



## COMPETITIVENESS OF AGRI-FOOD FOREIGN TRADE IN CONDITIONS OF THE SLOVAK REPUBLIC

*Anna Látečková, Michaela Trnková, Jozef Palkovič, Ivan Holúbek*

### ABSTRACT

The presented paper aims to evaluate the development and competitiveness of agri-food foreign trade of the Slovak Republic for the period 2016 – 2020. In the article, we present the priorities of Slovakia within the commodity structure. We use the RCA indicator to identify comparative advantages. In this paper, we also compare the actual and estimated development of agri-food foreign trade of the Slovak Republic in the years 2018 – 2020. Based on the reached results, we can state that we achieve an ever-increasing trade balance deficit in agri-food foreign trade. Produced results confirmed all the research assumptions presented in the paper. Despite the increase in export and import of agri-food products, the negative trade balance is still deeper. A significant deviation of real development from the predicted values can be explained by the influence of the worldwide pandemic of the coronavirus COVID-19, which slowed down the possible further development of agricultural trade.

**Keywords:** agri-food foreign trade; commodity structure; competitiveness of agri-food foreign trade; time series analysis

### INTRODUCTION

Competitiveness is a concept that has attracted a great deal of attention from economic theorists for decades. This concept is still not clearly defined due to its complexity and different perceptions (Šegota, Tomljanović and Hušek, 2017).

The issue of competitiveness is constantly the subject of various researches and there are several definitions in various professional publications. The individual definitions of competitiveness are based on:

- the relationship between competition and competitiveness,
- the links between performance and competitiveness,
- understanding of competitiveness at the level of country, industry, enterprise, product, and the like (Kadárová and Janeková, 2019).

Under the term competitiveness, we mean the ability of a certain economic entity to participate in the competition with similar economic entities (Fabová, 2015).

In foreign countries, competitiveness is one of the most popular topics in the economic analysis of various business activities carried out by market players. This is mainly due to the general intensification of international and internal competition over the last few decades (Borodin, 2006).

For the present, global changes are characteristic, the scope and pace of which are constantly increasing. Interdependence and interconnectedness between countries are increasing, and the volume of international transactions

is growing. Significant international trade promotion organizations are being set up to remove obstacles and facilitate international exchanges between countries. International trade is constantly evolving and is becoming increasingly important for countries.

The main reasons for the emergence of foreign trade include climatic conditions, production conditions, consumer preferences, economies of scale, and absolute and comparative advantages (Jurečka, 2011).

The movement of goods between countries is the oldest form of international economic relations. The growing exchange between countries leads from isolated national markets to the creation of a world market - to the emergence of world trade (Tuleja, Nezval and Majerová, 2012).

Information on the commodity structure of foreign trade provides a basic overview of the nature of foreign trade, while it is important to observe changes in the structure of imports and exports (Spěváček et al., 2016).

The trade balance expresses the movement of goods and services across national borders. It is given in monetary units and most often, it is monitored over one year (Michník et al., 1998).

A deficit between exports and imports of goods and services, otherwise known as a deficit of trade balance, where imports predominate over exports, could mean that a country imports more to increase productivity, which ultimately leads to more exports. This could ultimately finance the deficit reduction. The deficit may also stem from

an increase in foreign investment and an increased obligation on the local economy to pay the return on investment. However, foreign investment can also have a positive impact on the local economy, and if used wisely, it can increase market value and production for the country's economy in the future. This may allow the local economy to eventually increase exports and reverse its deficit again. A deficit is not necessarily a bad thing for a country's economy, especially for an economy in development or reform. The economy sometimes has to spend money to make money. If a country wants to run a deficit on purpose, the economy must be prepared to finance this deficit (Heakal, 2021).

### Scientific hypothesis

The main goal of the proposed paper is to evaluate the development and competitiveness of agri-food foreign trade in the Slovak Republic for the period 2016–2020. To meet it, we have set the following partial goals:

- analysis of the development of exports and imports of agri-food foreign trade,
- analysis of the commodity structure of agri-food foreign trade,
- forecast of further development of exports and imports of agri-food foreign trade,
- impact of the change in export and import conditions in 2020 through a comparison of actual and forecasted values,
- formulation of recommendations for foreign trade activities of the Slovak Republic in the next period.

Following the set partial goals, the following research hypotheses were formulated:

H1: Based on the forecast of the trend of the further development, we assume an increase in exports and imports in the foreign agri-food trade of the Slovak Republic in the next period.

H2: Despite the expected increase in exports and imports in the next period, we expect further deepening of the passive balance of foreign agri-food trade in the Slovak Republic.

H3: We assume that the actual development of exports and imports of foreign agri-food trade in 2020 will be lower than the values forecasted based on its trend.

### MATERIAL AND METHODOLOGY

In the presented paper, we evaluate the agri-food foreign trade of the Slovak Republic for the period 2016–2020 based on numerical data obtained from the website of the Statistical Office of the Slovak Republic. We will use mathematical-statistical methods, graphical method, comparison, analysis, and synthesis to solve the problem. Percentage results will be rounded to two decimal places for more accurate interpretations.

