

Pálinka: going abroad? The competitiveness of the pálinka based on RCA models

Aron Torok
PhD candidate

Corvinus University of Budapest, Department of Agricultural Economics and Rural
Development

H-1093 Budapest Fovam ter 8. HUNGARY

aron.torok@uni-corvinus.hu

Abstract:

Pálinka is a fruit based spirit distilled in Hungary for hundreds of years. The national spirit of the country is a Protected Designation of Origin recognized by the European Union. Although the most important market of the pálinka is the domestic market, the distilleries also try to export their products. The most important target countries are the Old Member States, especially Germany and Austria. The paper examines whether the several econometric models proves the assumption that the pálinka should also go abroad.

Key words: pálinka, spirit, competitiveness, international trade, PDO products

Introduction

Almost every nation has its own spirit which products are considered as the “national spirit of the country”. Usually these spirits are associated with their country of production (e.g. calvados – France, korn – Germany, ouzo – Greece, grappa – Italy, pálinka – Hungary etc.) and sometimes also deal with great economical importance as well.

Depending on the countries’ agricultural conditions these spirits could be distilled from various raw materials: from fruits (e.g. korn, pálinka), from cereals (e.g. whisky/whiskey), from grape products (cognac, grappa) and vegetables (e.g. vodka). There is a general observation that European countries situated closer to the North produce less fruit-based spirit, and produce more wheat- and vegetable-based spirit. Therefore from an economical point of view it should be distinguished whether a spirit is distilled from a commodity-type and relatively cheap raw material (e.g. cereals) or from higher-priced raw material (e.g. fruit). In Hungary the national spirit is the pálinka, beyond all doubt. This is a fruit based spirit produced for hundreds of years. Except a 50 years long period of the communist Hungary the pálinka had a great reputation and nowadays this alcoholic product regains its former economical importance. The success of the sector is well indicated in the growing number of the distillers but it is still not clear whether they should focus only on the domestic market or shall go abroad with their products.

The spirit market – as a whole – in Europe is one of the most matured and competitive markets, therefore it is a great challenge for the new EU member states to compete with their fruit spirits in the community’s market. Therefore this paper is to examine whether there is any comparative/competitive advantage for this product in the old EU member states (EU-15).

The pálinka

First of all pálinka is described from a historical, technical and legislative point of view.

History

In the 11th century people in Europe got familiar with the procedure of distillation. In Hungary the main products were spirits from cereals and wine. That time the cognac was a kind of medicine. The first written memory in Hungary calls the pálinka “aqua vitae reginae Hungariae” that means “the water of the life” and the arthritis of Queen Elisabeth was healed by it. From the 15th century the distillation was a privilege of the lairds. The history of the rape pálinka origins also from that time: at the grape harvest after the pressing the rest was given as a gift by the lords to the peasants.

The term “pálinka” appeared at the beginning of the 16th century, at the 1520’s it was already written the same way as today. The word itself came from the Slovakian “palenka”. It is interesting to mention that that time the abbeys were one of the most important alcohol producers; they distilled pálinka and added herbs which they called “healing liqueurs”. Similar products are also available nowadays.

Since 1641 there is an act that allowed the cities to make alcohol. Written memories also mention that sometimes the big amount of crop that was distilled caused starvation. From the 18th century the pálinka distillation was already important revenue because of the taxation. In 1815 the first book about the pálinka distillation was published.

The privilege of the landlords became a written act in 1836 and on the 29th of September 1850 the pálinka-tax was introduced which caused that pálinka production became a monopoly of the government. From this time there are written statistics from this sector. According to them that time 105.129 distilleries has already existed; it means that almost all the landlords had an own pálinka producing unit.

From the middle of the 19th century the pálinka production became an industry sector in Hungary but this also meant the end of some small distilleries. In 1913 there were only 860 of them altogether. It’s very interesting that in Hungary there was a prohibition period like in the USA; it was under the communist governing right after the end of the First World War. In

1938 everything connected with spirit production (distillation, trade etc.) became a state monopoly. This regulation didn't change until 1951.

After the Second World War there was a communist "change" in Hungary. The ideology of the Soviets did not make a distinction with the pálinka: both the big and small distilleries became a state property. The politicians decided how much pálinka is allowed to make and where to sell it. From 1952 a new rule appeared: the so called "half-distillation". It meant that half of the pálinka went to the government and the people had to cover all the cost of the distillation; this system was in force until 1970. In practice it was equal with the decrease of the quality: people were not interested to produce in high quality. The professional distillers, who were the most important element of the process, were not involved any more; the state took their properties into public ownership. That time it was allowed to make "pálinka" without distillation. It meant that from industrial alcohol and synthetic aromas they mixed some liquid and sold under the name of "pálinka". It is clearly visible that during the socialism the image of the pálinka was almost fully destroyed. During these years there were only 880 distillers in Hungary and out of them there were only 202 owned by individuals. In the middle of the '90s the reputation of pálinka started to rise again. (Török [2010])

