Slovak Spirits Industry and its Position on Domestic and International Markets

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DOI: https://doi.org/10.15414/isd2022.sP.01

Abstract
The Slovak spirits industry represents a stable part of the national food and beverage industry. Its position was determined as competitive on the national and international market by national authorities. The manuscript investigates the position of the industry on the domestic and international markets. Quantitative data relating to the number of enterprises and employment show positive change within the observed period of time. However, the production was basically on the same level in the last observed year 2018 compared to the year 2018. Our investigation of the domestic market shows a sign of premiumization of spirits produced within the Slovak Republic with a focus on vodka and spirits aromatized with Juniperus. The international trade with Slovak spirits shows decreasing competitiveness among the dominant categories. There were two of three main categories competitive on the European Single market while there was only one competitive category in the last observed year 2018.

Keywords: competitiveness, trade, the spirits industry

JEL Classification: L66, P33, Q17

1. Introduction
The Slovak spirit industry represents a traditional branch of the food and beverage industry within the Slovak Republic and almost any developed country in the world. The food and beverage industry represents the most important industry within the EU manufacturing sector (Fooddrinkeurope, 2019). The precise start of history is not clear in relation to this time. The mass production of spirits was determined to start in the 12th century (Hartmann and Schwarz, 2018). There were about 700 commercial distilleries on the territory of the Czech and Slovak Republic in the year 1848 (Nydrle, 1920). A decrease in the number of distilleries was apparent from the year 1945 when the collective ownership introduced by the Communist party in the year 1945 took its consequences.

The global spirits industry represents about one-third of the global alcoholic beverages industry whose revenues are projected to reach 1665.7 bln USD in 2021 (Statista, 2022). The spirits industry plays an important role within the EU territory when it achieved revenues of 29.6 bln EUR in the year 2018 (Eurostat, 2022). The European spirits industry is composed of 7 411 enterprises and 61 144 employees (Eurostat, 2022).

The spirits industry has been identified as one of the “competitive” branches by the Ministry of Agriculture of the Slovak Republic in its “Concept of development of the Food Industry 2014-2020” (Ministry of Agriculture of the Slovak Republic, 2014).
To determine the position of the Slovak spirits industry we have decided to focus further research on this industry, including its domestic and international position within the territory of the EU.

2. Data and Methods

The research aimed at national and international data and its use within its own calculations. The national data were collected by the Statistical Office of the Slovak Republic and the Research Institute of Agricultural and Food Economics (Resort statistics – results of agriculture and food commodities). Eurostat database (structural business statistics and international trade database) was used to investigate international trade with Slovak spirits. To determine the international trade we focused on the main partner in the form of the EU.

The investigated period was from 2009 to 2018. We have decided to focus on the period of ten continuous years to determine basic dynamics within the Slovak spirits industry.

The research object were spirits and their individual categories according to the binding classification set by the Regulation (EU) 2019/787 of the European Parliament and of the Council of 17 April 2019 on the definition, description, presentation and labelling of spirit drinks, the use of the names of spirit drinks in the presentation and labelling of other foodstuffs, the protection of geographical indications for spirit drinks, the use of ethyl alcohol and distillates of agricultural origin in alcoholic beverages, and repealing Regulation (EC) No. 110/2008. Within the international trade, we focused on categories of spirits within HS2,4,6 and CN8 classification. Classification refers to the Combined Nomenclature based on the Council Regulation (EEC) No. 2658/87 of 23 July 1987 on the tariff and statistical nomenclature and on the Common Customs Tariff. The territory relating the international trade was restricted to the European single market of the EU as the dominant partner of the Slovak spirits industry. The focus was on the following nomenclatures:

- 220830 – Whiskies
- 220870 - Liqueurs and cordials
- 220890 - Ethyl alcohol of an alcoholic strength of < 80% vol, not denatured, spirits and other spirituous beverages.

