

**THE POSSIBLE LONG-TERM ECONOMIC EFFECTS OF COVID-19: WHAT  
WILL THE POST-COVID ERA BRING?**

COVID-19'UN UZUN DÖNEM OLASI EKONOMİK ETKİLERİ: COVID SONRASI  
DÖNEM NE GETİRECEK?

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**Abstract**

Covid-19 has permanent effects on economic units and sectors. The closures and restrictions that took place during the epidemic process increased the importance of digital platforms and brought about a rapid transformation in many areas from retail trade to education, e-government applications, health, finance and logistics. It is possible that the job and employment losses created by the epidemic process will become permanent in the long term when considered together with digitalization. In this process, the role of the state will increase, requiring it to develop policies to compensate for job and employment losses, and to play an active role in new regulations for digitalization and environmentally compatible development plans. This process has brought along a radical change such as questioning the future of capitalism and creating new perspectives on global and collective actions. In this study, the long-term effects of covid 19 are discussed theoretically in the light of economic data in the context of transformation, digitalization, permanent employment losses and the increasing role of the state in supply chains.

**Keywords:** Covid 19, Long-Run Economic Effects, World

**Özet**

Covid-19, ekonomik birimler ve sektörler üzerinde kalıcı etkiler oluşturmaktadır. Salgın sürecinde gerçekleşen kapanmalar ve kısıtlamalar, dijital platformların önemini artırarak perakende ticaretten, eğitime, e-devlet uygulamalarına, sağlık, finans ve lojistik gibi kilit sektörler kadar pek çok alanda hızlı bir dönüşüm yaşanmasını beraberinde getirmiştir. Salgın sürecinin yarattığı iş ve istihdam kayıplarının, dijitalleşmeyle birlikte düşünüldüğünde uzun dönemde kalıcı hale gelmesi olasıdır. Bu süreçte devletin rolü, iş ve istihdam kayıplarını telafi etmeye yönelik politikalar geliştirmesini, dijitalleşmeye yönelik yeni düzenlemelerde ve çevreyle uyumlu kalkınma planlarında aktif rol oynamasını gerektirecek şekilde artacaktır. Bu süreç, kapitalizmin geleceğinin sorgulanması ve küresel ve kolektif eylemler konusunda yeni bakış açıları oluşturma gibi radikal bir değişimi de beraberinde getirmiştir. Bu çalışmada, covid 19'un uzun dönemli etkileri; tedarik zincirlerinde dönüşüm, dijitalleşme, kalıcı istihdam kayıpları ve devletin artan rolü bağlamında ekonomik veriler ışığında teorik düzeyde ele alınmıştır.

**Anahtar Kelimeler:** Covid-19, Uzun dönemli Ekonomik Etkiler, Dünya

## 1. INTRODUCTION

The world has faced different crises in the past. The Great Depression, the two World Wars, the 2008 financial crisis all caused economic disruptions but none of them resulted in simultaneous movement restrictions (Buğra et al., 2020: 139). Unemployment spread gradually during the Great Depression, now exceeding 30 million in the USA alone and 140 million in India. While World War I was primarily confined to Europe, World War II did not affect the Americas and most of the African continent. The 2008 financial crisis grew among emerging markets (Buğra et al., 2020: 139). However, covid-19 pandemic is a global phenomenon that affects the whole world. Since its discovery in December 2019, the severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) or Covid-19 has been rapidly spreading across the globe (Ağartan, 2020: 190). According to Yong (2020) this outbreak is the first major world crisis since globalization became a fundamental reality. Some analysts view it as a mix of the 1929-1933 Great Depression and the 2008 global financial crisis.