We will also calculate and evaluate the well-known indicators of foreign trade according to Kuzmišín P. et al. (2010):

$$\text{Turnover} = \text{export} + \text{import}$$

$$\text{Trade balance} = \text{export} - \text{import}$$

$$\text{Active trade balance} = \text{export} > \text{import}$$

$$\text{Passive trade balance} = \text{export} < \text{import}$$

The comparative advantage indicator

$$RCA = \ln \left[ \frac{(EC/IC)}{(CAEC/CAIC)} \right]$$

where:

EC – commodity export

IC – commodity import

OAEC – overall agro export of the country

OAIC – overall agro import of the country

RCA > 0 – comparative advantage

RCA < 0 – comparative disadvantage

Based on the obtained and processed data, we will create tables and graphical presentations, which will provide us with better insight into the analyzed topic.

### Statistical analysis

In this paper, we will compare the actual and estimated development of agri-food foreign trade in the Slovak Republic in the years 2018 – 2020. We followed up on the results of the research, which was part of the scientific work of the author Michaela Trnková. In this paper, a decomposition approach was applied to a time series analysis. For a more accurate estimate, data from 2000 to 2017 were collected in a time series. In 2017, we worked with preliminary data obtained from the Statistical Office of the Slovak Republic. Matejková, Pietriková and Poláková (2015) stated that in a time series, the values were arranged chronologically over time.

The principle is to understand the mechanism through which the observed data are generated and based on which the future values are predicted. A decomposition approach was used to predict the time series. The time series were decomposed into individual components that were predicted. Given that the analysis was based on annual data, the forecast was based on an extrapolation of the further development of the trend function. The most suitable function for the trend forecasting was evaluated based on the R-Squared indicator (a coefficient of determination). The trend captures the changes that have occurred in the average behavior of the time series in the long run. The forecast, therefore, expresses the expected further development of the time series values in case that the indicator continues in the current trend. From all the possible functions that were estimated for forecasting, the most accurate trend function expressing the development of exports was the power function, which has the form:

$$y_j = b_0 * t_j^{b_1}$$

The development of imports was most accurately expressed by a linear function in the form of:

$$y_j = b_0 + b_1 * t_j$$

where:

b<sub>0</sub> – locating constant,

b<sub>1</sub> – regression coefficient,

y<sub>j</sub> – j-th value of the dependent variable,

t<sub>j</sub> – j-th value of the independent variable.

RESULTS AND DISCUSSION

Agricultural development depends increasingly on integration into the global economy. International trade, including food trade, is a link for the economies of different countries, a point of their political and economic convergence. The turnover of food and agricultural raw materials has a special place in international trade because domestic food adequacy and the ability to sell surplus food on foreign markets characterize not only the country's level of food independence but also the qualitative structure of its foreign trade (Maslova, Chekalin and Avdeev, 2019).

The Slovak Republic is a small country, both in Europe and globally. Slovakia's agri-food foreign trade does not have an important position for these countries. It is therefore important for the Slovak Republic to engage in international trade (Podolák et al., 2007).

According to Tong Soo (2013), the benefit of exports for smaller countries, which is also the case of Slovakia, is always higher compared to larger countries.

The share of agri-food foreign trade in total foreign trade fluctuated in the period under review. We recorded both growth and decline, but there were no major deviations from the average, which was 4.98%. In 2016, the share of agri-food foreign trade in total foreign trade was 5.11%. The lowest share was in 2018 – 4.71%. In 2020, the highest share was recorded – 5.35%. We can state that the position of agri-food commodities within the total foreign trade was strengthened especially in 2020 when the territory of our country was also hit by the global pandemic of the coronavirus COVID-19.

In the observed period of 2016 – 2020, the agri-food sector of the Slovak Republic exported goods with an average value of 2 931 million eur per year. The total agri-food export in 2016 was at the level of 2 827 million eur. In the observed period, it also represented the lowest value of exports. In 2020, it was 3 136 million eur, which represented an increase compared to 2016 by 309 million

eur, in relative terms by 10.93%. In the observed period, it also represented the highest value of exports.

Import in the agri-food foreign trade of the Slovak Republic in the observed period reached an average annual value of 4 485 million eur. The lowest value of imported agri-food products was in 2016, amounting to 4 104 million eur. In 2020, we recorded the highest value of imports, which amounted to 4 831 million eur. Compared to 2016, it increased in absolute terms by 727 million eur, which in relative terms represents an increase of 17.71%.

The value of imports is almost more than double that of exports. This is a long-term trend, which is confirmed by Smutka, Rovný and Hambálková (2016) in their research.

The turnover of agri-food foreign trade developed similarly to exports. In 2016, it was at the lowest level, amounting to 6 931 million eur. In 2020, it reached its highest value of 7 966 million eur. The increase compared to 2016 was 1 035 million eur, i.e. 114.93%.

In the period 2016 – 2020, the average annual trade balance deficit of agri-food foreign trade amounted to 1 554 million eur. From year to year, this average deficit increases. Imports are growing faster than exports. In 2016, the balance of agri-food foreign trade was at the lowest level of 1 277 million eur. We recorded the highest value in 2020 when it reached the amount of 1 695 million eur. Compared to 2016, this trade balance deficit increased by 418 million eur, which represents an increase of 32.73%.

The commodity structure of the agri-food foreign trade of the Slovak Republic is constantly changing. These changes are caused by fluctuating development of the domestic market, but also of the foreign markets.

The negative balance is increasing and poses a major threat that affects the competitiveness of domestic products in domestic and foreign markets (Récky and Hambálková, 2014).

