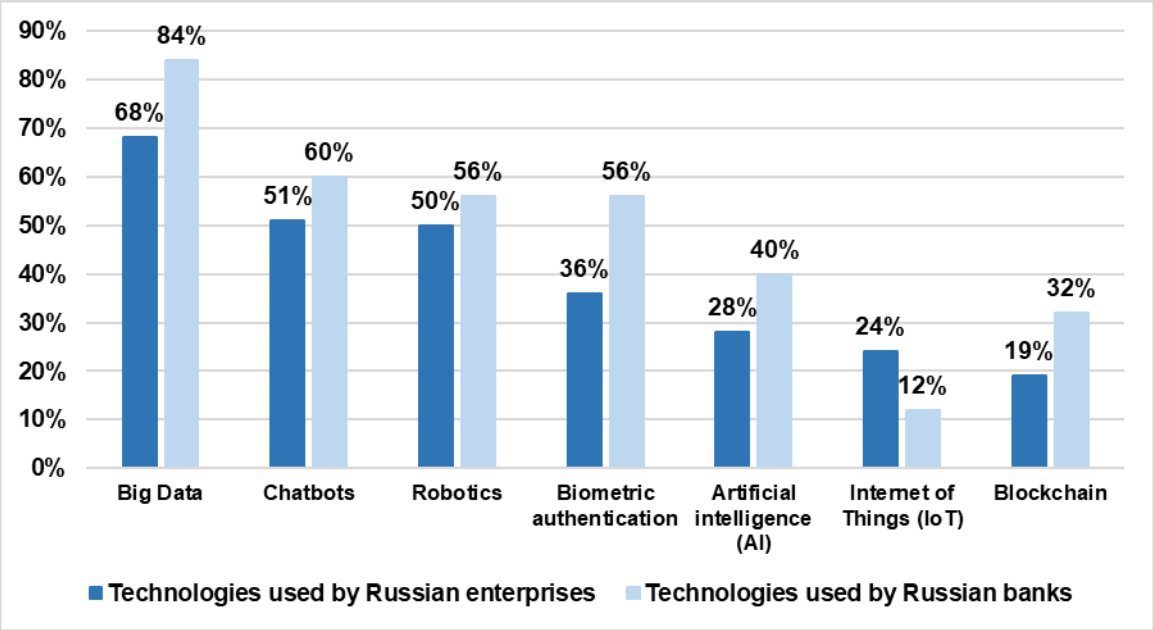

Figure 1: The level of financial technologies used by Russian commercial banks (Source: KPMG, 2019)

The main areas of interest for banks are Artificial Intelligence (AI), Big Data, robotics, the creation of chat bots and biometric identification and authentication (KPMG, 2019). The reasons for the increasing popularity of cloud technologies are the high capacity of their application and the savings in both maintenance and personnel, as well as infrastructure. Biometric technologies are based on human physiological characteristics and are used in Russia to personalize data and further identify customers in order to increase security, reduce fraud and simplify personal data entry. For example, thus far some Russian banks have been introducing technologies based on photos of customers, fingerprints, iris of eyes and even the voice of the client (Vaganova et al., 2019). Strengthening the role of analysis and in-depth work with large amounts of data is associated with the need to introduce Big Data technology. Using this technology, it is possible to increase the speed of acquisition and processing of large data sets, the need for their safe storage, the availability of reliability in operational and analytical repositories. Another equally promising segment of financial technology development in the banking sector is the introduction of robotic technological processes and artificial intelligence (AI). The robotization of typical banking processes already yields significant results for credit organization businesses, freeing up to 80 per cent of the human resources previously devoted to manual labor. Artificial intelligence is implemented in various areas of business processes and generates additional information that an employee can use for decision-making. In this way, banks reduce transaction costs, provide 24/7 customer service, and avoid many human-induced errors in the processing of typical requests. For example, Sberbank implements the AI-first concept, embedding artificial intelligence in all its processes. Thanks to the use of AI, the time for issuing loans to corporate clients in 2018 was reduced to 7 minutes. Due to the processes robotization and the reduction of manual labor in 2018, the efficiency of the back office was increased by 25% routine operations in 53 bank processes are performed by robots (Sberbank, 2019). The development of electronic interaction in the Russian financial market is also promoted by the Bank of Russia, which initiates a large number of IT-projects. The largest projects in the financial sector are related to the initiatives of the Bank of Russia to create

intersectoral platforms: Unified Biometric System (EBS), Faster Payments System (FPS), Incident Response Platform (IRP), Marketplace. Despite the active development of the financial services market, these technologies cannot be realized without building an effective business model in the banking industry. The distinctive features of the sustainable banking business model are:

- a long-term vision of the bank's own business, ecological, social and institutional environment;
- stricter self-regulation, taking into account the requirements of national and international regulators and determining ways to develop them;
- avoiding speculative profits and ensuring long-term profitability through organic growth;
- using the best of the world practices to increase the competitiveness of the bank's business.

Figure 2 shows the main directions of the banking industry business model transformation, which involve the formation of a digital remote banking environment through the identification of promising banking segments, financial technologies that are necessary for their implementation, and financial services providers (Fig. 2). As a result of the application of such a business model, the bank will demonstrate: a balanced and steady growth of its performance, high positions in the ratings of Russian banks.