Covid-19 pandemic has multi-dimensional effects that includes public health and economic activities in many countries and it is contagious not only in the field of health but also in the economic sense as the global economy is interconnected with the movements of labor, capital, goods and services (Strange, 2020: 456). In this context, after the epidemic, changes that will be felt in different areas from production to working models, from economic policies to international rules will take place over time (Gür et al., 2020: 70). According to Manyika (2020), with the increase of these trends, it has come to the fore to reconsider various beliefs that have possible effects on the long-term choices for the economy and society. These influences range from attitudes towards productivity, the future of capitalism, the intensification of economic activity and life, industrial policy, our approach to global and collective problems, and the role of government and institutions. Stevano et al. (2021), state that the covid-19 crisis has shed new light on the role of the state. After decades of neoliberal ideology, which saw the state as merely a fixer of market failures, the covid-19 pandemic has made it impossible to underestimate the active role the state plays in capitalism.

In terms of the affecting many sectors and economic units, the long-term economic effects of covid-19 can be explained in the context of transformation in supply chains, digitalization, permanent employment losses, and the increasing role of the state. In addition, this process includes change at different levels in terms of individuals, companies, institutions and states. This study focuses on the transformation experienced with covid 19 and the impact of this transformation on every segment at different levels.

## 2. THE POSSIBLE LONG-TERM ECONOMIC EFFECTS OF COVID-19

### 2.1. Transformation in Supply Chains

The pandemic has sent three shock waves to the global world. The first is the epidemic in Wuhan China, which caused the disruption of supply chains; second, the wave in the US that triggered the global stock market crash; the third is the wave that affects the developing world such as Brazil and India (Yong, 2020). In terms of supply chain the covid-19 crisis has revealed the fragility and low flexibility of global supply chains (Fonseca and Azevedo, 2020).

The covid-19 crisis caused sharp contractions in economic activity across most sectors and economies. This crisis affected the economy through a number of different channels (Meier

and Pinto, 2020: 2). In terms of the supply chain, the first direct impact relates to production facilities that must be closed when the workforce falls ill or is placed under quarantine. This situation affected not only factories but also all industries.<sup>1</sup> The next indirect effects are adverse conditions that arise in the absence of alternative suppliers. Indirect effects were more rapid because of large-scale unemployment, which emerged as a combination of export and import bans and later due to reduced consumption (Kovács and Sigala, 2021: 41).

Considering that China alone has 28% of the global manufacturing industry and this ratio has reached 40% with other East Asian countries, the epidemic has clearly shown that reliance on East Asian countries for manufacturing production is a very serious risk for global supply chains (Gür et al., 2020: 73). In this context, multinational companies can move some of their production facilities from China to other regions. Other developing countries, which have a wide range of production in the manufacturing industry, high level of human capital and logistical advantages, can be more tightly integrated into global supply chains by attracting more foreign direct investment in the long run (Gür et al., 2020: 73).

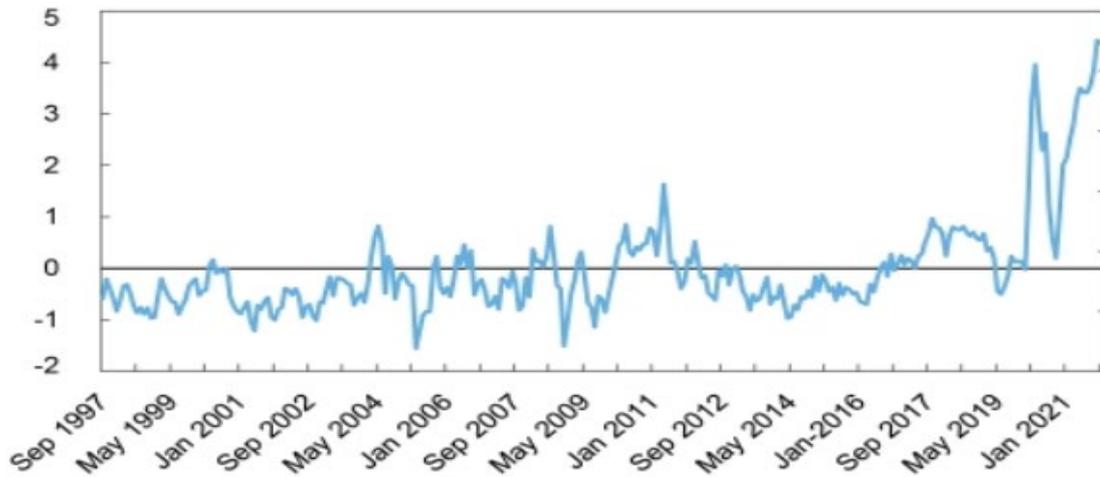
In this context, the impact of the covid-19 process on the supply chains of the automotive can be discussed. Before covid-19, automakers were attempting to manufacture critical parts in the automotive industry in their own countries, and this situation reached its peak with the tariff war between the USA and China. The vulnerability of the automotive supply chain has been confirmed by the pandemic. The sudden closure of production facilities in China created a domino effect, affecting Europe, the USA, India and South America, causing widespread disruptions among the world's automakers. Therefore, countries that shift their production activities to low-cost countries are striving to establish a centralized management system in one place in the supply chain (ETAUTO, 2020). Centralized management of a single location has the advantage of keeping local suppliers in one location, rather than sourcing from globally distributed suppliers in the unlikely event (Ishida, 2020: 148). In the future, the transition to a centralized management model that takes advantage of the natural power of the “closed-integral” model that increases the proximity between suppliers and production areas will be effective (Ishida, 2020: 150).