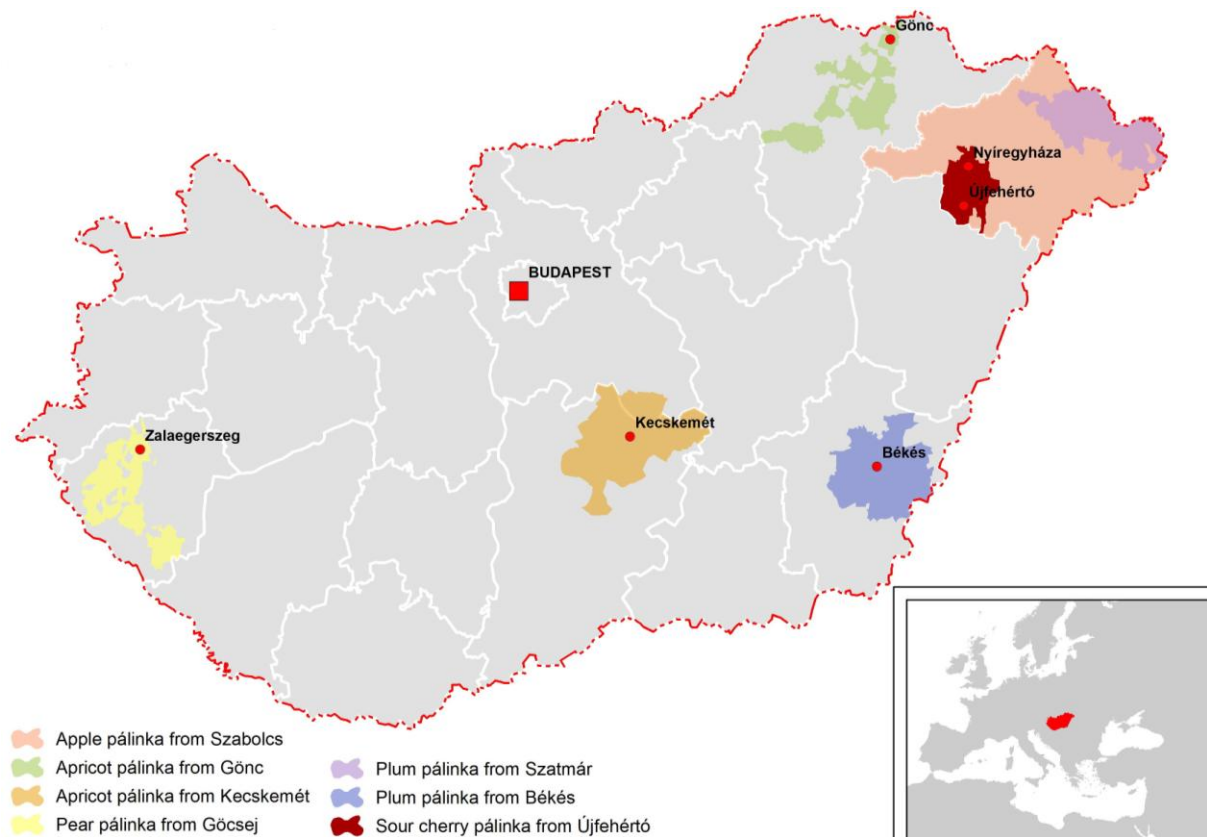
The technology of pálinka production

The uniqueness of pálinka relies on its ingredients, of which the basic is 100% fermented fruit. Pálinka's ingredients can be divided into two large groups. Originally, in the Middle Ages, pálinka tasted of distilled fermented fruits such as plum, pear, apple, cherry (and sour cherry) and apricot. Later on, wild fruit and other specialties such as dogwood, rosehip and the like were added, but they were ingredients available only in small quantities. Therefore, this kind of pálinka could only be produced under special circumstances, nevertheless the specialties were added to the spirit in its preparation process.

The quality of the pálinka is highly determined by the quality of the raw materials. The technology of the fermentation and distillation is an other success factor, the professional distilleries use expensive producing units in order to meet the high quality standards.

Therefore, pálinka could be distilled from any type of fruit available in Hungary. The tastes with the most important economical value are usually situated in the eastern part of Hungary and the most famous varieties are considered as PDO products. (Figure 1)