Our calculations were also enhanced by measuring the comparative advantage of selected categories of spirits. These calculations were based on the Balassa (1965) index which set the bottom line for measuring international competitiveness many years ago. The basic formula can be written in the following form:

$$ RCA_{ai} = \left( \frac{x_{ai}}{x_{am}} \right) / \left( \frac{x_{ai}}{x_{im}} \right) \ [1]$$

Where:

X- represents the export and subscript m refers to combined exports,

a - refers to a particular product,

i - refers to a particular country,

c - refers to all observed countries.

The further development of competitiveness measurement has led to various modifications of this Balassa index (Bowen, 1983; Vollrath, 1991; Yu, 2008). We have used a modified form of the Balassa index first introduced by Vollrath (1991). The revealed comparative advantage
is calculated based on the relative export advantage and relative trade advantage. The basic formulation can be written in the following form:

- **RXA** – relative export advantage
  
  \[ RXA^i_a = \left( \frac{x^i_a}{x^r_a} \right) / \left( \frac{x^r_a}{x^r_r} \right) \]  
  \[ [2] \]

- **RTA** – relative trade advantage
  
  \[ RTA^i_a = \left( \frac{M^i_a}{M^r_a} \right) / \left( \frac{M^r_m}{M^r_m} \right) \]  
  \[ [3] \]

- **RCA** – revealed comparative advantage
  
  \[ RCA^i_a = \ln(RXA^i_a) - \ln(RTA^i_a) \]  
  \[ [4] \]

Where:
- **X** - represents export,
- **M** – refers import,
- **i** - refers to selected country,
- **r** – refers to all countries (except the country i),
- **a** – refers to a specific product,
- **n** – refers to all products (except the product a).

The RCA index divides the object of research into two directions. Values with RCA > 0 represent competitive categories of the Slovak spirits industry. Values with RCA < 0 represent categories of the Slovak spirits industry with competitiveness disadvantage.

3. Results and Discussion

We have investigated the changes within the Slovak spirits industry from two individual angles. The research was first oriented on the dynamics within the Slovak spirits industry on the domestic market between the years 2009 and 2018. The Slovak spirits industry has a stable and important role within the international trade of the country related to the food industry. Thus, to gain a complex view of the Slovak spirits industry, we also conducted an investigation of the industry concerning the European single market of the EU.

3.1 Dynamics within the Slovak spirits industry on the domestic market

The spirits industry represents a traditional branch of the food and beverage industry within probably all countries of the world. The Slovak Republic has also a relatively stable situation within this branch of the national food and beverage industry.
Table 1: Number of enterprises and employment within the Slovak spirits industry between years 2009 and 2018

|          | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 | 2017 | 2018 |
|----------|------|------|------|------|------|------|------|------|------|------|
| Persons employed | 624  | 575  | 622  | 700  | 619  | 773  | 748  | 776  | 864  | 880  |
| Number of enterprises | 43   | 88   | 103  | 85   | 103  | 107  | 101  | 112  | 108  | 119  |

Source: EUROSTAT, processed by the author

Our investigation proves this hypothesis if we compare the employment and number of enterprises. We see growth both in the number of employees and number of enterprises within the Slovak spirits industry during the observed years 2009 and 2018. During the ten observed years, we observed a growth of 41.03% in the number of employees despite some slighter decrease in the year 2010, 2011 and 2013. Even higher change was observed in the number of enterprises. According to the data available by the EUROSTAT, the number of enterprises almost tripled (2.76x) between the years 2009 and 2018. If we compare registrations of new enterprises within the Slovak spirits industry published by the Ministry of the Agriculture and Rural Development of the Slovak Republic, we see clearly that this significant change was caused by a high number of new registrations of small fruit distilleries. This positive dynamic influences the competitiveness of the industry when new, modern and flexible companies are entering the market pursuing on many occasions a higher quality transparency of products.

Figure 1: Production (liters) within the Slovak spirits industry between years 2009 and 2018

Source: EUROSTAT, processed by the author
The spirits production within the Slovak Republic achieved two opposite trends. First, we observed a sharp decline in spirits production between the years 2009 and 2010. This negative trend may be a result of the financial crisis that started in late 2008 and had its consequences for many industries within the EU countries from the year 2010. The decline in the production of spirits is also supported by the decrease in the number of employees within the Slovak spirits industry in the year 2010. The spirits production remained at the lower production rate until the year 2015. After this year we see a definitive positive pathway in production growth lasting until the last observed year 2018. Despite this growth in production towards the end of our observations, it was not enough to bring the production to the level that was achieved in the year 2009. The production of spirits within the Slovak spirits industry was at 17 004 295 liters in the year 2018, missing 370 350 liters to qual the production from the year 2009.