On the supply chain side, disruptive technologies play a crucial role in the expected transformation of supply chains. These main disruptive technologies of Industry 4.0 that may be adopted by supply chains include big data analytics, Internet of Things (IoT), artificial intelligence, cloud computing, blockchain, robotics, additive manufacturing, and augmented reality (Frederico, 2021: 96). In this case, supply chain management (SCM) becomes important. Shaping the future of supply chain management include these qualifications: Artificial intelligence and automation, increased focus on sustainability, customization, the internet of things, digitalization, strengthened relationships, risk management and resiliency, increased visibility, circular supply chain, cloud-based solutions (Evans, 2021). In this context, covid-19 has created both supply and demand uncertainties and capacity fluctuations, causing gaps and disruptions in global supply chains (Ivanov, 2021). The Global Supply Chain Pressure

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<sup>1</sup> In this process, due to the shortage of various personal protective equipment and other materials in hospitals, the lack of various food and personal hygiene products and even electronic products, there were many disruptions in both physical media and online shopping (Frederico, 2021: 95).

Index (GSCPI). includes a comprehensive summary of factors that negatively impact global supply chains (Benigno vd., 2022).



**Figure 1.** The Global Supply Chain Pressure Index (GSCPI)

**Source:** Benigno vd., 2022.

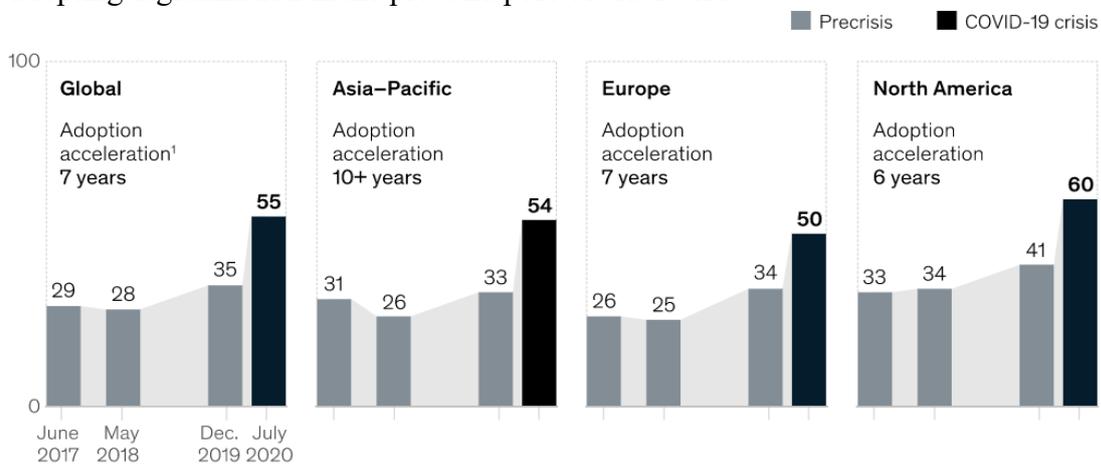
Figure 1 shows that the GSCPI jumped at the beginning of the pandemic period, when China first implemented quarantine measures. More recently, global supply chain pressures have peaked, albeit at high levels, and appear to be starting to moderate somehow (Benigno vd., 2022). As a result, it is important to internalize technology with artificial intelligence, internet of things and cloud-based applications, focus on sustainable services in parallel with the increase in the number of consumers who prioritize the environment, offer personalized products for consumers in every segment, strengthen relations with vendors and suppliers, and develop new policies against uncertainties. When these are realized, SCM will be more flexible, efficient and sustainable (Evans, 2021). These strategies can directly affect supply chain resilience by creating greater resilience in urgent, sudden and high-magnitude events, similar to the coronavirus occurrence (Frederico, 2021: 98).