Figure 1 Location of the PDO pálinka producing areas in Hungary

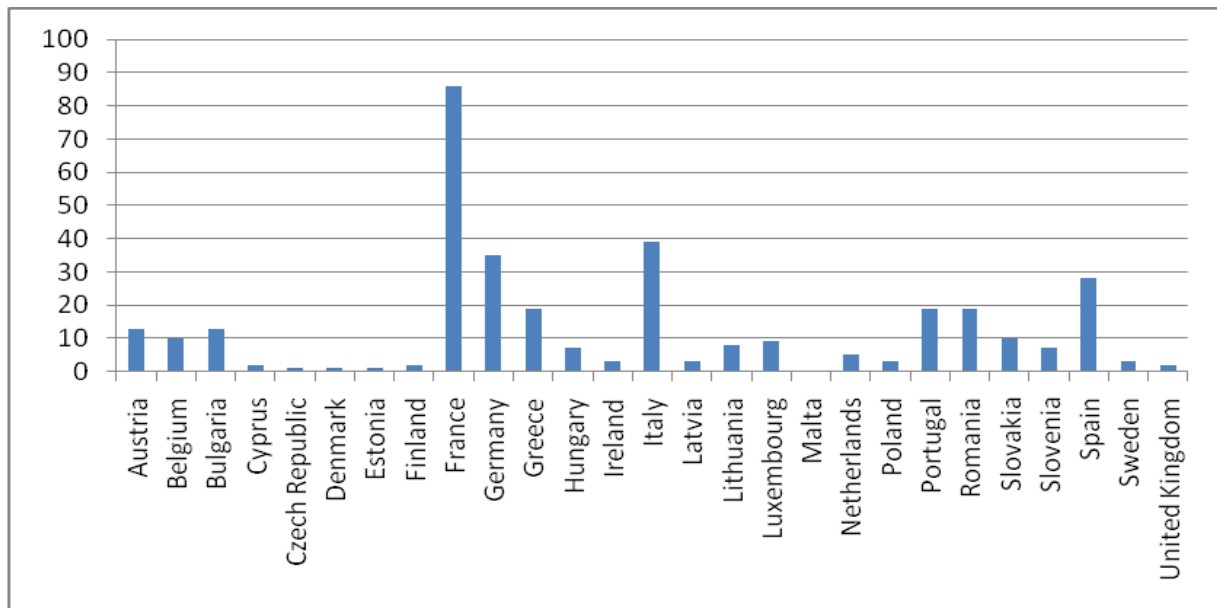


Source: Author's own composition

The legislative background of the pálinka

As it was already mentioned, according to the 110/2008 EC regulation 348 spirit products of Europe are considered as PDO product. As Figure 2 indicates, the majority (54%) of these products are from four countries: France, Italy, Spain and Germany. Also it is clearly visible that the Old Member States have much more registered PDO products than the NMS.

Figure 2 Number of registered PDO spirits by countries



Source: Author's own calculation based on EC regulation

The European Union (EU) recognizes several types of pálinka (Table 1) as a Protected Designation of Origin (PDO). Pálinka is also protected under Hungarian law, which stipulates what can or cannot be used in the drink's preparation process in order for it to be called pálinka. According to the Pálinka Act, pálinka needs to have 100% pure fruit ingredients and no additives (neither sugar nor aromas) are allowed, only distilled water. All raw materials have to be produced in Hungary and all stages of the drink's processing (mashing, fermenting, aging, bottling etc) must be carried out in Hungary. Last but not least, the product's alcohol content must be between 37.5% and 86%.

Table 1 List of the PDO pálinka

Name	PDO since
Apricot pálinka from Kecskemét	2000
Apple pálinka from Szabolcs	2000
Plum pálinka from Szatmár	2000
Plum pálinka from Békés	2001
Apricot pálinka from Gönc	2003
Sour cherry pálinka from Újfehértó*	2007
Pear pálinka from Göcsej*	2008
Rape pálinka from Pannonhalma*	2009

**Protection yet only on national level*

Source: Author's own composition

The Pálinka Decree was created in 2004 which was a new beginning for the pálinka: According to the 148/2004 decree of the Ministry of Agriculture and Rural Development we can call the alcoholic drink pálinka if it meets the following requirements:

- it contains 100% pure fruit ingredients;
- there is no added materials (neither sugar nor aromas etc.) only distilled water;
- all raw materials were produced in Hungary;
- all the steps of the procedure (mashing, fermenting, aging, bottling etc.) were carried out in Hungary;
- the alcohol content is at least 37.5 v/v% and maximum 86 v/v%.

After the decree the Pálinka Act was accepted by the Hungarian Parliament in 2008. The Act LXXIII confirmed the instruction of the decree.

Research questions

The objective of this paper is to examine whether there is any comparative/competitive advantage for this product in the old EU member states (EU-15). The spirit market in the EU is highly matured, especially in the EU-15 countries; therefore it is a great challenge for pálinka to compete on these markets.

Methodology

The most commonly used method to measure competitiveness in the international trade is the model of Revealed Comparative Advantages, which was first used by Balassa in 1965. The Relative Export Advantage (RXA) index (also known as Balassa-index) is the original RCA index used in 1965:

$$(1) \text{RXA} = \left(\frac{x_{ij}}{x_{wj}} \right) / \left(\frac{\sum x_i}{\sum x_w} \right)$$

where x represents exports, i is a country, j is a commodity and w is a set of countries. In case $\text{RXA} > 1$ revealed comparative advantage is observed.

To compare different Balassa-indices we apply classification by Hinloopen-van Marrewijk [2001]: Category A: $0 < B \leq 1$, Category B: $1 < B \leq 2$, Category C: $2 < B \leq 4$, Category D: $4 < B$. Product groups pertaining to Category A show a lack of comparative advantage, while those in Category B show a weak comparative advantage, to Category C average and to Category D a strong comparative advantage.

As far the B-index deals only with export, the Relative Trade Advantage (RTA) index (developed by Vollrath [1991]) also accounts for imports

$$(2) \text{RTA} = \left(\frac{x_{ij}}{x_{wj}} \right) / \left(\frac{\sum x_i}{\sum x_w} \right) - \left(\frac{m_{ij}}{m_{wj}} \right) / \left(\frac{\sum m_i}{\sum m_w} \right)$$

where m represents imports, while the rest represent the same as in the case of RXA. If $\text{RTA} > 0$, this reveals that a given country has a comparative advantage compared to focus countries - or, in contrast, a revealed comparative disadvantage. This index takes into consideration effects of demand as well as those of supply therefore it is closer to the comparative advantages approach than indices based on exports. Therefore in case of the Balassa index differs significantly from the RTA index the importance of the import is relevant in the trade of the examined country.

International and national literature interlinks the model of revealed comparative advantages with new streams of trade theories, allowing the execution of even deeper competitiveness analyses (Gehlhar-Pick [2002]). This approach stresses that price and quality competition in two-way trade is worth separating. To achieve this goal, the literature introduced a new concept: unit value difference (UVD), which is the difference between export and import unit values, defined as follows:

$$(3) UV_{xij} = X_{ij}/Q_{xij} \text{ and } UV_{mij} = M_{ij}/Q_{mij}, \text{ so } UVD_{ij} = UV_{xij} - UV_{mij}$$

where X means export, M means import, Q stands for quantity, i indicates products, and j indicates the partner-country. The formula above means that the difference of a product group's unit value can be defined (UVD) if import unit value (UV_{mij}) is deducted from export unit value (UV_{xij}); that is, export value achieved from a country's given product group (X_{ij}) is divided by export quantity (Q_{xij}), then divide import value (M_{ij}) by import quantity (Q_{mij}) and deduct the two values from each other. Trade balance (TB) can also be easily calculated from the formula above: ($TB_{ij} = X_{ij} - M_{ij}$), and is the difference between export and import values of a given product group running to/coming from the focus country.

