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Foreign Trade in Agri-Food Products of Ukraine in the Context of the COVID-19

Nataliia Patyka*

National Scientific Centre "Institute of Agrarian Economics"
03127, 10, Heroiv Oborony Str., Kyiv, Ukraine

▸ **Abstract.** The research results obtained during the implementation of the project "Assessment of the impact of quarantine measures related to COVID-19 on the agricultural sector and food security of the state and development of an algorithm for minimising the adverse consequences" No. 2020.01/0313 of the competition "Science for Human and Society Security" at the expense of grant support from the National Research Foundation of Ukraine. The purpose of the research – to analyse the impact of restrictive quarantine measures in 2020-2021 related to the spread of the COVID-19 pandemic on foreign trade activities in the agricultural sector of Ukraine. In generalising the theoretical and methodological aspects of the research, the methods of the abstract and logical method, analysis and synthesis, induction and deduction, analogy and comparison were used. To diagnose the dynamics of exports and imports of agro-food products, economic and statistical methods (comparative analysis, average and relative values, statistical groupings, trend analysis, graphical method, index, coefficient analysis, etc.) Several techniques of abstract and logical tools allowed the development of intermediate conclusions and proposals. It is established that the domestic agrarian sector, considering its current raw material and export orientation, depends on the foreign economic situation of market demand, which was affected by restrictions related to the spread of the COVID-19 pandemic and the introduction of quarantine measures during the global level, namely: restrictions on trade transactions between states, restrictive measures on the movement of goods, closure of agro-food markets, etc. It is confirmed that since the beginning of the spread of COVID-19, the conditions for trade in agri-food products in Ukraine have deteriorated. It was determined that the volume of exports of agro-food products in 2020 compared to 2019 remained practically unchanged – an increase of 0.2%. Therewith, imports of such products for the same period increased by 13.3%. The excess of import growth over exports resulted in a significant deterioration in the foreign trade balance of agri-food products – a decrease of 4.4%, which indicates the adverse impact of the spread of the pandemic and the introduction of restrictive quarantine measures on foreign trade in domestic agri-food products. The most unfavourable trends were inherent in foreign trade in meat and dairy products. Scientific and methodological approaches to assessing the impact of quarantine restrictions related to the spread of the COVID-19 pandemic on foreign trade in agri-food products in Ukraine were further developed. The results of the impact of restrictive quarantine measures on the state of foreign trade in agri-food products in 2020-2021 can be considered in the development of

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*Corresponding author

an efficient targeted national policy designed to increase the competitiveness of the agricultural sector, ensure Ukraine's stable position in the global agri-food market, and the socio-economic development of the country in a pandemic

▸ **Keywords:** agricultural sector, foreign trade, agri-food products, quarantine measures, Ukraine

▸ Problem statement

The decline in the global economy caused by the spread of the COVID-19 pandemic has led to significant changes in all spheres of life and all types of economic activity, including in the foreign economic activity of the domestic agricultural sector. Relatively low external demand and protectionism of some trading partners in the context of the fight against the COVID-19 pandemic have exacerbated problems in the foreign economic activity of the agricultural sector of Ukraine's economy, considering its foreign market orientation: the proportion of agriculture and food industry in the total structure of exports of goods from Ukraine in 2020 reached 45.1% against 19.4% in 2010 (Kryukova, Kalyna, Panteleiev, & Minakova, 2018; Commodity structure of Ukraine's…, 2020). The maximum adverse effect of strict anti-epidemiological measures in Ukraine was most noticeable during the first lockdown – in April-May 2020. To this was added the factor of a smaller crop harvest and deterioration of the foreign economic situation for some types of Ukrainian exports.

Analysis of recent studies and publications. The issues of the development of foreign economic activity and access of Ukrainian producers of agro-food products to foreign markets in the scientific literature and practice conventionally receive considerable attention. In particular, they are covered in the works of O.M. Borodina, V. Krupin (Borodina, & Krupin, 2018); Ye.V. Havaza (Havaza, 2015); M.Yu. Harbuz (Harbuz, 2012); M.A. Horlachuk (Horlachuk, 2013); V.I. Jemcev (Jemcev, 2013); I.M. Zhylenkova (Zhylenkova, 2015); N. Karasova Karasova, 2016); I.O. Kryukova, T.Ye. Kalyna, S.M. Minakova (Kryukova, Kalyna, Panteleiev, & Minakova, 2018); A.V. Rjabchyk and O.P. Volynecj (Rjabchyk, & Volynecj, 2014); I.Ju. Saljman and M.I. Ibatullin (Saljman, & Ibatullin, 2015); S.V. Tyvonchuk and Ya.O. Tyvonchuk (Tyvonchuk, & Tyvonchuk, 2014), etc.