Table 2: Most important types of spirits produced within the Slovak spirits industry (thsd. liters)

|            | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 | 2017 | 2018 |
|------------|------|------|------|------|------|------|------|------|------|------|
| Vodka      |      |      |      |      |      |      |      |      |      |      |
|            | 436  | 404  | 427  | 448  | 497  | 518  | 515  | 533  | 567  | 616  |
| Spirits aromatised with Juniperus |      |      |      |      |      |      |      |      |      |      |
|            | 352  | 271  | 331  | 324  | 322  | 328  | 347  | 353  | 340  | 361  |
| Liquers    |      |      |      |      |      |      |      |      |      |      |
|            | 665  | 414  | 448  | 440  | 406  | 476  | 411  | 695  | 481  | 482  |

Source: EUROSTAT, processed by the author

The higher observed production volatility within the Slovak spirits industry was not uniform within all types of spirits. Our observations show changes in both directions within individual types of spirits when investigating the production.

The most important type of spirit produced within the Slovak Republic is vodka. This type of spirits also made a decline when comparing trends between the years 2009 and 2010. If we follow our investigation in next years, we clearly see an opposite trend. Vodka experienced a relatively gradual growth in terms of production within the Slovak spirits industry. Its growth caused a change in the production of 41.38% when comparing production from the years 2009 and 2018.

The second-largest category is represented by spirits aromatised with Juniperus. This category represents traditional spirits very popular in the country explaining its relatively high production. Opposite to the vodka production, there was a different pathway observed within this category of spirits during our investigations. If we compare the first and last year of our research period, we determine only 2.76% growth in the production. There was also a substantial drop of 22.93% in production between the years 2009 and 2010.

The third-largest category of spirits produced by the Slovak spirits industry is the category of liqueurs. This category already shows the lower influence on the total production of spirits in the country when the production was almost thirteen times lower compared to the production of vodka in the year 2018. Its change in production was similar to the change already observed within the category of spirits aromatised with Juniperus between the years 2009 and 2010. The production dropped by 37.74% between these two years. The actual rate of the decline was the highest from all the three investigated categories. In opposite to the category of spirits aromatised by Juniperus, this category was not able to recover from this decline. The category of liqueurs experienced the highest decline in production of 27.52% between the years 2009 and 2018.
Figure 2: The production value and value added at factor cost (mil. EUR) within the Slovak spirits industry between years 2009 and 2018

Source: EUROSTAT, processed by the author

The production value represents only one quantitative side of the Slovak spirits industry. There is a continuous change within the industry when many sources refer to the premiumization of the spirits production (https://bevalcinsights.com/how-the-premiumization-trend-will-impact-retail/, https://spirits.eu/a-spirit-of-innovation/premiumisation-brand-elevation, https://www.rankincork.co.uk/the-future-of-the-drinks-industry-how-premiumisation-is-changing-the-way-we-drink-and-vice-versa/).

This abovementioned trend can be identified also within the Slovak spirits industry. While the production of spirits declined by 2.13% between the years 2009 and 2018, the total value of spirits production grew by 35.08%. This disproportion between the production itself and the value in EUR clearly shows that the Slovak spirits industry experienced premiumization of its production during the investigated period of time.

Even more evident proof of the abovementioned statement can be documented by the investigation of the value-added at the factor cost. It has achieved a positive change (2.83%) between the years 2009 and 2010 despite a decline in production (-14.10%) and production value (-7.85%) within the same period of time. If we compare the value added at factor cost between years 2009 and 2018, we observe a growth of 80.19%. This is the most significant change within the Slovak spirits industry declaring a clear pathway in direction of better quality products production.
3.2 Slovak spirits industry and its position on the European single market of the EU

The second part of our research was oriented on the international trade with products of the Slovak spirits industry. We have investigated the export and import of the industry including a more detailed investigation of the international trade with the most important types of spirits. We have conducted also a more detailed analysis of the three most important types of spirits in relation to their share of the total international trade.