## 2.2. Digitalization and Digital Inequality

Social distancing, lockdown, and the new normal are consequences of the current covid-19 pandemic. This context has profoundly accelerated digital transformation as one solution to avoid a total economic collapse (Soto-Acosta, 2020: 262). Therefore, the covid-19 pandemic has forced most organizations to adopt new internal work practices and deliver products through digital channels. In this process, companies experienced radical changes and developed solutions based on digital technologies in a short time. In addition, management and collaboration models had to be redesigned so that no one in these organizations would be left out of the digitalization<sup>2</sup> process (Almeida et al., 2020: 97).

<sup>2</sup> Digitization means converting something into digital form and usually means encoding data and documents. Digitalization is transforming business processes to use digital technologies instead of analog or offline systems such as paper or whiteboards. The digital economy is, in simple words, the plain economy being more and more affected by digital technologies such as the Internet, mobile connectivity, cloud computing, big data, machine learning, artificial intelligence (AI), blockchain, Internet of Things (IoT), robotics, smart manufacturing, predictive and data analytics and other new digital technologies that keep emerging. In this

The covid-19 has accelerated the digital transformation of businesses and entire industries such as retail, restaurants, and education (Soto-Acosta, 2020: 261) and not only in companies but also individuals and public entities (Almeida et al., 2020: 101). With this process in 2020, the world embraced digital transformation at an accelerated pace and reimagined the critical role technology plays in the way we work, learn and live (Roese, 2021). In this context, digitalization has become the primary goal of countries to end the effects caused by the restrictions, quarantines and social distance measures due to the pandemic. All routines from consumption to production have changed and the use of industrial robots has become important for all economies (Soyyigit and Eren, 2020: 110). In this process, although online activities have decreased with new treatments for covid-19, online activities are likely to remain high in areas where it acts as a catalyst, including telework, e-commerce, e-health, e-payments (OECD, 2020: 2). In other words, there is no doubt that digital technologies will continue to change the way we live and work in the wake of the pandemic (OECD, 2020: 6). Figure 2 presents an idea of adopting digitalization in the pre- and post-covid-19 era.



**Figure 2.** Average share of products and/or services that are partially or fully digitized, %

**Source:** McKinsey&Company, 2020.

However, digital technologies will be adopted at different levels in each institution and country. According to (Amankwah-Amoah et al., 2021) constraints at the technological, institutional, security and privacy and organizational level are prominent. In terms of technological infrastructure: Technology and digital divides between cities and rural areas and developed and developing nations limit scaling-up of digitalization. In terms of institutional constraints: The lack of adaptation of official institutions to new technologies, lack of government support for digitalization, poorly designed education system for digitalization, limited access to internet connection, lack of government infrastructure investments. In terms of security and privacy: Privacy concerns of employees and other stakeholders, uncertainty about security risks and unsafe virtual facilities, lack of confidence in businesses ability to