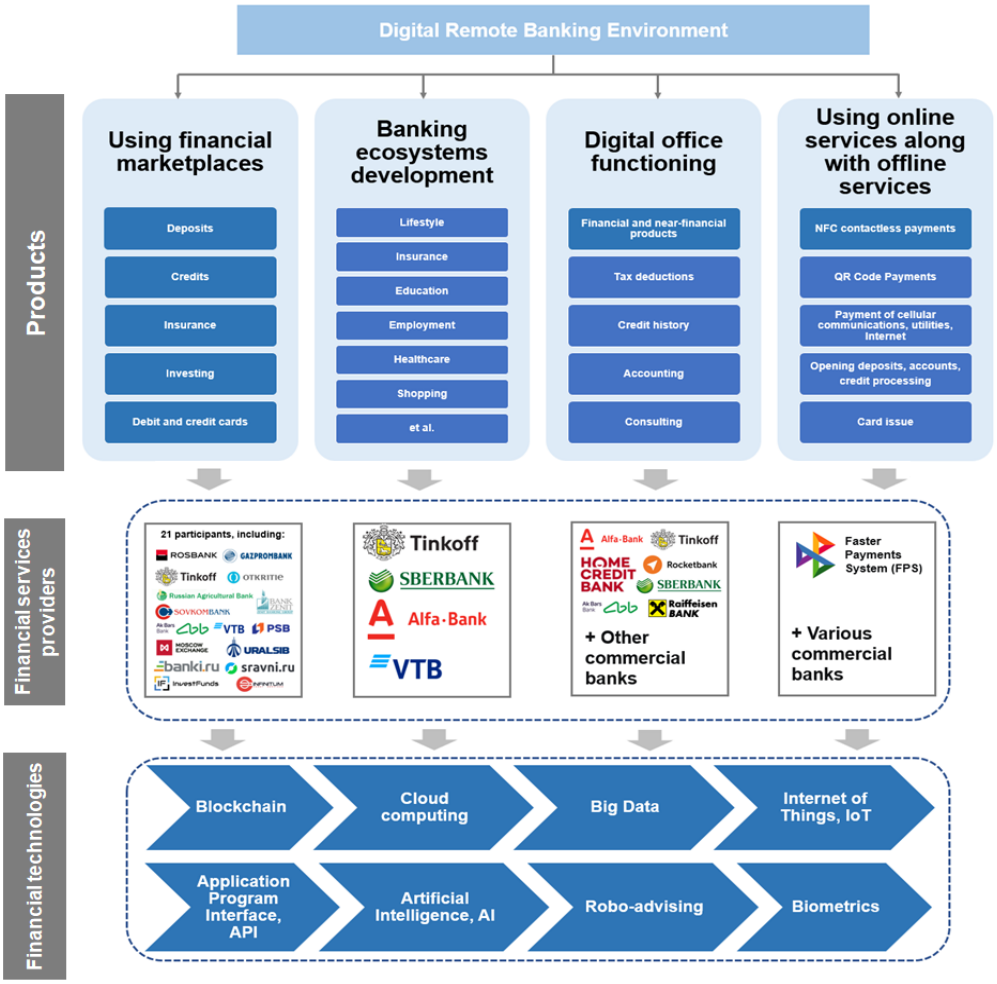

Figure 2: The main directions of the banking industry business model transformation in Russia
(Source: compiled by the authors)

The use of particular online services by consumers along with offline services implies contactless payments using NFC technology, QR-code payments, payment of cellular communications, utilities and Internet, opening deposits, accounts, credit processing, issuing cards, etc. The operation of digital offices includes a paperless office format, interactive sensor panels, tablet computers accessible to all visitors, contactless technologies and the possibility of videoconferencing with a bank specialist. Such offices should be functional and adapted to the global digitalization of the banking industry. Almost all banks presented in Fig. 2 have already implemented a chat where you can get quality advice and open some new banking products (usually accounts, deposits, debit cards). The first place in the ranking of digital offices is held by Alfa-Bank and Home Credit Bank (Markswebb, 2019, 4). Thus, for example, an unauthorized user at Home Credit Bank can order not only a credit or debit card, but also apply for a loan, and a bank customer sees the decision on the application almost immediately and can receive money on a card of another bank. If approved, client can immediately use the virtual card via Apple Pay/Google Pay and do not wait for the plastic card to be delivered. The Alfa-Bank application provides the option to order a credit card for unauthorized customers, order additional cards and insurance, as well as change personal data. In Sberbank mobile application, it became possible to get a consultation or contest the operation in a chat, set a new pin-code, block the card, order a reissue with delivery and electronic certificate of the available balance, apply for an insurance. The Financial Marketplace is a system that connects financial service providers and customers in a single information area and provides participants with a range of services that increase transaction efficiency. Such a system typically includes: a storefront (or data aggregator) to collect, organize and present information on financial products to the final consumer; an electronic platform to which financial products vendors are connected; a consulting bot to assist in the selection of financial products, conclusion and execution of transactions; as well as a financial transaction registrar (Solovey, Bykanova, 2019). An example is the VTB Bank, which provides opportunities for fintech startups in the field of Big Data & Analytics, AI, Blockchain, digitalization of business processes, and biometrics. Currently, the Bank is working on the creation of a wage marketplace, active implementation of the project «Housing Ecosystem», development of its multi-service service for online trading. Particular attention should be paid to the development of indigenous ecosystems by banks. An ecosystem is a set of products and services from different areas, organized around a single organization. Typically, it is building an ecosystem around a technology platform that becomes a single window for all types of services and information. In other words, an ecosystem is a digital environment in which people meet all their needs, such as financial and non-financial, including payments, entertainment, daily needs for news and information content, etc. (Blakstad, Allen, 2018; Lyman et al., 2018; Arslanian, Fischer, 2019; Hacioglu, 2020; Bykanova, 2020). See Fig. 3 for a possible range of ecosystem services provided by banks. From the point of view of ecosystem benefits for customers, a bank should become a means of satisfying a person's daily needs for food, shopping, entertainment, organizing a business, etc. The ecosystem allows all of this to be personalized and to customize only the necessary services at the right time, as it has a full understanding of the interests and needs of the client. The reasons for the interest of banks in expanding ecosystems are also understandable. Firstly, competition in the traditional banking services market is intensifying. Less and less customers are not reached. It is obvious that each new client in these conditions is a client "selected" from another bank. Therefore, in the struggle for the client, banks expand their product range through non-banking services. From the point of view of ecosystem benefits for customers, a bank should become a means of satisfying a person's daily needs for food, shopping, entertainment, organizing a business, etc. The ecosystem allows all of this to be personalized and to customize only the necessary services at the right time, as it has a full understanding of the interests and needs of the client.