![Figure 3: The Export and import value of the Slovak spirits industry between years 2009 and 2018](chart.png)

*Source: EUROSTAT, processed by the author*

First, we have compared the export and import value of the Slovak spirits industry as a whole. As shown in figure 3, international trade with spirits has a negative trade balance. The negative trade balance continued during the whole period of time but the percentual increase was only in the amount of 9.37%. A positive sign in international trade with spirits can be determined by the analysis of the import and export values. The import value shows an increase of 99.93% but the export value has increased by 8.16-times. The increase in export value shows a positive trend within the Slovak spirits industry on the European single market of the EU.
The most important type of spirits was the category of liqueurs and cordials (nomenclature 220870), if we compare export values in years 2009 and 2018. The growth of export value was higher 6.4x in the year 2018 compared to the year 2009, representing a gain of 10,260,946 EUR. This is the most significant gain in export value among all investigated categories of spirits between the years 2009 and 2018. The highest export growth can be seen from the year 2014 onwards (see Figure 4).

The second most important category of spirits relating the export value were spirits listed under nomenclature 220890 (Ethyl alcohol of an alcoholic strength of < 80% vol, not denatured; spirits and other spirituous beverages). This category is represented by various spirits that can not be clearly assigned to any dedicated category. The export value grew 3.85x between years 2009 and 2018 representing a change in export value of 3,229,196 EUR. This category also outperformed the category of liqueurs and cordials in the years 2012, 2013 and 2014.

The third-largest share on the export of spirits can be assigned to the category of whiskies (nomenclature 220830). This category experienced the most significant change in terms of percentual change when the export value grew 85.55x. The change in the export value was in the amount of 3,972,095 EUR. The nomenclature 220830 experienced the highest percentual change and the second-highest change in total export value if we compare export values between years 2009 and 2018.

Figure 4: The export value of the three most important spirits within the Slovak spirits industry between years 2009 and 2018
Source: EUROSTAT, processed by the author
We have observed a diverse situation within the import structure of spirits compared to the already investigated export structure. The most important category of imported spirits is represented by the nomenclature 220890 (Ethyl alcohol of an alcoholic strength of < 80% vol, not denatured; spirits and other spirituous beverages). This category of imported spirits lost its dominant position only in the year 2016 when it was overtaken by the liqueurs and cordials category by a small margin (623 350 EUR). The import value of this category of spirits grew by 28.6% between the years 2009 and 2018 representing an incline of 4 099 033 EUR. This percentual change was significantly lower compared to the change in export. Despite this fact, the total growth in value was higher compared to the export value (difference of 869 837 EUR).

During the observed period of time, there was a change between the second and the third most imported type of spirits. The whiskies category (nomenclature 220830) has been able to overtake the category of liqueurs and cordials between the years 2009 and 2018 (see Figure 5). The import value grew 3.81x representing an incline of 10 502 730 EUR. This change in value is the most significant increase among all imported categories of spirits.

The third place in imports was represented by the category of liqueurs and cordials. This category grew by the second slowest pace from all three most important categories relating to the import value. This category, registered under nomenclature 220870, grew 1.96x between the years 2009 and 2018. This percentual change represents an incline of 6 497 116 EUR within the investigated period of time.

Figure 5: Import value of the three most important spirits within the Slovak spirits industry between years 2009 and 2018
Source: EUROSTAT, processed by the author
Table 3: Revealed comparative advantage of the three most important types of spirits relating export and import within the Slovak spirits industry within the years 2009 and 2018

|                | 2009  | 2010  | 2011  | 2012  | 2013  | 2014  | 2015  | 2016  | 2017  | 2018  |
|----------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 220830         | -2,15 | -3,77 | -1,72 | -7,26 | 0,50  | -1,50 | 0,14  | 0,09  | -0,26 |       |
| 220870         | 1,77  | 1,70  | 1,29  | 1,02  | 0,57  | 0,58  | 0,99  | 0,87  | 0,91  | 1,28  |
| 220890         | 0,27  | 0,10  | 0,34  | 0,68  | 1,05  | 0,22  | 0,53  | 0,53  | 0,16  | -0,34 |