We divide agri-food foreign trade into trade in agricultural products and trade in food products. Food products have the

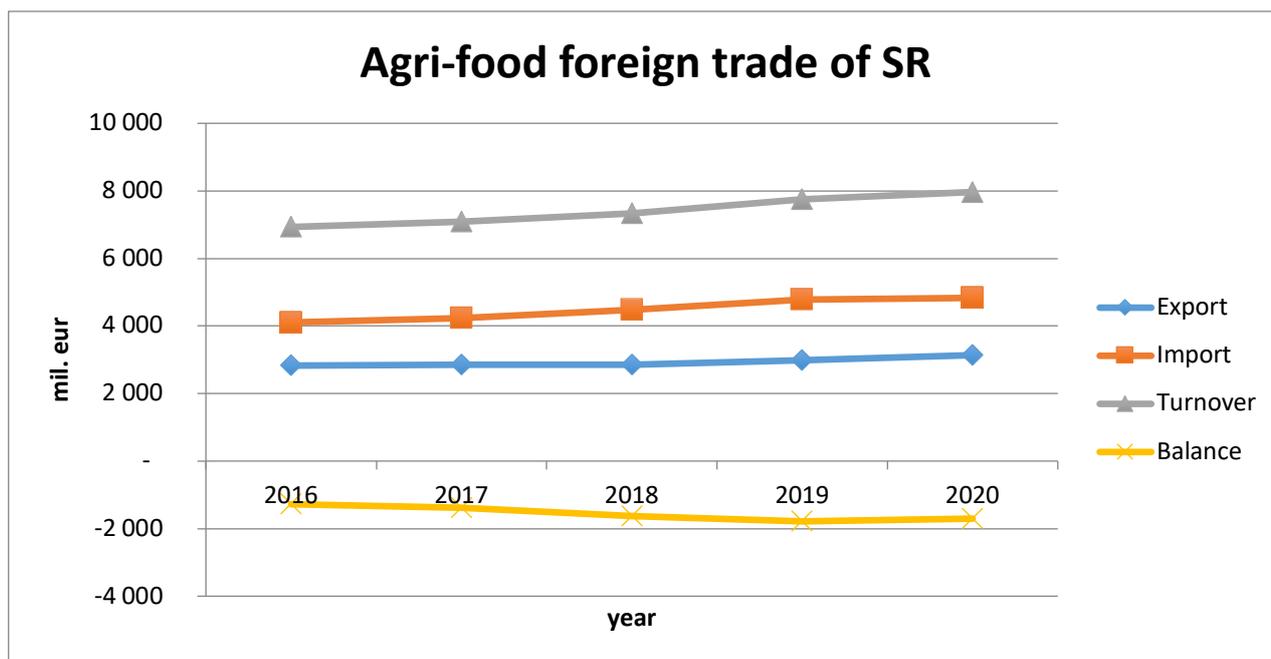


Figure 1 Agri-food foreign trade of SR in the years 2016 - 2020 in mil. eur. Source: own calculation according to Statistical office of the Slovak Republic.

**Table 2** Agri-food foreign trade of SR by classes of the harmonized system in 2016 and 2020.

		2016		2020	
		mil.eur	%	mil. eur	%
Export	SUM	2826	100.00	3 148	100.00
	I. Live animals and animal products	575	20.35	549	17.43
	II. Plant products	968	34.25	1 051	33.38
	III. Animal and crop fats, oils, waxes	122	4.32	119	3.78
	IV. Products of the food industry, beverages and tobacco	1161	41.08	1 430	45.41
Import	SUM	4104	100.00	3 821	100.00
	I. Live animals and animal products	890	21.69	1 153	30.17
	II. Plant products	1051	25.61	1 146	29.99
	III. Animal and crop fats, oils, waxes	192	4.68	164	4.29
	IV. Products of the food industry, beverages and tobacco	1971	48.03	1 358	35.54

Source: own calculation according to Statistical office of the Slovak Republic.

largest share in the agri-food foreign trade of the Slovak Republic. When broken down into substitute and irreplaceable products, the substitute products account for the largest share of foreign agribusiness. This is confirmed by the statements of **Zoborský (2006)** as well as **Podolák et al. (2007)** on the predominance of the competing products in agri-food foreign trade.

The growing negative balance poses a threat to the competitive commodities we can produce in the domestic market (**Récky and Hambáľková, 2014**).

The role and importance of agricultural and food products in world trade have changed over time (**Jovovic, Jovanovič and Dasić, 2014**).

Their production, unlike industrial production, has many peculiarities. Foreign trade in agricultural and food products is influenced not only by several predictable factors but also by unpredictable factors (**Gálik, 2011**).

Production and trade in agricultural and food products are becoming increasingly globalized (**Vinciuniene and Dadurkaite, 2011**).

We include classes I. – IV. of a harmonized system to agri-food foreign trade, namely:

- I. Live animals and animal products,
- II. Plant products,
- III. Animal and crop fats, oils, waxes,

IV. Products of the food industry, beverages and tobacco.

In Table 2, we can see the structure of agri-food foreign trade of the Slovak Republic according to the classes of the harmonized system. In 2016 and also in 2020, class IV. Products of the food industry, beverages and tobacco had the largest share in Slovakia's foreign agribusiness. In 2016, this class accounted for 41.08% of agro export and in 2020, for 45.41%. In agroimport, in 2016, it was 48.03%, and in 2020, 35.54%. Class II. Plant products follow, followed by class I. Live animals and animal products and in the last place with the smallest share in agri-food foreign trade, there is class III. Animal and crop fats, oils, waxes. For more detailed information, we work with the division according to the chapters of the harmonized system, where agri-food foreign trade consists of chapters 01 – 24. These are made up of individual items, each of which is assigned with an appropriate four-code.