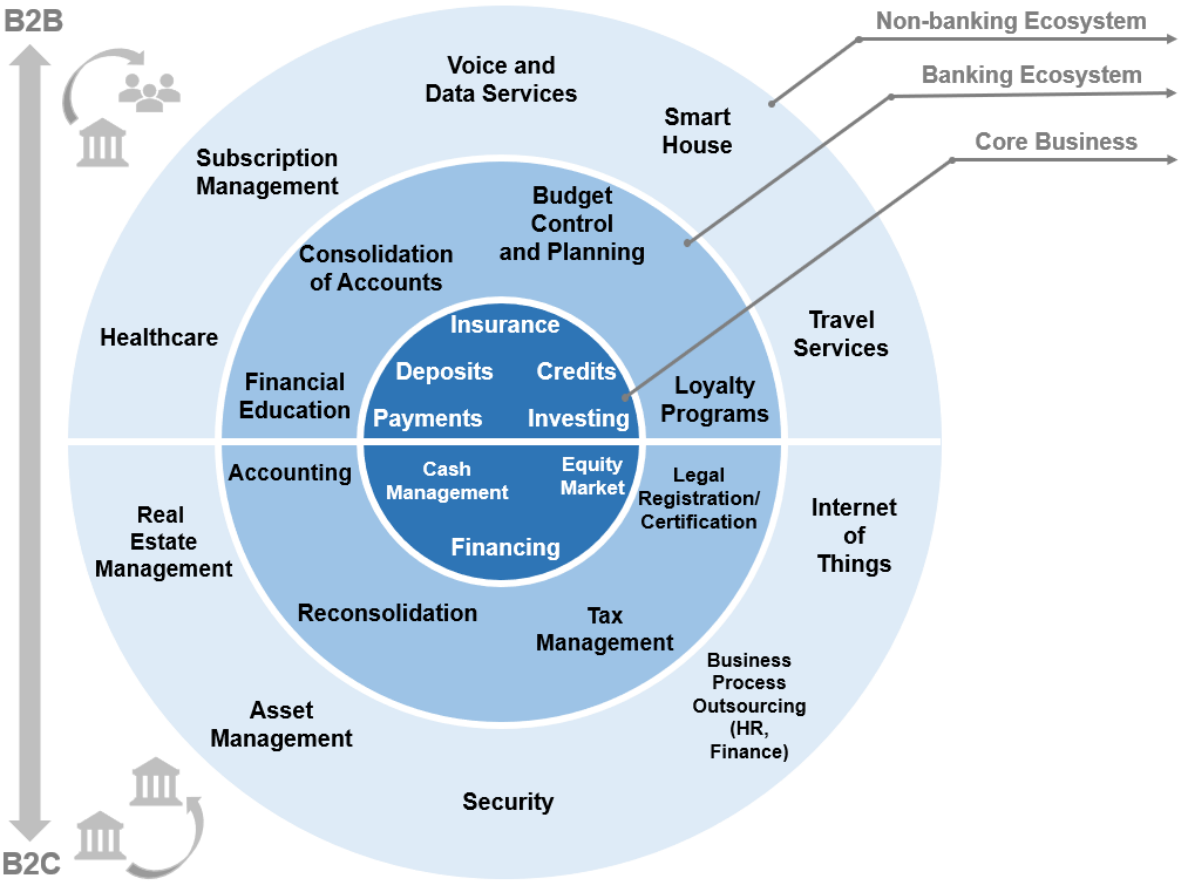

Figure 3: Banking sector ecosystem: a possible range of services (Source: Yeshugova et. al., 2019)

The reasons for the interest of banks in expanding ecosystems are also understandable. Firstly, competition in the traditional banking services market is intensifying. Less and less customers are not reached. It is obvious that each new client in these conditions is a client "selected" from another bank. Therefore, in the struggle for the client, banks expand their product range through non-banking services. Secondly, banks are looking for additional sources of income that can be diversified by selling additional services. The main condition is a client-oriented approach, which will give clients the impression that staying with the bank will give them a package of exclusive offers and they will not have to spend time searching for anything else in other organizations. Thirdly, ecosystems create powerful barriers to market entry. New participants should not only be able to adapt their products, but also compete with existing ecosystems that can satisfy all the customer's needs for services. The two largest banking ecosystems in Russia were created by Sberbank and Tinkoff; they suggest combining on their platforms all the information about their users with all possible communication channels, as well as creating a seamless client path (Table 2). To reach them, banks are constantly increasing the number of services that allow them to accompany their customers throughout their life cycle.

Table following on the next page

№	Type of services	Name of the service, provided by Sberbank	Name of the service, provided by Tinkoff
1.	B2B Services	Evotor, Korus consulting, Sberbank-Factoring, Strategy Partners	Tinkoff Business
2.	Telecommunications	SberMobile	Tinkoff Mobile
3.	Lifestyle	Foodplex, Delivery Club, Sber Food	Tinkoff Travel, Tinkoff Entertainment (*including Kassir.ru)*, CloudTips, Tinkoff Journal
4.	Investing	Sberbank-Investing	Tinkoff Investing
5.	Fintech	Yandex.Money	Tinkoff Development Centre
6.	Unified Communications	Dialog	MoneyTalk
7.	Insurance	Sberbank-Insurance	Tinkoff Insurance
8.	Cloud Technologies	Sbercloud	CloudPayments, Cloud Kassir
9.	Loyalty Program	Spasibo	Tinkoff Loyalty Program
10.	Education	Business Environment	Tinkoff Education
11.	Real Estate	DomClick	–
12.	Cybersecurity	BiZone	–
13.	Transport	Sberbank-Leasing, Cetelem Bank	–
14.	Employment	Rabota.ru	–
15.	Technical Support	Sberbank-Service	–
16.	Professional Service	Sber-Marketing, Sber-Legal, TOT, United Credit Bureau	–
17.	E-commerce B2C	Yandex.Market	–
18.	Business Process Outsourcing	Sberbro, Sber-Solutions	–
19.	Healthcare	DocDoc	–
20.	Identification	VisionLabs	–
21.	Advertising and Marketing	Segmento	–