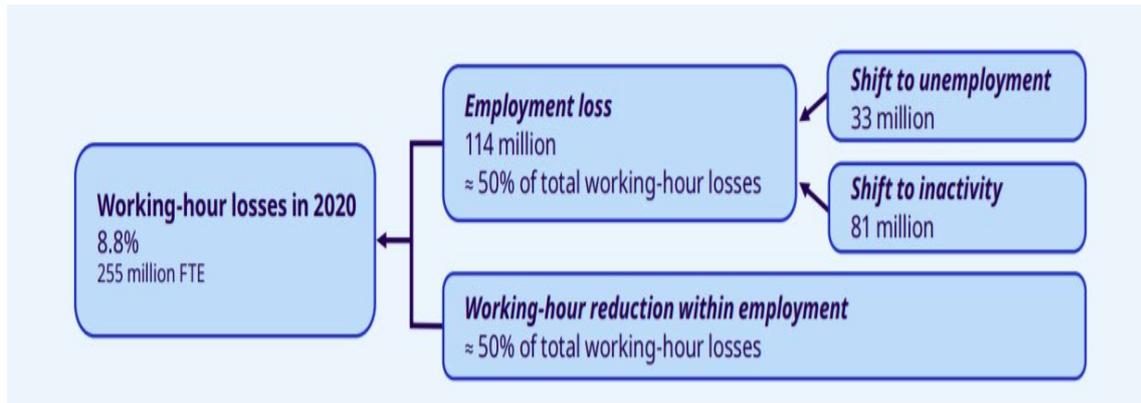
context, digitalization is the transformation of interactions, communications, business activities and business models into more digital ones (Soto-Acosta, 2020: 260). Digital technologies affect the computerisation of production, service delivery and even the private sphere. Connectivity leads to completely new dimensions, as electronic devices and microprocessors connect people with each other, machines with workers, and machines with machines (Walwei, 2016).

counter the threat from cyber-attacks and hackers, risk of public or local internet outages. In terms of organizational constraints: Lack of financial resources for the upfront cost of investments in new technologies, lack of technical expertise to facilitate digitization, organizational flexibility/unwillingness to change, lack of deep knowledge of the safety and security measures inherent in digitizing business processes, employee resistance (Amankwah-Amoah et al., 2021). In this context, many rural and low-income communities around the world, including those in large urban areas, lack reliable, affordable internet access. As more devices and systems become dependent on Internet connectivity, these people will be further denied access to the benefits of technology (Roese, 2021).

Beaunoyer et.al. (2020), examines digital inequality in four different categories. Technical, autonomy of use, social support networks and experience. i) Technical means that \* slower connections, due to unprecedented internet traffic load \* inequalities in personal technological equipment. ii) Autonomy of use: \* Physical access to internet limited by the inaccessibility to public spaces or workplace \* Carrying out designed online activities at home restricted by other family. iii) Social Support Networks: \* Actualizing the support one can get in technology use complicated by isolation requirements. iv) Experience: \* Differential increases in time spent online leading to differential opportunities to enhance user's skills. As a result, the concept of digital inequality has gained more importance than before the covid-19 process. Dijk (2020) recommends that "Revitalizing social mobility everywhere • Long-term digital/social programs for disadvantaged groups in their own communities • Provide cheaper digital technology • Design technology that is easier to use • Better government and other public regulation for the Internet, especially Internet platforms improving trust".