The most important item of agri-food exports in 2016, and also in 2020, occurred to be wheat and meslin. The value of its exports increased by 12 million eur, i.e. by 5.08%. In 2016, it participated in agro export by 8.35% and in 2020, by 7.89%.

For many items of agri-food exports, we have noticed that their share is declining from year to year. The Slovak

**Table 3** The most important items of agri-food export of SR in 2016 and 2020.

		2016	
Code	Item name	Value of export in mil. eur	Share in agroexport in %
1001	Wheat and meslin	236	8.34
1806	Chocolate	232	8.21
0901	Coffee	181	6.40
2106	Food preparations	108	3.82
0406	Cheese and cottage cheese	99	3.50
		2020	
Code	Item name	Value of export in mil. eur	Share in agroexport in %
1001	Wheat and meslin	248	7.88
1806	Chocolate	231	7.34
2106	Food preparations	224	7.12
0406	Cheese and cottage cheese	142	4.51
1005	Maize	129	4.10

Source: own calculation according to Statistical office of the Slovak Republic.

**Table 4** The most important items of agri-food import of SR in 2016 and 2020.

2016		Value of import in mil. eur	Share in agroimport in %
Code	Item name		
1806	Chocolate	252	6.14
0203	Pork	248	6.04
0901	Coffee	196	4.78
1905	Bakery goods	173	4.22
2106	Food preparations	162	3.95
2020		Value of import in mil. eur	Share in agroimport in %
Code	Item name		
0203	Pork	308	6.38
2106	Food preparations	247	5.12
1806	Chocolate	236	4.89
1905	Bakery goods	225	4.66
0406	Cheese and cottage cheese	196	4.06

Source: own calculation according to Statistical office of the Slovak Republic.

Republic is less and less focused on the export of agri-food commodities and on the support of Slovak farmers and food producers. An increasing agro import, and thus an increasing trade balance deficit, are then the results.

The most significant imported item in 2016 was chocolate, whose share in agro import was 6.15%. In 2020, its share decreased to 4.90% and first place was occupied by pork with a 6.37% share in agro import of the Slovak Republic.

For most commodities, we are seeing an increase in their share of total agri-food imports. This is the opposite of the situation when exporting agri-food commodities. Furthermore, we can state that exports with a lower added value prevailed in contrast to imports, where products with a higher added value predominated.

Chocolate is one of the most important long-term commodities of agri-food exports as well as imports from the Slovak Republic. It reached first place in the monitored period. This is also confirmed by the research of **Hambáľková and Kádeková (2017)** for the years 2013 – 2015 when chocolate also took the first place in exports and imports.

The diversity of foreign trade decreased between 2000 and 2015, which corresponded to development in other post-communist countries, too (**Benešová I. et al. 2020**).

Price development is closely related to the commodity structure of agri-food foreign trade in the Slovak Republic (**Gálik, 2011**).

The Slovak agrarian sector imports goods that are more expensive than our exported agricultural products. This is mainly because the Slovak exports are focused mainly on agricultural raw materials, and imports are dominated by processed food products with a higher added value (**Gálik, 2013**).

In the long run, it is more appropriate to focus on the export of products with a higher added value, i.e. food products, and direct agricultural production to provide basic raw materials for the food industry (**Hambáľková and Vakoš, 2017**).

Based on the calculated values of the RCA indicator, we claim that in 2016, and also in 2020, the agri-food foreign trade of the Slovak Republic developed unfavorably. This was also confirmed by **Rumankova et. al. (2020)**, when comparing the development of exports within the V4 countries, but also by the results of the research of **Nagyova et al. (2018)**.

Within the framework of agri-food foreign trade in 2016, out of the total number of 197 items, Slovakia had a comparative advantage for 58 items of the harmonized system and a comparative disadvantage for up to 128 items of the harmonized system. Commodities with a good comparative advantage in 2016 included cereal straw and husks; tapioca and starch substitutes; other live animals; live sheep and goats; wheat and meslin; malt; cocoa mass; glycerol; and residues resulting from the manufacture of starch and oats. On the contrary, commodities with the

**Table 5** Competitiveness of agri-food foreign trade of SR – the RCA indicator.

Code	Item name	2016	Code	Item name	2020
1213	Cereal straw and husks	5.55	1107	Malt	4.70
1903	Tapioca and starch substitutes	5.37	1213	Cereal straw and husks	4.42
0106	Other live animals	5.07	0106	Other live animals	4.30
0104	Live sheep and goats	4.68	1001	Wheat and meslin	4.16
1001	Wheat and meslin	4.49	1507	Soybean oil	3.25
1511	Palm oil	-13.44	1804	Cocoa butter, fat and oil	-10.90
1521	Crop waxes	-8.23	1801	Cocoa beans	-10.49
1404	Crop products	-6.41	0205	Meat of horses, asses and mules	-9.39
0601	Tubers, bulbs and roots	-5.74	1521	Crop waxes	-7.34
1603	Extracts and juices of meat, fish or crustaceans, mollusks and other aquatic invertebrates	-5.48	1510	Other oils	-7.01

Source: own calculation according to Statistical office of the Slovak Republic.

greatest comparative disadvantage included palm oil; crop waxes; crop products; tubers, bulbs and roots; extracts and juices of meat, fish or crustaceans, mollusks, and other aquatic invertebrates; peanut oil; cocoa butter, fat and oil; the fish; bones; and leaves, branches and other parts of plants.