Table 2: Banking ecosystems of Sberbank and Tinkoff
(Source: compiled by the authors)

These two banks have different patterns of ecosystem relationships. For example, the Sberbank ecosystem includes already more than 20 well-known companies in such areas as: electronic commerce (Yandex.Market), medicine (DocDoc), telecommunications (Sberbank Telecom), cloud technologies (SberCloud), communications (Dialog), identification (VisionLabs), lifestyle (Foodplex), services for optimizing business processes (Evotor, Intercomp) and others. Tinkoff prefers to create its own services and actively participates in the integration of third-party services: the bank offers its clients more than 120 partner programs. The bank has defined a lifestyle-banking strategy (for example, turnkey travel) and builds meaningful services in accordance with the needs of customers. The bank enters only niches where it has certain advantages. And vice versa, if the bank's service is not efficient, it will be closed immediately, as in the case of a mortgage broker. In the case of Tinkoff, this is truly a classic ecosystem where all services are provided in one window (Spektr, 2020, 6-9). In two or three years, another large ecosystem of VTB Bank will appear in Russia. The bank will create an IT-platform, which will include a rental service, mobile operator, digital accounting, and a marketplace for banking services. The VTB has ready solutions for eight projects that are part of the digital ecosystem, of which four services has been already operating in a pilot mode: virtual operator VTB Mobile,

the marketplace of banking services Unicom-24, the housing ecosystem and the operator of fiscal data. Decisions have already been made on digital accounting and B2B-connectivity, where small businesses can connect to overseas trading platforms (for example, Aliexpress) and find suppliers (Rambler Finance, 2019). A combination of factors is needed to create a successful ecosystem. Firs factor is the presence of a sufficiently large customer base, which trusts the bank and may be interested in receiving various services from its partners. Second factor is the bank's willingness to move away from traditional business methods and build a common development strategy in conjunction with the IT technology implementation strategy. Thirdly, in order to create efficient ecosystems, it is necessary to invest in the development of technological solutions such as cloud computing, Big Data, electronic accounting systems, etc. The audience, which uses non-financial services of the analyzed banks is constantly growing. Thus, as of the beginning of 2019, the audience of Sberbank was 67 million people, which is more than 70 per cent of the total number of active private customers of the bank. At the same time, the financial and lifestyle services offered by the Tinkoff ecosystem are used by more than 8 million customers. Among Russian banks, Sberbank has traditionally invested the most in digital transformation. In 2015-2018, it invested more than 390 billion rubles in it. VTB Bank spent 10.16 billion rubles for these purposes in the first six months of 2019, and 44.68 billion rubles for the previous four years (Bloomchain, 2019, 17).

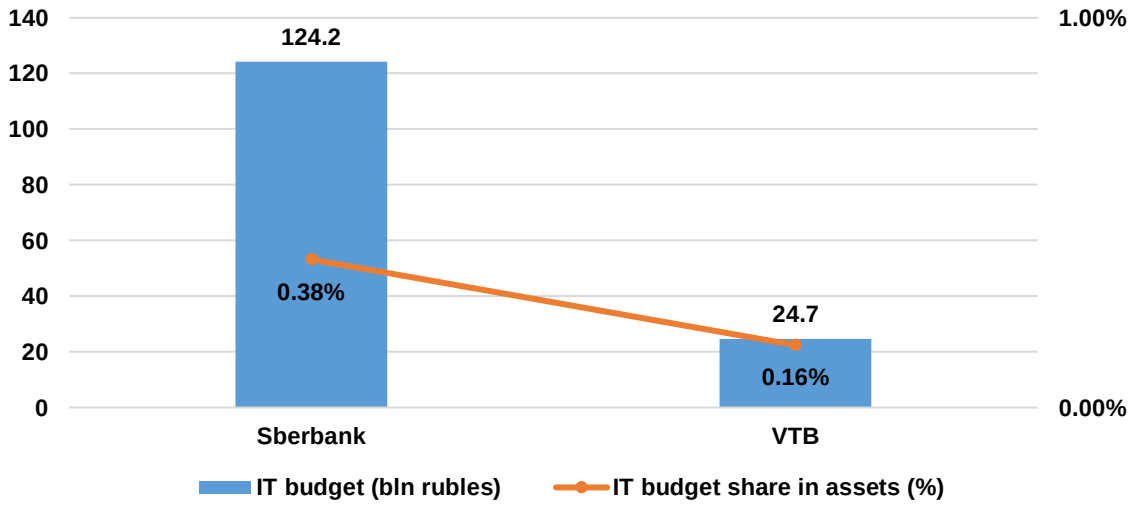

Figure 4: Information technology (IT) costs in Russian banks (Source: Sberbank, 2019a; VTB, 2019)

The costs of digital transformation by Sberbank and VTB are significantly lower than the amounts claimed by the largest western banks for the same purpose. For example, in 2019, JP Morgan spent five times more than both Russian banks combined in 2018. Moreover, if we talk about the share of IT costs in assets, then Sberbank will be approximately at the same level as the largest US banks – about 0.4 per cent. According to McKinsey, banks with successful ecosystem development can increase their return on equity to double digits by 2025 (McKinsey Quarterly, 2018, 6). One of the financial goals in the development strategy of Sberbank 2020 is to reach the ROE at 20 per cent. At the same time, it is still difficult to assess the effectiveness of banks' investments in their own technological development: most banks continue to work on combining their services, thus most of their investments may have a delayed effect: with the growing demand for multifunctional digital platforms, rapid growth of absolute and relative performance indicators of non-banking services can be expected in the coming years (Bloomchain, 2019, 18).