By using the two new concepts (UVD and TB), the literature creates the following categories in order to separate price-quality competition (GP-index on the basis of Gehlhar-Pick, 2002):

Category 1 (successful price competition):

$$TB(i,j) > 0 \text{ (or } X(i,j) > M(i,j)) \text{ and } UVD(i,j) < 0 \text{ (or } UV_{(i,j)}^x < UV_{(i,j)}^m)$$

Category 2 (unsuccessful price competition):

$$TB(i,j) < 0 \text{ (or } X(i,j) < M(i,j)) \text{ and } UVD(i,j) > 0 \text{ (or } UV_{(i,j)}^x > UV_{(i,j)}^m)$$

Category 3 (successful quality competition):

$$TB(i,j) > 0 \text{ (or } X(i,j) > M(i,j)) \text{ and } UVD(i,j) > 0 \text{ (or } UV_{(i,j)}^x > UV_{(i,j)}^m)$$

Category 4 (unsuccessful quality competition):

$$TB(i,j) < 0 \text{ (or } X(i,j) < M(i,j)) \text{ and } UVD(i,j) < 0 \text{ (or } UV_{(i,j)}^x < UV_{(i,j)}^m)$$

In Category 1 the home country is successful in price competition while in Category 3 in quality competition (as we assume that price reflects quality). On the other hand in Category 2 and 4 the home country is unsuccessful in price and quality competition.

The four categories above are well able to separate what competitive position a country's product groups has from a price and quality point of view. It should not be forgotten that these categories implicitly refer to two-way and not one-way trade (the latter of which means just export or import from a product group). However, the role of one-way trade may be significant especially for trade between small countries (Bojnec and Fertő, 2007). Thus, we disentangle the one-way trade from the two-way matched trade. When the one-way trade occurs then the net direction of trade is either surplus or deficit. Therefore, for the one-way trade we distinguish the two possible one-way non-price competition categories, i.e. only one-way export category or only one-way import category, that occur when holds the following conditions (Bojnec and Fertő, 2007; 2011):

Only export category: $TB_{(i,j)} > 0$ (or $X_{(i,j)} > 0$, $M_{(i,j)} = 0$) and $UV_{(i,j)}^m = 0$

Only import category: $TB_{(i,j)} < 0$ (or $X_{(i,j)} = 0$, $M_{(i,j)} < 0$) and $UV_{(i,j)}^x = 0$.

In order to calculate the various indices mentioned above, the paper has used the EUROSTAT trade database (CN8) using eight digit breakdown, resulting in 5 categories for spirits distilled from fruits (Appendix I), and aggregated to two digit breakdown in order to identify the positions of traditional spirits inside the “beverages, spirits and vinegar” sector. The paper works with trade data from 2001-2009, providing a clearly basis for analysing the effects of EU accession. In this context, the EU is defined as the member states of the EU15.

Literature background

There is increasing literature on the competitiveness of the NMS (e.g. Banse et al. [1999], Eiteljörge-Hartmann [1999], Fertő [2004], Fertő and Hubbard [2003], Bojnec and Fertő [2007]). Previous research emphasises three main conclusions. First, the competitiveness of the external trade in the NMS has declined in the recent years, mainly caused by the increased

level of the competition in the enlarged common markets. Second, the level of competitiveness of the processed agricultural and food products is below of the level of the raw materials in the NMS,. Finally, there is a significant difference between the countries; the above mentioned tendencies not perfectly characterize them as a homogeneous group.

There has recently been expanding research carried out to analyse the economic impacts of geographical indicators. Some of them (Malorgio et al. [2007], Trevisan [2008], Trecho-Pech et al. [2010]) focused on the alcoholic PDO products. It could be concluded that nowadays this type of product differentiation gains a growing importance on the supply and on the demand side as well. On one hand, the producers consider geographical indication as one of the most important marketing tool. On the other hand there is a growing consumer attention and interest towards these products although they are situated rather in the higher price categories.