The Slovak Republic was not a net exporter even for 1 item. However, it was a net importer for 9 commodities. Among them, we include meat from horses, asses, and mules; aquatic invertebrates other than crustaceans and mollusks; human hair; swine and boar bristles and hair, badger and other hair; mate; wheat gluten; dill; cocoa beans; cocoa shells, husks, skins, and other cocoa waste; oilcake and other solid residues and wine lees, raw tartar. For 2 commodities, foreign trade was not realized at all - dill; oilcake, and other solid wastes.

In 2020, the Slovak Republic had a comparative advantage in 59 items and a comparative disadvantage in 126 items of the harmonized system within agri-food foreign trade. Among the commodities with a good comparative advantage in 2020, there were included malt; cereal straw and husks; other live animals; wheat and meslin; soybean oil; cocoa mass; residues resulting from the manufacture of starch; eggs; live sheep and goats; and rye. The items with the greatest comparative disadvantage included cocoa butter, fat, and oil; cocoa beans; meat of horses, asses, and mules; crop waxes; other oils; vanilla; the fish; other processed tobacco products; sheep wool and fat; plant materials and plant waste.

The Slovak Republic was not a net exporter even for one item. On the contrary, it was a net importer for 5 items of the harmonized system - human hair; peanut oil; degreas; wine lees, raw tartar, and cocoa shells. For 3 commodities, foreign trade was not realized at all - dill; oilcake and other solid wastes; swine and boar bristles and hair, badger and other hair.

Compared to 2016, we can say that the situation in agri-food foreign trade has not changed for the better in the past 5

years. Although Slovakia is a small country, it would be able to be largely self-sufficient in agriculture and food production. Imports of many agri-food commodities would not be necessary. However, the situation is different. The competitiveness of the Slovak agri-food sector is decreasing, exports are declining, imports are increasing, and domestic products are being pushed out by the foreign.

No country in the world can be completely self-sufficient and competitive. However, each country should maintain Ricardo's theory of comparative advantage, where the country should focus on the production and export of those products at which it achieves the highest productivity (Rhee, 2012).

In the last part of the paper, we compared the actual and estimated values of the development of agri-food foreign trade of the Slovak Republic in 2018 – 2020.

Based on the analysis of the time series of the development of agri-food foreign trade of the Slovak Republic in the years 2018 – 2020 with unchanged internal and external factors, we assumed that exports in 2018 would reach the value of 3 230 million eur, in 2019, would be in the amount of 3 414 million eur and in 2020, would increase to 3 527 million eur, provided that any unforeseeable events do not occur.

Comparing the forecasted values with the real development of exports, we can observe that the expected development of the export trend was significantly affected by its maximum values in 2010 and 2014. Export growth in the following years slowed down significantly, compared to the estimated trend, resulting in a large difference between actual and forecasted values according to the power trend function. With three forecasted values for the years 2018 to 2020, the forecasted values were on average by 421 million eur higher, although the increase in exports in this period was slightly higher than its stagnation in the period 2014 to 2017. It can be stated that the export forecast was affected by its maximum values in 2010 – 2014, and its further development will follow a trend that would forecast without

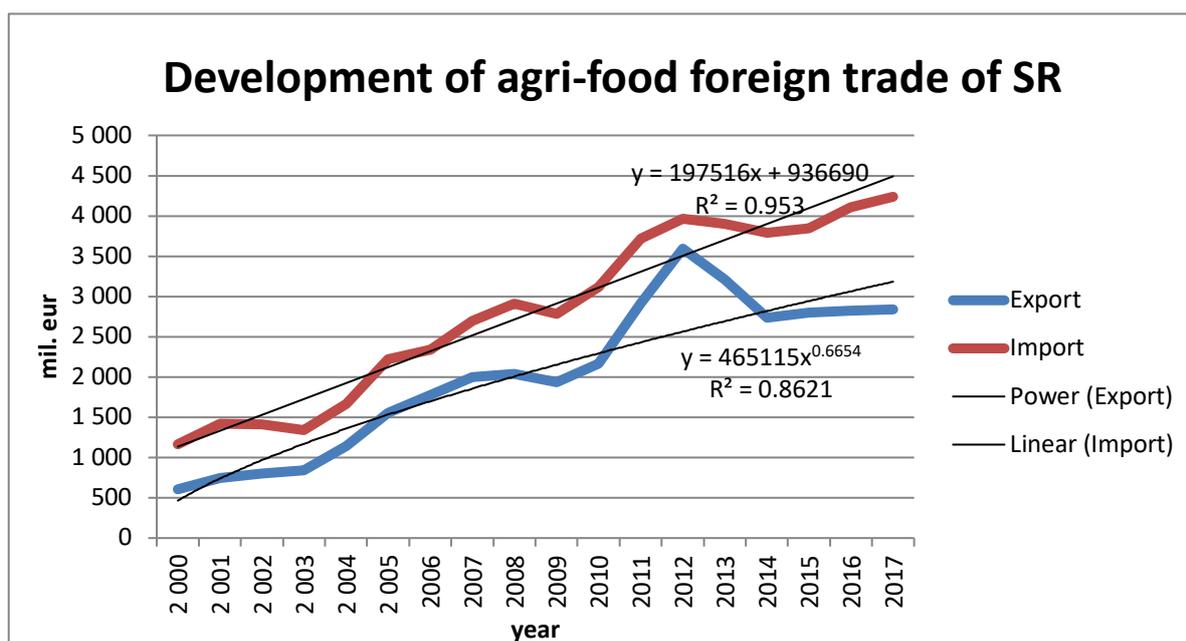


Figure 1 Export and import of agri-food foreign trade of SR in the years 2000-2017 in mil. eur.