3. CONCLUSION

Thus, in the conditions of a dynamically developing market of financial services, in order to resist competition, commercial banks should create new efficient business models based on ecosystems, while taking into account the experience and expectations of users, striving to provide the best service and to respond needs of the customers. The Russian banking sector, as well as Azerbaijani, has all the possibilities (customers, infrastructure, technologies) to become one of the leaders in the formation of ecosystems. The transition of banking services to a new financial and technological level will improve the quality of services, reduce the cost of banking operations, provide access to banking products and services on a round-the-clock basis, and contribute to transform the banking system into digital banking.

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LINKING BETWEEN FINANCIAL LITERACY AND EXTENDING OF FINTECH SERVICES

Mirdamad Sadigov
Azerbaijan State University of Economics (UNEC)
Baku, Istiqlaliyyat str., 6, AZ1001, Azerbaijan
Mirdamads@icloud.com

Olena Pakhnenko
Sumy State University
Sumy, Rimsky-Korsakov str., 2, 40007, Ukraine
o.pakhnenko@uabs.sumdu.edu.ua

Serhiy Lyeonov
Sumy State University
Sumy, Rimsky-Korsakov str., 2, 40007, Ukraine
s.lieonov@uabs.sumdu.edu.ua

ABSTRACT

Extending of financial services in every country depends on many factors, one of which is the level of financial literacy. The modern development of the financial services market is characterized by increased levels of digitization and expansion of the FinTech segment. The article aims to determine the linking between the level of financial literacy and the spread of FinTech services. The methodological basis of the study is the methods of correlation and cluster analysis. The study is based on statistical data for 138 countries. Given that payments and transfers occupy a dominant share in the structure of types of FinTech services, the indicator of the expansion of FinTech services is the share of population aged 15 years and over, which made digital payments in the past year. The correlation analysis between the proportion of adults who are financially literate and the percentage of people aged 15 and over who made digital payments in the past year, showed a direct link between financial literacy and the prevalence of FinTech services worldwide. The paper provides cluster analysis by the k-means method, which allowed to divide countries into 4 clusters, each of which is characterized by a different correlation between the levels of financial literacy, the spread of FinTech services, and the Internet activity of individuals. For cluster analysis, we used indicators of the proportion of adults who are financially literate, the percentage of the population aged 15 and over that made digital payments in the past year, and the percentage of individuals using the Internet. The results of the study made it possible to confirm the hypothesis that there is a direct link between the level of financial literacy of the population and the demand for FinTech services.

Keywords: *Financial literacy, Financial services, FinTech, Digitization, Cluster analysis*

1. INTRODUCTION

The importance of finacial literacy is going to increase Post Coronavirus period considering the impact of it on the world economy, The authors of this article used their experience of financial consultancy and its application in different regions and analysed the world experience in this area. The importance of financial literacy for Azerbaijan, Ukraine and other countries with the same type of economy will be increasing in particular as there is direct interdependance between identifying the financial potential of different regions of the country and financial literacy of the population. Financial literacy is about understanding the nature of financial services by individuals, their ability to compare both types of financial services and different financial

institutions, and to choose the best option rationally. The level of financial literacy also determines whether people are aware of the benefits of using financial services, whether they have trust in particular financial institutions and state financial system in general, and, accordingly, whether they are in demand for these financial services (Bilan, Brychko et al., 2019; Didenko et al., 2018; Leonov et al., 2018). The emergence of new types of financial intermediaries and financial services, especially innovative ones, needs to inform consumers accordingly. It is important not only to familiarize consumers with financial products through the marketing strategy of banks and other financial intermediaries, but also to conduct information campaigns on the part of the state or public organizations about both the advantages, disadvantages and potential risks of financial services (Peresadko, Nikolaieva, 2012; Tiutiunyk, 2018; Vasylieva, Didenko, 2016). The mentioned is not only a component of financial literacy, but also a policy of protecting the rights of consumers of financial services (Palienko, Lyulyov, 2018; Poliakh, 2018; Vasilieva et al., 2017). Among the most notable innovations in the financial services market is the development of FinTech. Compared to the services of traditional financial intermediaries, FinTech services have their specific features. First, they can be provided not only by specialized financial institutions but also by other market entities. Among them are technology companies, software developers, who create mobile applications or web resources that mediate certain financial services or perform certain financial transactions (such as making payments, transfers, receiving credits through peer-to-peer or crowdfunding platforms) (Druhov et al., 2019; Bilan, Rubanov et al., 2019). Unlike traditional financial intermediaries, such platforms do not carry out credit assessments, neither provide risk-sharing. Besides, they do not have the same guarantees from the state, the same level of capitalization, or the same risk management system as traditional financial intermediaries (Alikariev, Poliakh, 2018, Berzin et al., 2018). This creates issues that need to be solved both at the micro and macro levels. The macro level of problems is related to information and cyber security, the use of new technologies in shadow and illegal operations (Lebid et al., 2018; Levchenko et al., 2019; Lyeonov et al., 2019; Vasylieva et al., 2018). For households, irrational financial behavior often results in financial losses. Therefore, financial literacy of financial services users is crucial in understanding the additional risks posed by non-financial intermediaries and the use of FinTech services (Buriak et al., 2019; Njegovanović, 2018). On the other hand, FinTech creates additional opportunities for increasing financial inclusion by making services available to SMEs and the poor (Grenčíková et al., 2019; Adeyinka et al., 2018; Kyrychenko et al., 2018; Weldeslassie, Vermaak, 2019). Another peculiar feature of FinTech services is that receiving and providing them requires the use of special tools for accessing mobile applications, web resources (smartphones, laptops, personal computers, etc.), and often requires Internet access. Accordingly, if there is no internet access or no mobile coverage in the country or certain non-urban areas, then the person will not have access to such FinTech services (Bardy, Rubens, 2019; Beyi, 2018; Milon et al., 2018). Thus, when analyzing the impact of financial literacy on demand for FinTech services, there are three components to consider:

- The level of financial literacy of the population;
- The prevalence of FinTech services (or the level of digitization of financial services);
- ICT development in the country (Internet usage by the community).