Source: EUROSTAT, calculated by the author

The last part of the investigation was the estimation of the revealed comparative advantage of the three most important categories of spirits regarding international trade. We have calculated the data using the modified Balassa index. Our calculations show a significant change in the competitiveness of investigated spirits categories. Two of the three investigated categories (nomenclature 220870 and 220890) had a positive value of the RCA index in the year 2009. The highest-ranking was achieved by the nomenclature 220870 representing the category of liqueurs and cordials in the year 2009. There was only one category of spirits that was able to achieve a positive value of the RCA index in the year 2018. The category of liqueurs and cordials was the only category with a positive RCA value in the year 2018. However, there was a significant inconsistency between individual years.

The nomenclature 220890 (Ethyl alcohol of an alcoholic strength of < 80% vol, not denatured; spirits and other spirituous beverages) achieved a negative RCA value in the year 2018. It was the highest negative value among all three compared types of spirits categories in the last observed years. Despite this fact, it remained a category of spirits with a positive revealed comparative advantage until the last investigated year 2018.

The last category, observed by our research, was the nomenclature 220830 referring to the category of whiskies. This category of spirits had a negative value of the RCA index as the only type of spirits within our group of spirits in the year 2009. This negative value was observed during most of the time during the years 2009 and 2018. In fact, it only was able to achieve a positive value of the calculated index in the years 2014 and 2017. Despite the negative value of the RCA index in the last observed year, it is a positive sign that this category of spirits was able to achieve a decline in the negative value of the index.

4. Conclusion

The research activity of the Slovak spirits industry was aimed both at the domestic and international market represented by the European single market of the EU. Different aspects influencing the overall condition of the industry were examined.

We have observed in detail the number of enterprises, employment and production within the Slovak spirits industry on the domestic market. The industry achieved a positive change in the number of enterprises (growing 2.76x) and the number of employees (growth of 41.03%). Despite these changes recorded within the Slovak spirits industry, the overall production declined by 2.13% (370 350 liters) between the observed years 2009 and 2018. We have experienced a significant dynamics within various categories of spirits during investigated years. The category of vodka and spirits aromatised with Juniperus represent more than half of the overall production. Vodka has experienced the highest dynamics between the years 2009 and 2018 when the increase in production was 41.38%.
We have identified also a sign of premiumization of the production when the production value grew by 35.08% despite the mentioned decline in the overall production of 2.13% within the investigated period of time.

The second part of our research was aimed at the international trade of the Slovak spirits industry. Both export and import grew substantially during investigated years while the export significantly outperformed the import value (growing 8.16x). Nevertheless, the import still dominated in the last observed year 2018. The highest dynamics has been observed within the category of liqueurs and cordials (growing 6.4x between years 2009 and 2018). On the other hand, imports have grown substantially within the category of whiskies (growing 85.55x) within the same period of time. The examination of the export and import structure revealed that on both sides are apparent the same categories of spirits. Thus, we have focused our research to unfold the position of these categories on the European single market of the EU. This research activity has shown that there was a negative quantitative development in the competitive types of spirits. When using the modified Balassa index we have determined two out of three investigated categories of spirits in the year 2009. There was only one competitive category of spirits on the European single market of the EU in the year 2018. Thanks to the significant increase in export could the category of liqueurs and cordials achieve a positive value of the RCA index (1.28 in 2018 compared to 1.77 in 2009) also in the last investigated year.

Acknowledgements

This paper was prepared with the support of the Erasmus+ Jean Monnet project “Centre of Excellence for European Agri-Food Chain—CEEAG” No. 611446-EPP-1-2019-1-SK-EPPJMO-CoE. The European Commission support for the production of this publication does not constitute an endorsement of the contents, which reflect the views only of the authors, and the Commission cannot be held responsible for any use which may be made of the information contained therein.

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