Source: own calculation according to to Statistical office of the Slovak Republic.

**Table 7** Estimated values of the basic indicators of agri-food foreign trade of SR in the years 2018-2020 in mil. eur.

	Export	Import	Turnover	Balance
2018	3 300	4 689	7 989	- 1 389
2019	3 414	4 887	8 301	- 1 473
2020	3 527	5 085	8 612	- 1 558

Source: own calculation according to Statistical office of the Slovak Republic.

**Table 8** Actual values of the basic indicators of agri-food foreign trade of SR in the years 2018-2020 in mil. eur.

	Export	Import	Turnover	Balance
2018	2 856	4 486	7 342	-1 630
2019	2 986	4 772	7 758	-1 786
2020	3 136	4 831	7 967	-1 695

Source: own calculation according to Statistical office of the Slovak Republic.

taking the high values from that period into account. A linear trend function was used to forecast imports. The forecast assumes an increase in the values of imports similarly to the previous one, at a faster pace than for exports. In 2018, it should amount to 4 689 million eur, in 2019, it will increase to 4 887 million eur and in 2020, it should reach 5 085 million eur. Compared to the actual values, the increase in imports was slower and lagged behind the extrapolated values of the linear growth trend by an average of 191 million eur at the three forecasted values.

On the contrary, in contrast to the expected forecasted growth with the same average growth rate, import growth slowed down, especially between 2019 and 2020.

At the moment, imports are in a phase of slowing down, after which we can expect their recovery and return to the values that would be closer to the originally forecasted trend. Based on the forecast, with the growing value of exports and imports, we assumed that the turnover of foreign agri-food trade in the Slovak Republic would also increase every year. Despite the significantly overestimated values originally forecasted for exports and imports, the actual trade balance deficit of the Slovak Republic was significantly higher than the forecasted. Compared to the originally forecasted values of the trade balance deficit for the years 2018 – 2020, which were 1 389 million eur; 1 473 million eur; and 1 558 million eur, its actual values in this period were 1 630 million eur; 1 786 million eur; and 1 695 million eur. The originally forecasted values of the development of exports and imports of agri-food foreign trade in the Slovak Republic can help to form an idea of their development in the situation if the previous conditions were maintained without the influences that affected their development mainly in 2020. This year, the actual exports have been lower than the forecasted by 391 million eur and imports by 254 million eur.

The possibilities of transformation not only for expansion but also for maintaining the achieved export values in the current conditions are undermined by the negative dynamics of demand, which is exacerbated by the economic downturn due to the COVID-19 pandemic (Kiselev, Romashkin, 2021).

The competitiveness of the Slovak agri-food sector is declining, exports are declining, imports are increasing, and domestic products are being pushed out by foreign ones. There are many problems and causes of the ever-deepening deficit of agri-food foreign trade.

The annual increase in the deficit balance of the agri-food foreign trade of the Slovak Republic is also related to the high share of foreign agri-food products in retail chains

in the territory of the SR. On the contrary, the share of agri-food products produced in Slovakia is decreasing from year to year. It is necessary to support the production and sale of products from domestic producers. Possible solutions include in particular the expansion of advertising for the purchase of Slovak products. Recently, some well-known retail chains have focused their attention on the promotion of Slovak products. It is necessary to continue in this direction and draw people's attention to the purchase of domestic products. In this way, we can greatly increase the share of domestic agri-products and gradually reduce the share of foreign agri-food products, which would subsequently lead to a reduction in the deficit balance of foreign agribusiness and growth in prosperity in Slovakia. Support of exports in the agri-food foreign trade of Slovakia is another significant problem. The Slovak Republic should pay more attention to supporting the export of those commodities in which we achieve a comparative advantage. We achieve this in many agri-food commodities. Even though we have enough agricultural production to produce many food products, we still import them from abroad. It is necessary to reduce the import of the substitute commodities, which can also be produced in our conditions. Farmers should reconsider growing crops to create some added value. Cultivation of crops for seeds and not for fodder, which consequently has a lower price, is a suitable example. Also, growing fruit and vegetables for further processing can increase employment and reduce imports. We export raw materials in large quantities and import processed products, which are much more expensive. For the Slovak Republic, it is necessary to focus on the processing of raw materials and materials at its disposal, and thus to create products with a higher added value and not to import these more expensive products from abroad.

## CONCLUSION

In this paper, we evaluated the development and competitiveness of agri-food foreign trade in the Slovak Republic for the period 2016–2020. Based on the achieved results, we can state that we have reached an ever-increasing trade balance deficit in agri-food foreign trade. Finally, we compared the actual and estimated values of the development of agri-food foreign trade in the years 2018 – 2020. With the unchanged internal and external conditions, exports and imports will continue to grow, but imports will grow faster than exports. As a result, the trade balance deficit will become more and more intensified.