Thus, when conducting a cross-country analysis of the relationship between the identified indicators, we must simultaneously analyze all three components. The most commonly used indicators for assessing financial literacy are indicators that summarize the population's understanding of basic economic categories and patterns, such as the value of money, interest, risk, and inflation (Atkinson, Messy, 2012). Such surveys cannot technically be conducted very often.

Gathering information takes a lot of effort and time, especially when comparing data across countries. Therefore, the problem of assessing financial literacy is that statistics are irregular, limited to individual countries or regions (World Bank, 2010), and are insufficient to track the dynamics of the indicators over time. Among the most extensive global studies of financial literacy is the survey conducted by Standard & Poor's Ratings Services in 2014 (Klapper et al., 2015). As for the statistical basis for analyzing the spread of FinTech services, it is formed mainly by the type of FinTech services or their directions (payments, savings, crediting, etc.). At the same time, country-by-country statistics are virtually non-existent. That is objectively conditioned by the essential characteristics of the FinTech services themselves because when using digital technologies in financial, as in other spheres, interior features are erased (Shevliuga, Olefirenko, 2011; Vasylieva, Leonov et al., 2017). For example, mobile financial applications, regardless of their originator, can be used by users from different countries. Similarly, crowdfunding and peer-to-peer platforms, established in the US or UK, often allow you to raise resources or provide funding to citizens from other countries through access to online technology (Lin, Viswanathan, 2016). Similar conclusions can be drawn regarding trading on cryptocurrency exchanges and the like (Zekeri, Kadiri, 2018). At the same time, FinTech services have the highest share of payments, cards, and transfers (mobile wallets, online payments) (Capgemini, Efma, 2016). Therefore, it is possible to estimate the level of digitalization of financial services as a whole by the proportion of the population that conducts digital financial transactions (payments, transfers). Such data are collected annually by the World Bank. To analyze the level of ICT development in the country in terms of their accessibility to households, we use the indicator of the proportion of the population using the Internet. The source is also the World Bank database. Given that sufficient financial literacy statistics for all countries are only available for 2014, we, therefore, build a study based on a comparison of the three indicators we identified for the 2014 period: financial literacy, Internet usage, and digital payments. Correlation and cluster analysis methods are used to analyze the relationship between these parameters.

2. CORRELATION ANALYSIS RESULTS

Correlation analysis of the link between the financial literacy of the population and the extending of FinTech services, expressed by the share of the population making digital payments, showed that there is a strong direct relationship between these parameters. The corresponding value of the correlation coefficient between the studied indicators is 0.7453. Figure 1 shows the scatterplot of the analyzed indicators for 138 countries in 2014. The appearance of the chart indicates the correlation between analyzed variables. There is a possibility of establishing a linear functional relationship between them. At the same time, there is a significant deviation from the trend line in some countries. Iran, Portugal, and the Korea Republic have high rates of the share of the population, making digital payments with relatively low levels of financial literacy. Vice versa, in such countries as Myanmar and Bhutan, the level of financial literacy is above average (52-54%), but the share of digital payments does not exceed 13%. Denmark, Norway, and Sweden have the highest levels of financial literacy (71%), and the highest rates of digital payments share (98%). The lowest values of both indicators are in Yemen and Afghanistan.

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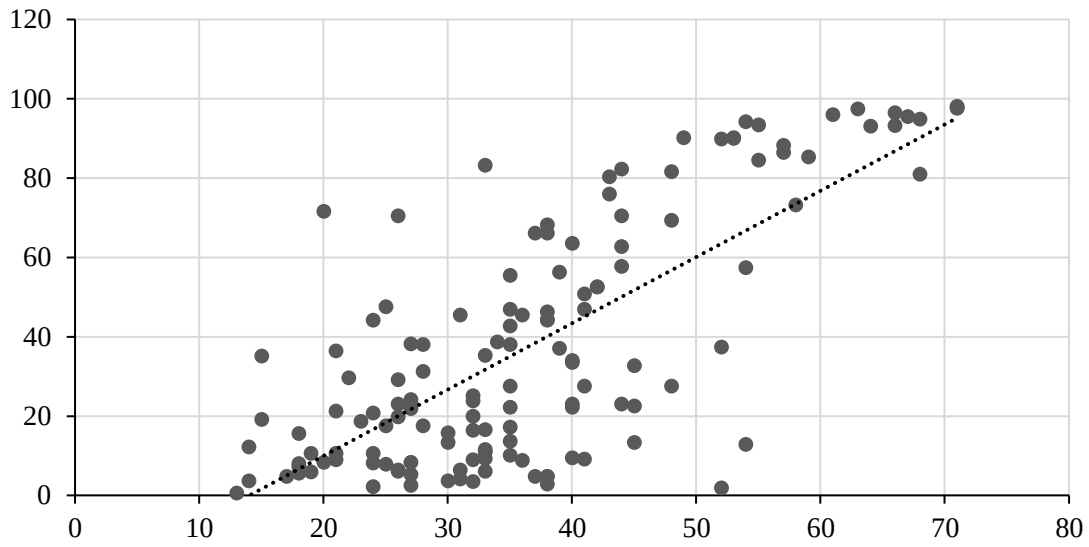

Figure 1: Scatter chart between the financial literacy of the population and the share of the population making digital payments
(Source: Authors' calculations based on the World Bank data; Klapper et al., 2015)

An analysis of the correlation between the share of the population using the Internet and the share of the population making digital payments showed an even closer relationship than the previous pair of indicators (Figure 2). The corresponding value of the correlation coefficient is 0.8163, i.e., almost 82% change in the values of the studied indicators is described by the same functional dependence. On the one hand, this close linkage of indicators is justified since the Internet is directly used to implement the technological component of digital payments and transfers.