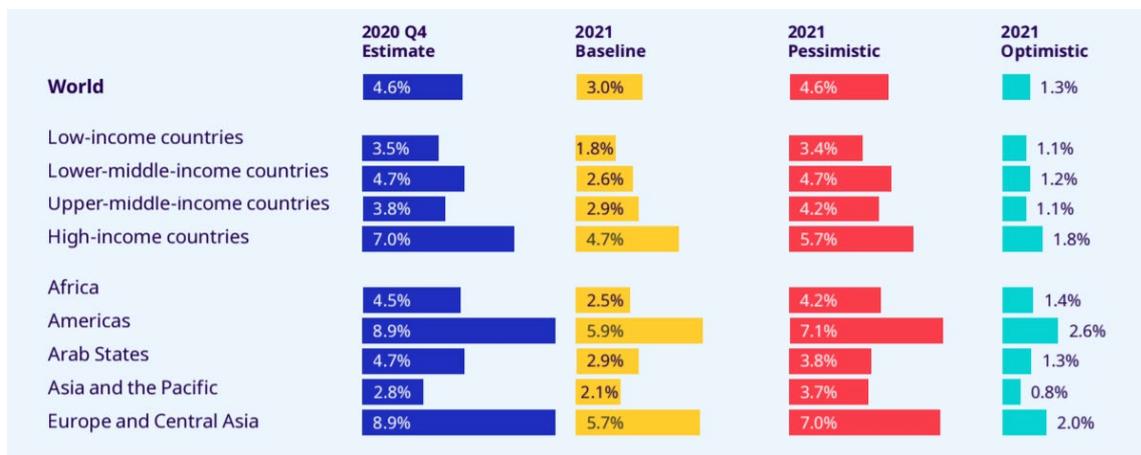
### **2.3. Permanent Employment Losses**

According to the International Labor Organization (ILO) report "Covid-19 and the world of work", 8.8% of global working hours were lost in 2020 compared to the fourth quarter of 2019, equivalent to 255 million full-time jobs is coming. Its global cost is \$3.7 trillion (4.4% of 2019 GDP). Losses of working hours were particularly high in Latin America and the Caribbean, Southern Europe and Southern Asia. The loss of working hours in 2020 is about four times higher than the 2008 global crisis. The basic scenario is that the loss of working hours will continue in 2021 (a decrease of 3%) and this will correspond to 90 million jobs. According to the pessimistic scenario, 4.6% loss of working hours and 130 million job losses are expected. The optimistic scenario indicates 1.3% working hours and 36 million job losses (International Labor Organization, 2021). The covid-19 crisis has had a markedly uneven impact on different socio-economic groups. Greater impact of the crisis on women, young people and other vulnerable workers in terms of working-hour and employment losses (International Labor Organization, 2021). In addition, it is estimated that global labor income decreased by 8.3% in 2020 compared to the previous year. The highest labor income loss was experienced in lower-middle-income countries with 12.3% (International Labor Organization 2021: 10). Figure 3 and Figure 4 summarize this situation.



**Figure 3.** Estimates of the working hours and employment lost in 2020

**Source:** International Labor Organization, 2021.



**Figure 4.** Different scenarios for 2021, world and by region and income group

**Source:** International Labor Organization, 2021.

One of the important determinants for future labor market trends is technological change, and two questions have always been raised since the beginning of industrialization. One is whether technological change will actually destroy or create jobs, and the other is what will be the effects of technological change on the composition of employment (Walwei, 2016). In terms of digitalization Soto-Acosta (2020) states that automation will replace routine tasks that do not require interpersonal human skills, and that only 20% of work tasks can be automated. (Soto-Acosta, 2020: 262). However, this point of view does not explain the fact that some segments have a higher share in the distribution of income arising from technology, the decrease in the real wages of the workers and their condemnation to precarious working conditions.

(Harvey, 2020) draws attention to the fact that disruptions operating in companies value chains and certain sectors have become more systemic and significant than initially thought. In the long run, there is a trend towards shifting to less labor-intensive modes of production and relying more on artificial intelligence production systems. These developments can be expected to shorten or diversify supply chains. Disruption of production chains requires layoffs of

workers, which reduces final demand, while demand for raw materials reduces productive consumption (Harvey, 2020).

#### **2.4. Increasing Role of The State**

With the global epidemic, the issue of rethinking the state, society and market relations as well as the health infrastructure and social security practices of countries has come to the fore. In this process, it is observed that various successes and failures have been experienced in terms of market economies and statist practices. Therefore, the process in question accelerates the search for existing mechanisms and the establishment of new mechanisms (Macar and Asal, 2020: 231). Existing global institutions are based on the design of a global institutional system developed in Bretton Woods in 1944 after the Second World War to stop wars between countries and regulate the functioning of the concrete economy. However, the system at that time was designed for the world of industrial production, commodity and finished goods trade, where there were borders. As the digital world evolves, we need a new governance framework as we emerge from another period of global instability (Medhora and Owen, 2020).