The area of agri-food foreign trade of the Slovak Republic is connected with several problems that need to be solved. The main problems include export of the unprocessed commodities and import of the finished products with a high added value, which are consequently also more expensive for domestic consumers. This is also related to insufficient support for the export of those commodities and products for which we achieve a comparative advantage. We import easily replaceable products on a large scale, which can also be produced on the territory of our country. The change in this situation will provide new job opportunities, increase employment, and produce products with a high added value and lower prices for domestic consumers.

At present, it is very difficult to anticipate the future development and competitiveness of the agri-food foreign trade of the Slovak Republic, as the pandemic of the coronavirus COVID-19 has significantly affected the entire business environment. Despite the above, we consider our contribution to be beneficial, as it analyzes in detail the development of the competitiveness of agri-food foreign trade in the Slovak Republic and points out the problems in this area.

## REFERENCES

- Benešová, I., Smutka, L., Hinke, J., Laputková, A. 2020. Competitiveness of Mutual Agrarian Foreign Trade of the Post-Soviet Countries. *E+M Ekonomie a Management*, vol. 23, no. 3, p. 49-66. <https://doi.org/10.15240/tul/001/2020-3-004>
- Borodin, K. G. 2006. Evaluation of product competitiveness in the context of modern trade. *Studies on Russian Economic Development. Dev.*, vol. 17, no. 3, p. 289-297. <https://doi.org/10.1134/S1075700706030075>
- Fabová, E. 2015. Vplyv inovácií na konkurencieschopnosť ekonomík (The impact of innovation on competitiveness of the economies). *Časopis znalostní společnosti*, vol. 3, no. 1, p. 91-97. (In Czech). ISSN 2336-2561. Available at: [http://jks.euin.org/sites/default/files/jks\\_2015\\_01\\_091-097\\_Fabova\\_0.pdf](http://jks.euin.org/sites/default/files/jks_2015_01_091-097_Fabova_0.pdf).
- Gálik, J. 2011. Development and efficiency of agri-food foreign trade of the Slovak Republic in the international context. *Agric. Econ.*, vol. 57, no. 1, p. 41-46. <https://doi.org/10.17221/142/2010-AGRICECON>
- Gálik, J. 2013. *Ročenka agropotravinárskeho zahraničného obchodu SR za rok 2012 (Yearbook of agri-food foreign trade of the Slovak Republic in 2012)*. Bratislava : Výskumný ústav ekonomiky poľnohospodárstva a potravinárstva, 66 p. (In Slovak). ISBN : 978-80-8058-590-7.
- Hambáľková, M., Kádekova, Z. 2017. Prerequisites and Possibilities for Export of Slovak Agricultural and Food Commodities to the Third Country Markets. In : *7th International Scientific Conference on Managerial Trends in the Development of Enterprises in Globalization Era (ICoM)*. p. 575-582. ISBN 978-80-552-1739-0.
- Hambáľková, M., Vakoš, A. 2017. Competitiveness of the Slovak Republic within V4 countries in consideration of development of business environment and innovation strategy of business entities. In *International Scientific Conference on the Poprad Economic and Management Forum*, p. 296-304. ISBN 978-80-561-0519-1.
- Heakal, R. 2021. *Current Account Balance* [online]. Available at: <https://www.investopedia.com/insights/exploring-current-account-in-balance-of-payments/>.
- Jovovic, D., Jovanović, S. S., Dasic, B. 2014. Agricultural Trade And Financing Through Fdi. *Ekonomika Poljoprivreda-Economics of Agriculture*, vol. 61, no. 2, p. 455-469. <https://doi.org/10.5937/ekoPolj1402455J>
- Jurečka, V. 2011. *Úvod do ekonomie (Introduction to economics)*. 3. uprav. vyd. Ostrava : Vysoká škola báňská, 278 p. (In Slovak). ISBN 978-80-2482-515-1.
- Kadárová, J., Janeková, J. 2019. *Riadenie a ekonomika podnikov : podnikateľské prostredie (Business management and economics: business environment)*. Ostrava : VŠB – Technická univerzita, 252 p. (In Slovak). ISBN 978-80-248-4252-3.
- Kiselev, S. V., Romashkin, R. A. 2021. The State and Prospects of Russia's Agri-food Export to the Countries of the Eurasian Economic Union. *Studies on Russian Economic Development*, vol. 32, no. 2, p. 221-228. <https://doi.org/10.1134/S1075700721020064>
- Kuzmišin, P. et al. 2010. *Svetová ekonomika (World economy)*. 2. dopl. vyd. Košice : Technická univerzita, 390 p. (In Slovak). ISBN 978-80-553-0413-7.
- Maslova, V. V., Chekalin, V. S., Avdeev, M. V. 2019. Agricultural Development in Russia in Conditions of Import Substitution. *Herald of the Russian Academy of Sciences*, vol. 89, no. 5, p. 478-485. <https://doi.org/10.1134/S1019331619050058>
- Matejková, E., Pietriková, M., Poláková, Z. 2015. *Praktikum zo štatistiky A (Practicum in statistics A)*. Nitra : Slovenská poľnohospodárska univerzita, 199 p. (In Slovak). ISBN 978-80-552-1416-0.
- Michník, L. et al. 1998. *Zahraničný obchod (Foreign Trade)*. Bratislava : Sprint, 656 p. (In Slovak). ISBN 80-8884-31-8.
- Nagytová, L., Horáková, M., Moroz, S., Horská, E., Poláková, Z. 2018. The analysis of export trade between Ukraine and Visegrad countries. *E+M Ekonomie a Management*, vol. 21, no. 2, p. 115-132. <https://doi.org/10.15240/tul/001/2018-2-008>
- Podolák, A et al. 2007. *Medzinárodný obchod a formovanie agroobchodnej politiky (International trade and the formation of agri-trade policy)*. Nitra : Slovenská poľnohospodárska univerzita, 215 p. (In Slovak). ISBN 978-80-8069-863-8.
- Récky, R., Hambáľková, M. 2014. *Marketingové prístupy k výrobe, spracovaniu a odbytu olejnin v SR (Marketing approaches to the production, processing and sale of oilseeds in the Slovak Republic)*. Nitra : Slovenská poľnohospodárska univerzita, 137 p. (In Slovak). ISBN 978-80-552-1169-5.
- Rhee, Ch. 2012. *Principles of International Trade: First step towards globalization*, 5th edition, Bloomington: Author House. p. 560. ISBN 978-14-772-8411-7.
- Rumánková, L., Kuzmenko, E., Benešová, I., Smutka, L., Laputková, A. 2020. Animal Husbandry Export Measures Productivity: What is the Position of the Czech Republic? *Agris On-Line Papers in Economics and Informatics*, vol. 12, no. 4, p. 93-110. <https://doi.org/10.7160/aol.2020.120407>
- Smutka, L., Rovný, P., Hambáľková, M. 2016. Foreign trade with agricultural products in the Slovak Republic. In *International Scientific Days 2016. The Agri-food Value Chain: Challenges for Natural Resources Management and Society*. p. 68-74. <https://doi.org/10.15414/isd2016.s1.06>
- Spěvák, V. et al. 2016. *Makroekonomická analýza – teorie a praxe (Macroeconomic analysis – theory and practice)*. Praha : Grada, 554 p. (In Czech). ISBN 978-80-247-5858-9.
- Šegota, A., Tomljanović, M., Huđek, I. 2017. Contemporary Approaches to Measuring Competitiveness – The Case of EU Member States. In *Zbornik radova Ekonomskog fakulteta u Rijeci* [online]. vol. 35, no. 1, p. 123-150. <https://doi.org/10.18045/zbfri.2017.1.123>
- Statistical office of the Slovak Republic 2021. [online]. Available at: <http://www.statistics.sk/>.