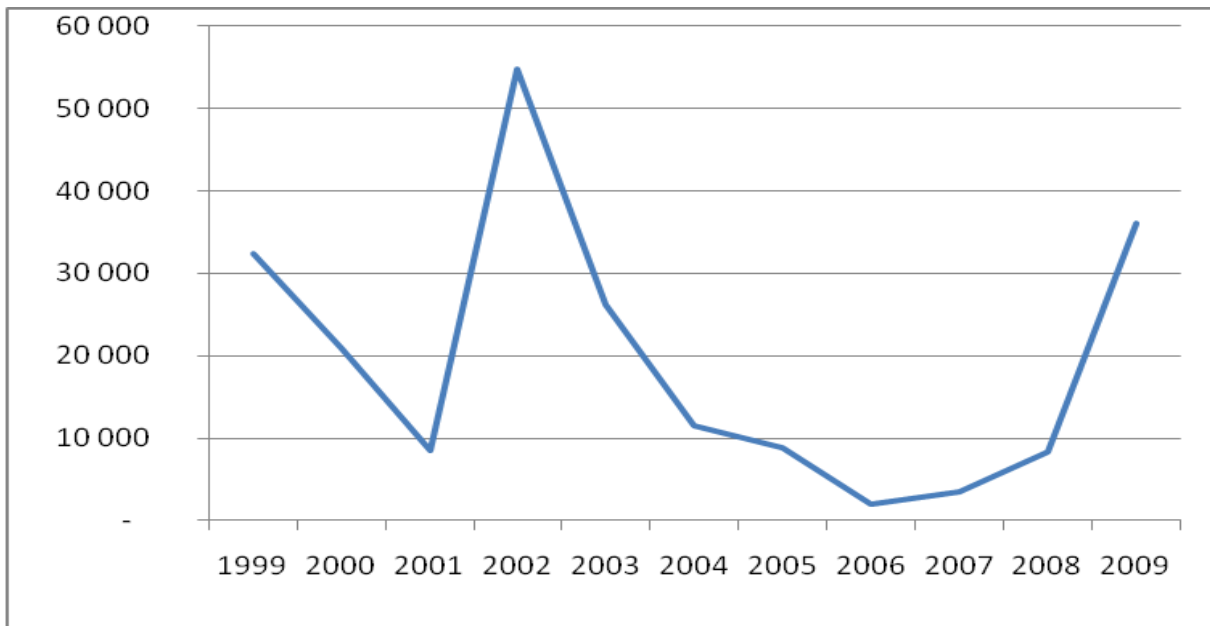
Analysing the importance of non-alcoholic food and agricultural products also plays a great role in the literature. The main topic of the Bologna EAAE seminar in 2007 was the marketing and trade of the traditional products. Many of the researchers (Teuber [2007], Scaramuzzi et al. [2007], Borch and Roaldsen [2007]) stressed the geographical indicators as factor of competitiveness.

The paper contributes to both literature on the trade competitiveness and the role of the PDO. The aim of this paper is to examine whether there is any comparative/competitive advantage for the *pálinka* coming from Hungary in the market of the old EU member states (EU-15). It is also focused on whether the accession to the European Union influenced the structure of the external trade of the fruit spirits of this county.

Results

The export value of the Hungarian *pálinka* with regards to the EU15 markets has shown great fluctuation throughout the selected period (Figure 3). This phenomenon is mainly caused by the volatility of the Hungarian fruit production; the amount of fruit produced in a year has a significant influence on the amount of the *pálinka* sold the next year. On the other hand, export quantity is almost non-comparable to the amount of spirit sold on the domestic market.

Figure 3 The value of exported Hungarian *pálinka* to the EU 15 markets [EUR]

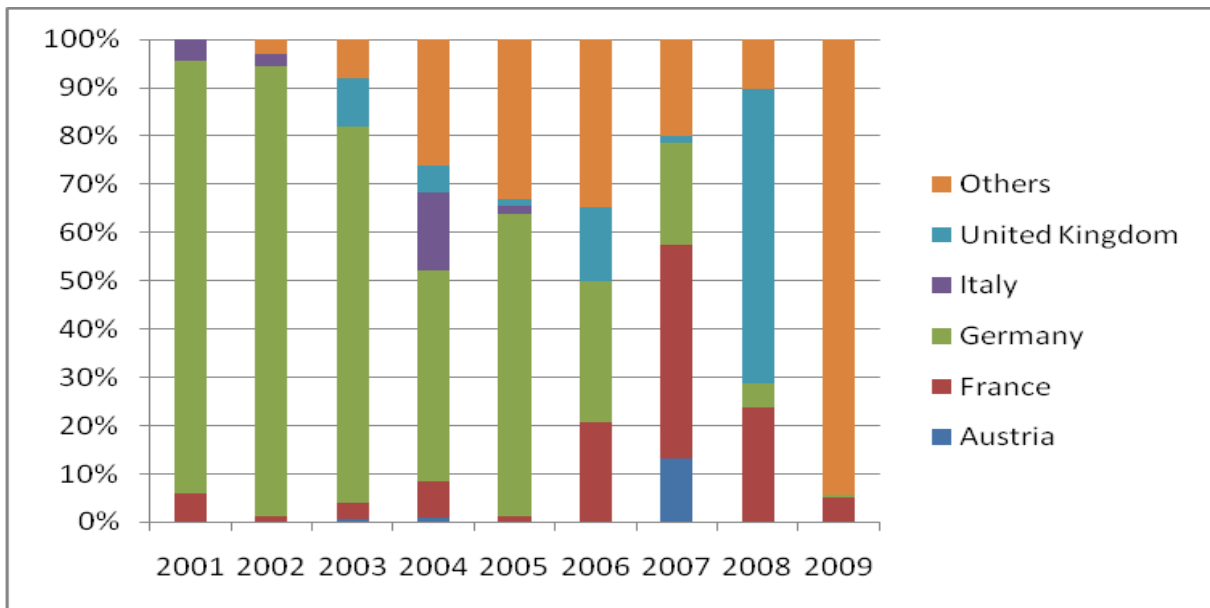


Source: Author's own composition based on EUROSTAT

In order to get a clear overview of the topic the international trade of the *pálinka* should be investigated. Based on the Eurostat it could be stated that the most important trade partner of Hungary are the EU15 countries.

Figure 4 indicates the most important target countries of the *pálinka* export. At the beginning of the selected time period Germany was the most important buyer of the Hungarian *pálinka*. In the recent years other countries became significant importing countries like France, United Kingdom and others.