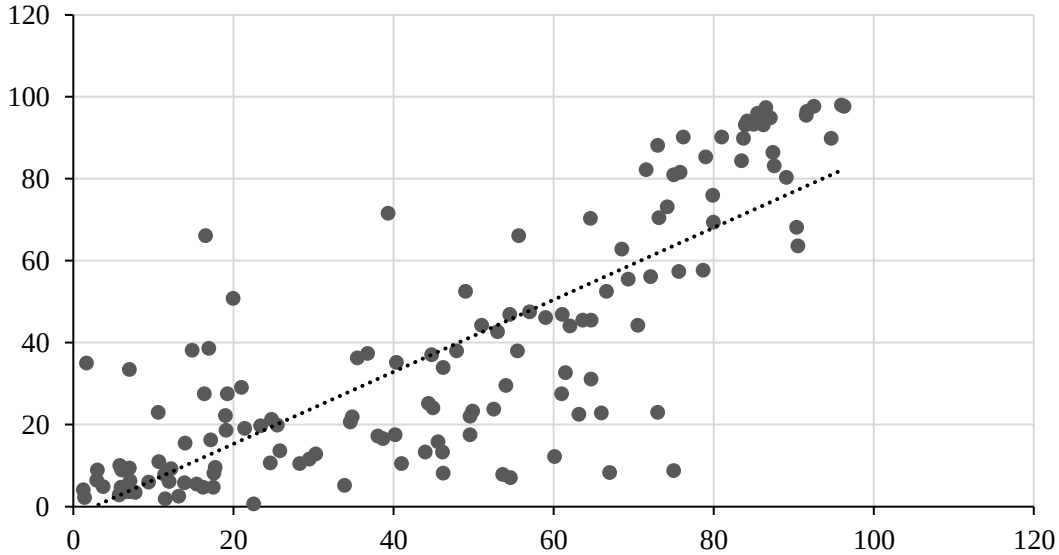

Figure 2: Scatter chart between the proportion of the population using the Internet and the share of the population making digital payments
(Source: Authors' calculations based on the World Bank data)

At the same time, digital payments can be made using smartphones, including special mobile applications, while an individual may not be a user of the Internet. In particular, country-by-country data analysis shows that even with low Internet penetration (16-20%), the proportion

of users of digital financial services is relatively high (50-66%) in some countries. Examples of such countries are Kenya and Mongolia, where mobile banking prevails. On the other hand, Azerbaijan, Albania, Armenia, Moldova are examples of countries where, despite sufficient internet access (60-75%), the proportion of users of digital financial services is negligible (7-12%).

3. CLUSTER ANALYSIS RESULTS

In the next phase of the study, we apply cluster analysis methods, in particular tree clustering and k-means clustering. Cluster analysis allows dividing the analyzed countries into homogeneous groups (clusters) at once with three selected parameters. The cluster analysis was performed using Statistica 10. The Euclidean distance calculation was used to measure distances between the objects being studied. In the first step of cluster analysis, we build a cluster tree that allows us to visually represent the estimated Euclidean distances for each country and the stages of clustering (Rubanov et al., 2019). The appearance of the constructed cluster tree demonstrates the following conclusions. First, the inability to accurately determine the number of clusters to delineate countries, which is explained by the large sample of study objects and the presence of specific features in each country that may make it close to one or the other cluster. Second, the analysis of the clustering sequence revealed both geographical communities (Denmark, Norway, Sweden) and countries from different geographic regions (Georgia and Ecuador, Germany, and Canada). In the next step of cluster analysis, the k-means clustering method makes a clear division of countries into clusters and allows us to investigate the statistical significance of the distribution. All countries were divided into 4 clusters. The smaller number of clusters does not allow to take into account all significant differences between the studied countries on the selected traits, the values of distances to the center of each cluster are large. Increasing the number of clusters to 5 or more causes a further division of the fourth cluster by less significant features. Thus, it is determined that the division into four clusters is optimal. The results of the k-means clustering are as follows. The plot of means (Figure 3) shows that each of the clusters formed has a different relationship between the average levels of the share of financially literate adults, adults who made digital payments, and individuals using the Internet. The countries in the first cluster have the highest scores for each of the studied parameters. In particular, the level of financial literacy of the population in the countries of this cluster is 55% on average, and the shares of the population using the Internet and making digital payments are higher than 80%.

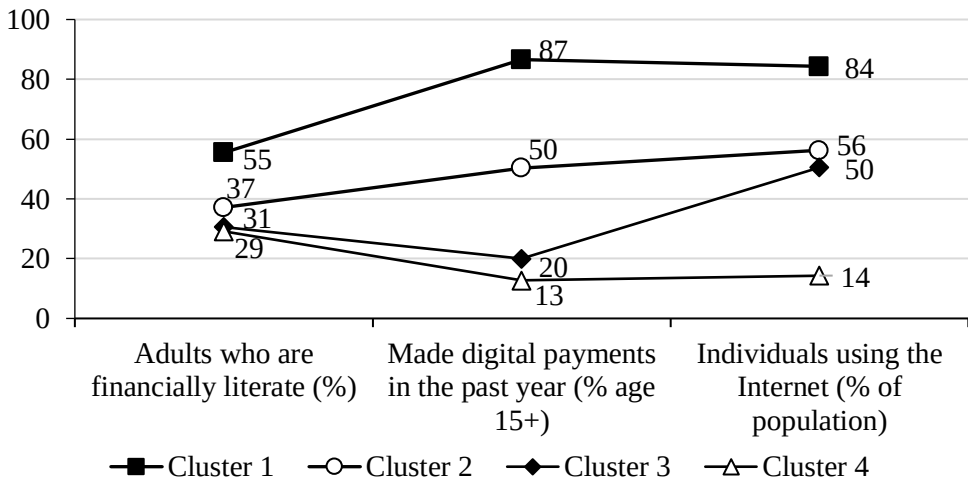

Figure 3: Plot of means for each cluster
(Source: Authors' calculations)