Governments are also devoting more attention to emerging digital technologies such as AI, blockchain and 5G infrastructure, the latter of which is critical to support enhanced mobile broadband, Internet of Things (IoT) devices and AI applications (OECD, 2020: 4). In this context, as governments re-evaluate existing digital policies in light of the covid-19 crisis, they will face complex, interrelated issues that require harmonious international coordination, cooperation and dialogue (OECD, 2020: 6). According to (Guinan et al., 2020) the reasons that require radical change in economies are the precariousness of modern work, the hollowed-out public space, the extraction of unlimited wealth from our communities and its redistribution to the largest corporations and a small elite. Although these factors existed before the global epidemic, it was inevitable to experience radical changes in the social and economic organization of the society in this process. (Medhora and Owen, 2020) state that after the global epidemic, technologies should be examined and policy makers should look deeply at issues such as data privacy surveillance technology, inequalities embedded in algorithms and the integrity of our information ecosystem. States will need to create a new set of legal, regulatory and ethical structures in this process.

Yong (2020) states that public health will be seen as a national security issue and will be an important focus of public policy in the future. Thus, global supply chains will be reshaped around national security and public health security. Because countries want to reduce their dependence on these issues. In addition, according to Yong (2020), the relations between the state and the market and between the state and society will be adjusted significantly. There will be major changes in value preferences, government intervention in the economy will increase, and the influence of the Chinese model will continue to increase. Compared to the economic development model called "state capitalism" in the Western media during the epidemic, the state-led "mixed economy" model represented by China showed a stronger resistance and adaptability in the face of major crises. The strategic, ideological and geopolitical rivalry between the great powers will intensify in the new global situation after the pandemic (Yong, 2020). In summary, the increase in state intervention in the economy can be discussed firstly in the context of digitalization and in the context of developing policies for job and employment

losses, and secondly, as stated by (Yong, 2020) in the context of the conflict between the economic development model called state capitalism by the Western media against the mixed economic model represented by China.

Although concepts such as vaccine nationalism have come to the fore during the global epidemic, if we are talking about a strong state-oriented perspective in the future, it can be thought that the denominators that need to be acted together on issues such as technology, education, health and social security will increase in the competition between countries. Because recently, the field of health has shown that acting jointly will reduce economic and social costs. In short, the risks and uncertainties in the markets and geo-political environment, technological developments, new trends in social security practices indicate that the role of the state will gradually increase and the state-society-market relationship will be reconstructed with new adaptation mechanisms.

### 3. CONCLUSION

In this study, the expected economic effects of the covid-19 epidemic in the long term were evaluated. Accordingly, it can be said that the epidemic first disrupted global supply chains on the supply and demand side and this created a national security risk for countries. The closure and restriction measures taken during the epidemic accelerated digitalization. Artificial intelligence, cloud-based applications and the Internet of Things are seen as key digitalization initiatives that will transform economies in the future. In parallel with the deterioration in global supply chains and the acceleration of digitalization, it is possible that the job and employment losses experienced during the epidemic process will have lasting effects.

The whole process during the epidemic points to the increasing role of the state. In this process, it can be thought that the concept of sustainability will carry more weight in government policies. The role of the state is discussed in the context of national regulations for digitalization and employment losses, and in the context of system discussions regarding the weight of the state in the USA and Europe as opposed to China. As stated by Yong (2020) the reflections of the epidemic on the state model discussions were realized on the basis of the contradictions and competition between the “state capitalism” of the West against the “mixed economy model” represented by China. The area in question are important factors in the conflict between China and the USA and between China and the European Union. On the other hand, as discussed by Manyika (2020) the questioning of capitalism, the approach to global and collective problems, the role of government and institutions will be discussed together with the covid 19 process.

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