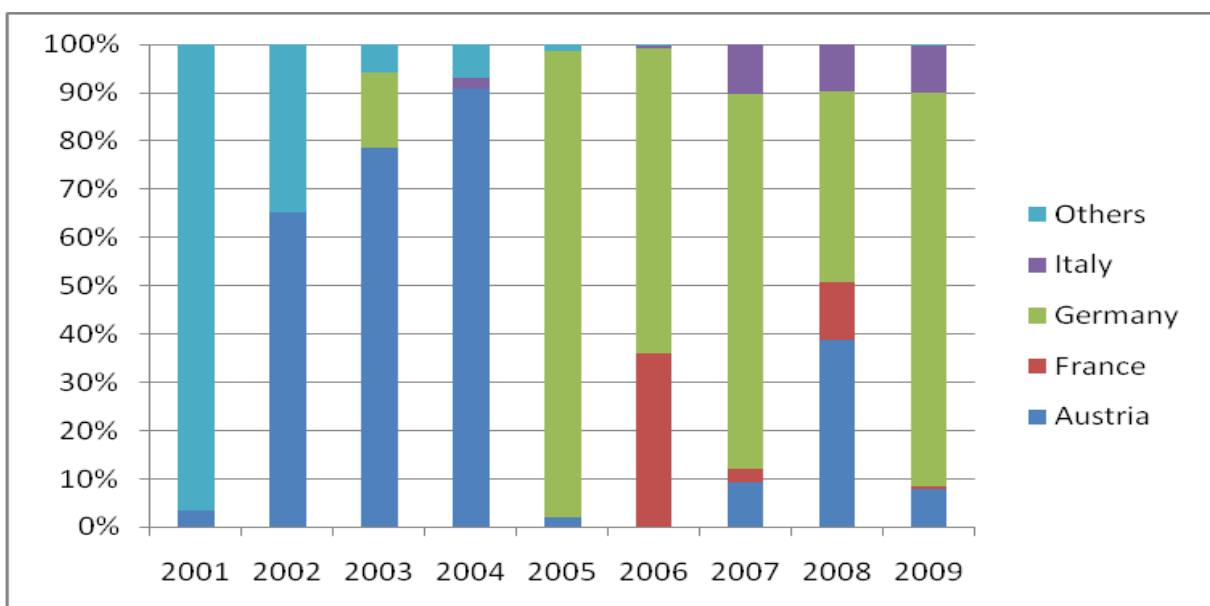
Figure 4 The share of the pálinka export to the EU15



Source: Author's own calculation based on Eurostat

Although the Hungarian pálinka is the most dominant fruit spirit in the domestic market and a growing quantity is exported, still there is a remarkable amount of imported fruit spirits. Similar to the pálinka export, the most important exporting countries are the Old Member States of the European Union, namely Austria and Germany. (Figure 5)

Figure 5 The share of the fruit spirit import coming from the EU15

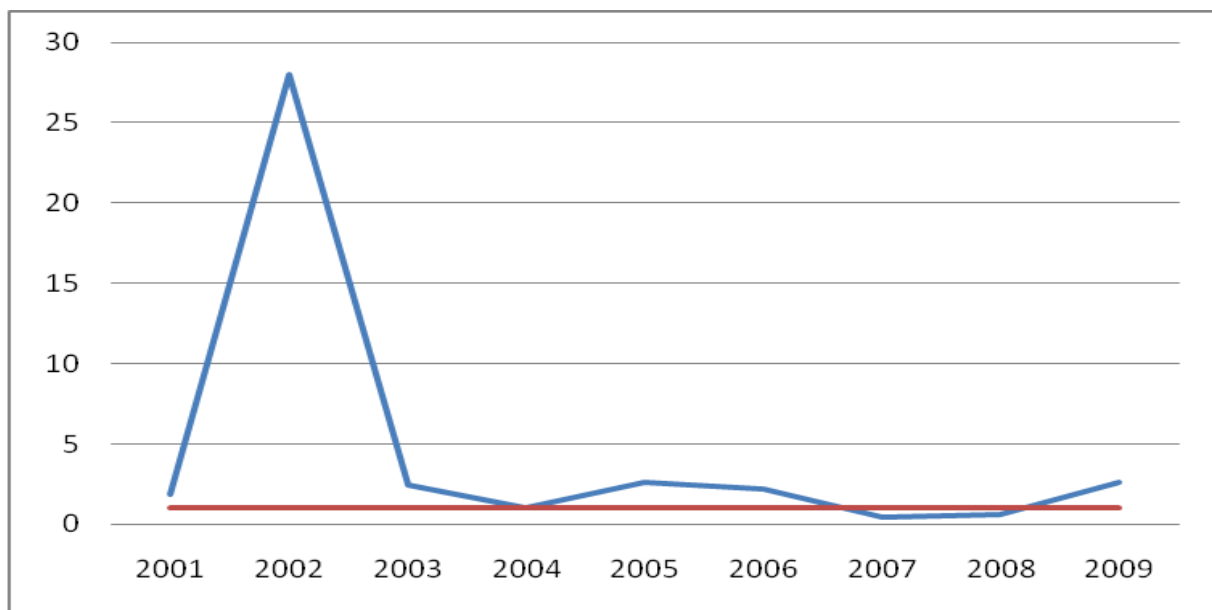


Source: Author's own calculation based on Eurostat

Therefore it could be stated that the most important trade partners of Hungary are the Germany speaking countries: Austria and Germany.

Part of the RCA indices the Balassa and the RTA calculations were made. Figure 6 indicates the results of the Balassa indices. The numbers show that except 2007 and 2008 the value of the indices exceeded the critical value ($B=1$). This means that in the majority of the the pálinka sector had a revealed comparative advantage. On the other hand, a worsening tendency could be observed, after the EU accession the average Balassa indices were lower than before.