Tong Soo, K. 2013. The Gains from External Scale Economies and Comparative Advantage. *Economics Bulletin*, vol. 34, no. 1, p. 84-88. ISSN 15452921.

Tuleja, P., Nezval, P., Majerová, I. 2012. *Základy makroekonomie (Fundamentals of macroeconomics)*. 2. vyd. Brno : Bizbooks, 320 p. (In Slovak). ISBN 978-80-265-0007-0.

Vinciuniene, V., Dadurkaite, J. 2011. Impact of Globalization on Lithuanian Foreign Trade of Agricultural and Food Products. *Management Theory and Studies for Rural Business and Infrastructure Development*, vol. 25, p. 239-252. Available at: <http://mts.asu.lt/mtsrbid/article/view/228>

Zoborský, M. 2006. *Ekonomika poľnohospodárstva (Economics of agriculture)*. Nitra : Slovenská poľnohospodárska univerzita, 319 p. (In Slovak). ISBN 80-8069-758-2.

### Funds:

This work was supported by grant VEGA No. 1/0525/21 "Craft Beer Revolution": Factors, impacts and perspectives of craft breweries development in Slovakia.

### Contact address:

\*doc. Ing. Anna Látečková, PhD., Slovak University of Agriculture in Nitra, Faculty of Economics and Management, Department of Accountancy, Tr. A. Hlinku 2, 949 76 Nitra, Slovakia, Tel.: +421376414149,

E-mail: [anna.lateckova@uniag.sk](mailto:anna.lateckova@uniag.sk)

ORCID: <https://orcid.org/0000-0002-0682-5025>

Ing. Michaela Trnková, PhD., Slovak University of Agriculture in Nitra, Faculty of Economics and Management, Department of Accountancy, Tr. A. Hlinku 2, 949 76 Nitra, Slovakia, Tel.: +421376414149,

E-mail: [xtrnkova@uniag.sk](mailto:xtrnkova@uniag.sk)

ORCID: <https://orcid.org/0000-0002-3058-8584>

Ing. Jozef Palkovič, PhD., Slovak University of Agriculture in Nitra, Faculty of Economics and Management, Department of Statistics and Operations Research, Tr. A. Hlinku 2, 949 76 Nitra, Slovakia, Tel.: +421376414162,

E-mail: [jozef.palkovic@uniag.sk](mailto:jozef.palkovic@uniag.sk)

ORCID: <https://orcid.org/0000-0002-4992-0145>

doc. Ing. Ivan Holúbek, PhD., Slovak University of Agriculture in Nitra, Faculty of Economics and Management, Department of Finance, Tr. A. Hlinku 2, 949 76 Nitra, Slovakia, Tel.: +4213764146,

E-mail: [ivan.holubek@uniag.sk](mailto:ivan.holubek@uniag.sk)

ORCID: <https://orcid.org/0000-0001-8489-0394>