The second cluster countries are characterized by average levels of all the analyzed indicators, in particular, the proportion of the financially literate population in these countries is about 37% on average, while the Internet surfing and digital payments are made by nearly half of the population – 56% and 50% respectively. It should be noted that the third cluster countries have similar values of Internet usage as the second cluster countries. Still, they have lower values of other indicators. In essence, the financial literacy rate of the population is 31% on average, and the share of the population making digital payments is also low and averages 20%. A significant factor that differentiates between third and fourth cluster countries is the level of Internet usage. The fourth cluster countries have the lowest values of this indicator, which averages 14%. Thus, the fourth cluster includes countries that have the most moderate values of all studied indicators. From the plot of means, we can also conclude that despite the higher values of Internet usage in the third cluster countries, the share of digital payments made by the population in these countries remains low, which correlates with the low level of financial literacy of the population. The members of each cluster formed are presented in Table 1. By the number of countries, the first, second, and third clusters are balanced (include 27 to 31 countries), while the fourth cluster is the most numerous and unites 50 countries. The first cluster consists of the most developed countries of the world – the USA, Canada, Japan, Australia, as well as the most developed European countries. The most significant geographical diversity characterizes the countries of the second and third clusters. In particular, the 27 countries of the second cluster include less developed European countries, specifically Eastern European countries (Poland, Bulgaria, Belarus, Hungary, Russia), partly South American countries (Brazil, Chile, etc.), as well as some Asian countries (China and others). The third cluster unites the rest of the least developed countries in Europe (Moldova, Romania, Ukraine, and others), South America (Argentina, Peru, and others), as well as a large part of Asian countries (Azerbaijan, Kazakhstan, Georgia, Armenia, Vietnam, and others). Most of the fourth cluster countries are African countries, as well as the least developed Asian countries.

Cluster	Features		Members of cluster
1	Level of financial literacy	High	31 countries including Australia, Austria, Belgium, Canada, Czech Republic, Denmark, Estonia, Finland, France, Germany, Israel, Japan, Latvia, Netherlands, Norway, Singapore, Slovenia, Spain, Sweden, Switzerland, United Kingdom, United States
	Demand for FinTech services	High	
	Level of internet usage	High	
2	Level of financial literacy	Medium	27 countries including Belarus, Brazil, Bulgaria, Chile, China, Croatia, Hungary, Italy, Lithuania, Malaysia, Poland, Portugal, Russian Federation, Serbia
	Demand for FinTech services	Medium	
	Level of internet usage	Medium	
3	Level of financial literacy	Low	30 countries including Albania, Argentina, Armenia, Azerbaijan, Colombia, Georgia, Greece, Kazakhstan, Mexico, Moldova, Montenegro, Panama, Peru, Romania, Thailand, Tunisia, Ukraine, Uzbekistan
	Demand for FinTech services	Low	
	Level of internet usage	Medium	
4	Level of financial literacy	Low	50 countries including Algeria, Angola, Benin, Bhutan, Cambodia, Cameroon, Chad, Egypt, Ethiopia, Ghana, Indonesia, Iraq, Myanmar, Nepal, Nigeria, Pakistan
	Demand for FinTech services	Low	
	Level of internet usage	Low	

Table 1: K-means clustering results
(Source: Developed by the authors)

It should be noted that the data in Table 1 reflect the average level of financial literacy, Internet usage, and demand for FinTech services. Because the clustering was performed on three indicators at a time, in some countries of these samples, the actual values of the analyzed

indicators may be higher or lower than the cluster average. Notably, such deviations are inherent in countries in the second and third clusters. However, the overall trend found remains.

4. CONCLUSION

Overall, the analysis confirmed the relationship between financial literacy and the demand for FinTech services. The nature of correlation is straightforward; meaning a higher level of financial literacy contributes to greater demand for FinTech services. At the same time, there is a significant impact of the availability of online access and the level of Internet use on the prevalence of FinTech services in the country. According to the results of cluster analysis, the countries of the world were divided into 4 clusters. In most cases, the values of all three indicators for the countries of a particular cluster belong to the same level (the first cluster is the high level of all indicators, the second cluster is medium, and the fourth cluster is low). Countries in the third cluster already have an average level of Internet usage, but financial literacy remains low, and therefore, demand for FinTech services is small as well. In order to increase the level of technological development of the financial sector and the extending of FinTech, it is advisable to take measures to increase the level of financial literacy of the population. That is especially true for countries of the third cluster (Albania, Argentina, Armenia, Azerbaijan, Colombia, Georgia, Greece, Kazakhstan, Mexico, Moldova, Montenegro, Panama, Peru, Romania, Thailand, Tunisia, Ukraine, Uzbekistan, and others). Financial literacy covers many components, such as financial literacy of the consumer of financial services, financial literacy of business owners, financial literacy of managing personal finance (Korcsmaros et al., 2019). Among the components listed are those that remain relevant permanently, regardless of the economic development of the state: the ability to plan the expenses, knowledge about varieties of financial services, and the possibilities of their use. The latter is especially significant, given the active development of new types of financial services and the use of information technology opportunities in the financial sector (including FinTech). Other components (tax literacy, ability to use essential financial services, knowledge of investment, and savings options) are more relevant for developing or transitional economies (Vasylieva, Lieonov et al., 2017; Vorontsova et al., 2018). The general increase of financial literacy of the population contributes to the growth of public confidence in the financial sector, the increase in the volume of financial transactions, the expansion of the range of financial services, including the services of the FinTech segment.

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