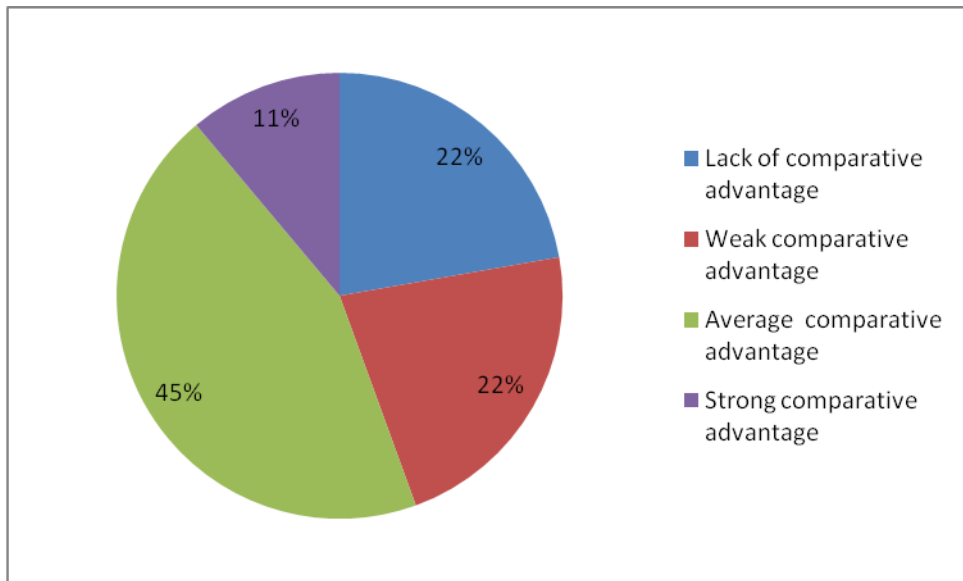
Figure 6 Balassa indices of the pálinka trade (2001-2009)



Source: Author's own calculation

In order to compare the several Balassa-indices the Hinloopen-van Marrewijk comparison was used. (Figure 7) In the selected time period of 2001-2009 the Hungarian pálinka sector had an average level of comparative advantage. After the EU accession the indices rather showed a weak comparative advantage or lack of comparative advantages. Finally, only in 2002 exceeded the Balassa-index the level of 4 indicating a strong comparative advantage.

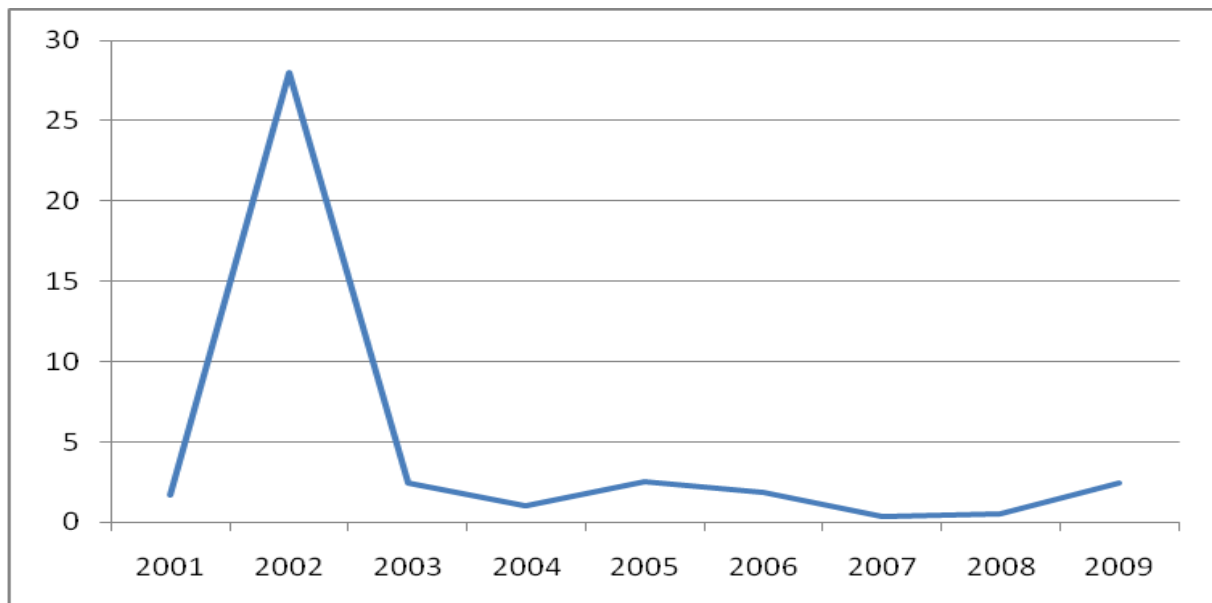
Figure 7 Comparison of the Balassa-indices



Source: Author's own calculation

As far the Balassa-index deals only with export, the RTA index also takes into account the role of import. The results of the RTA calculations are similar to the Balassa-indices (Figure 8) which means that the trade flows were symmetric: in years the export was increasing, the value of import was also following it.

Figure 8. RTA indices of the pálinka trade (2001-2009)



Source: Author's own calculation

Finally, the Gehlhar-Pick model was calculated in the selected time period. From the results (Table 2) it is clearly visible that year 2004 was a turning-point. Before the EU accession the pálinka producing sector was successful in price or quality competition, but afterwards it became unsuccessful in price or quality competition. It means that although the unit value of the exported goods were usually lower than the unit value of the imported goods, the trade balance changed to negative.

Table 2 Results of the GP model

2001	2002	2003	2004	2005	2006	2007	2008	2009
C	C	A	A	B	B	B	B	D

* A= successful price competition, B = unsuccessful price competition, C = successful quality competition, D = unsuccessful quality competition

Source: Author's own calculations based on EUROSTAT

Conclusions

During the last decade of the 20th century a boom started in the Hungarian pálinka sector. The quality of the product – after a 50 years long black period – reached the ancient role in the domestic market.

At the turn of the millennium the pálinka distilleries started selling their products not only on the domestic market but also on the export markets. The main target countries were the German-speaking countries: Germany and Austria.

The several calculation methods proved that the pálinka sector had a revealed comparative advantage on the international level, but a worsening tendency could be observed. The increased level of competitiveness had a great influence on the world market that after the EU accession the Hungarian producers had to face.

Therefore it could be stated that the most important market of the Hungarian pálinka is the domestic market but the export markets could also deal with growing importance. On both level the Protected Designation of Origin is a great tool for the product differentiation.

References

- ADDOR, F. - GRAZIOLI, A. [2002]: Geographical Indications beyond Wines and Spirits. *The Journal of World Intellectual Property*. Vol. 5. No. 6.
- BALASSA, B. [1965]: Trade Liberalization and „Revealed” Comparative Advantage. *The Manchester School*, Vol. 33. pp. 99–123.
- BANSE, M.–GORTON, M.–HARTEL, J.–HUGHES, G.–KÖCKLER, J.–MÖLLMAN, T.–MÜNCH, W. [1999]: The Evolution of Competitiveness in Hungarian Agriculture: From Transition to Accession. *MOCT–MOST*, Vol. 9. pp. 307–318.
- BOJNEC, S. – FERTŐ, I. [2008] Price Competition vs. Quality Competition: The Role of One-Way Trade. *Acta Oeconomica* 58. (1) pp. 61-89
- BOJNEC, S. – FERTŐ, I. [2009]: Determinants of agro-food trade competition of Central European countries with the European Union. *China Economic Review* 20. (2). 327-333
- BOJNEC, S. – FERTŐ, I. (2011) 'Complementarities of trade advantage and trade competitiveness measures', *Applied Economics*, First published on: 02 February 2011 (iFirst) URL: <http://dx.doi.org/10.1080/00036846.2010.508725>
- BORCH, O. J. – ROALDSEN, I. H. E. [2007]: Competitive positioning and value chain configuration in international markets for traditional food specialties. Paper presented at 105th EAAE Seminar, Bologna, Italy, March 8-10, 2007
- EITELJÖRGE, U. – M. HARTMANN [1999]: Central-Eastern Europe Food Chains Competitiveness in The European Agro-Food System and the Challenge of Global Competition, ISMEA, Rome
- FERTŐ, I. - HUBBARD, L.J. [2003]: Revealed comparative advantage and competitiveness in Hungarian agri–food sectors, *The World Economy*, 26, pp. 247–259.
- FERTŐ, I. [2004]: *Agri-Food Trade Between Hungary and the EU*, Századvég Publishing, Budapest, Hungary
- GEHLHAR, M. J. – PICK, D. H. [2002]: Food Trade Balances and Unit Values: What can They Reveal about Price Competition? *Agribusiness*, vol. 18, pp. 61–79.
- HINLOOPEN, J. – van MARREWIJK, C. [2001]: On the Empirical Distribution of the Balassa Index. *Weltwirtschaftliches Archiv*, vol. 137 pp. 1-35.
- MALORGIO, G. – CAMANZI, L. – GRAZIA C. [2007]: Effectiveness of European Appellations of Origin on the International wine market. Contributed Paper presented at the 105th EAAE Seminar, Bologna, Italy, March 8-10, 2007

- SCARAMUIZZI, S. – BELLETTI, G. – BURGASSI, T. – MANCO E. – MARESCOTTI A. – PACCIANI A. [2007]: The roles of geographical indications (PDO and PGI) on the internationalization process of agro-food products. Paper presented at the 105th EAAE Seminar, Bologna, Italy, March 8-10, 2007
- TEUBER, R. [2007]: Geographical Indications of Origin as a Tool of Product Differentiation: The Case of Coffee. Paper presented at the 105th EAAE Seminar, Bologna, March 8-10, 2007.
- TÖRÖK, Á. [2010]: The competitiveness of the Hungarian pálinka. The past, the present and the future. Lambert Academic Publishing, Saarbrücken.
- TREJO-PECH, C. O. – LÓPEZ-REYNA, C. – HOUSE, L. A. – MESSINA, W. [2010]: Appellation of Origin Status and Economic Development: A Case Study of the Mezcal Industry. IAMA 20th Annual World Forum and Symposium, Boston.
- TREVISAN, I. [2008]: The appellative “Denominazione geografica” in the marketing of grappa from Trentino. 4th International Conference of the Academy of Wine Business Research, Siena.
- VOLLRATH, T. L. [1991]: A Theoretical Evaluation of Alternative Trade Intensity Measures of Revealed Comparative Advantage. *Weltwirtschaftliches Archiv*, Vol. 130 (2) pp. 265–279.

Appendix I

Spirits distilled from fruits

22089033	Plum, pear or cherry spirit, in containers holding ≤ 2 l
22089038	Plum, pear or cherry spirit, in containers holding > 2 l
22089048	Spirits distilled from fruit, in containers holding ≤ 2 l (excl. plum, pear or cherry spirit and calvados)
22089051	Spirits distilled from fruit, in containers holding ≤ 2 l (excl. plum, pear or cherry)
22089071	Spirits distilled from fruit, in containers holding > 2 l (excl. spirits distilled from grape wine or marc, plum, pear or cherry)

Source: EUROSTAT, CN8 database