For the most part, the attention of scientists is devoted to entering the world market in general or to Ukraine's positions in its product segments. Naturally, the most explored of these segments is the grain market, the investigation of which is the subject of the works of N.M. Hurzhii, A.S. Svierchkova (Hurzhii, & Svierchkova, 2013), I.Y. Salkova (Salkova, 2014), L.O. Franchenko (Franchenko, 2013), V.M. Chornyi (Chornyi, 2017) etc. For these authors, the grain market is and will remain the priority of Ukraine's foreign economic expansion, as it has the greatest technical and technological, transport and logistics, land and resource, and other potential for this. In some publications, the place of Ukraine in the world market of oilseeds is explored. In particular, I.V. Chekhova notes that currently "the general trend in the domestic and world markets of oilseeds coincides, and the differences relate to the rate of increase in the production of sunflower, oil flax, and the rate of decline in rapeseed production" (Chekhova, 2017). The most explored by far has been the market of milk and dairy products, including in terms of the development of export commodity flows (Havaza, 2015; Harbuz, 2012; Tyvonchuk, & Tyvonchuk, 2014). Some publications by scientists (Jemcev, 2013, Rjabchyk, & Volynecj, 2014) and practitioners (Saljman, & Ibatullin, 2015) cover the meat market.

There are numerous scientific publications on the specific features of Ukraine's participation in the world market of agricultural products, motives, methods, and strategic directions of domestic enterprises entering foreign markets, the development of competitive positions on them, etc.

Although the COVID-19 pandemic is a fairly new phenomenon, however, the scientific

literature has already paid considerable attention to identifying and systematising the factors of its impact on the economies of countries, regions, industries, economic entities, foreign economic activity, the welfare of the population, etc. Thus, the impact of the COVID-19 pandemic on fruit and vegetable exports was assessed by P. Joshi *et al.* (2019) (Kliuchnyk, & Baryshnyk, 2016; Joshi, Kulkarni, Munje, & Kulkarni, 2019). Using a standard macroeconomic model, proved the serious damage of the COVID-19 pandemic to global supply chains (Barua, 2020). The authors of the study "Prospects for Commodity Markets: Impact of COVID-19", conducted by representatives of the World Bank, draw attention to the impact of quarantine measures on the price situation in the global agricultural market (Commodity Markets Outlook: Implications…, 2020).

Together with his colleagues, D. Zaha, in an analytical study, identifies a decrease in demand for exports of goods and services as external shocks affecting the Ukrainian economy resulting from the spread of the COVID-19 pandemic (Zakha, Movchan, Kravchuk, Kirkhner, & Polushkin, 2020). One of the most significant factors of influence associated with the spread of the COVID-19 pandemic and the restrictive measures introduced, V. Movchan determines the change in demand of partner countries (Ukraine can feed not…, 2020). According to A.I. Kondratenko, D.I. Babmindra, and I.M. Slobodianyk, "the COVID-19 pandemic has caused both adverse and positive changes in Ukraine's foreign trade" (Kondratenko, Babmindra, & Slobodianyk, 2021). Therewith, despite the existence of several scientific works covering various aspects of foreign economic activity and the functioning of world agro-food markets, determining Ukraine's place in them, there are currently completely different problems compared to the previous ones regarding the provision of export supplies in the domestic agricultural sector, the increase in imports of agro-food products caused by the COVID-19 pandemic caused by the SARS-CoV-2 coronavirus. More thorough research is required to identify the degree of impact of quarantine restrictive measures on export-import activities in the agricultural sector. This is required to develop in the future an efficient targeted national policy designed to increase the competitiveness of the agricultural sector, and ensure Ukraine's stable position in the global agri-food market, and the country's socio-economic development in the context of the pandemic.

The purpose of the research – is to analyse the impact of restrictive quarantine measures in 2020-2021 related to the spread of the COVID-19 pandemic on foreign trade activities in the agricultural sector of Ukraine.

Materials and methods. The methodological foundation of the research was a systematic approach to the study of the explored phenomena and processes and a dialectical method of cognition, which allowed a comprehensive consideration of the processes related to the impact of the spread of the COVID-19 pandemic and quarantine measures on foreign trade activities in the agricultural sector of Ukraine.

In generalising the theoretical and methodological aspects of the research, the methods of the abstract and logical method, analysis and synthesis, induction and deduction, analogy and comparison were used. To diagnose the dynamics of exports and imports of agro-food products, economic and statistical methods (comparative analysis, average and relative values, statistical groupings, trend analysis, graphical method, index, coefficient analysis, etc.) It was done to establish specific relationships such as identity, similarity, or difference between characteristics and facts. Several techniques of abstract and logical tools allowed the development of intermediate conclusions and proposals. The reliability of the results and conclusions is confirmed by calculations using statistical observations.

The information base of the study was: data from the State Statistics Service of Ukraine, the Ministry of Agrarian Policy and Food of Ukraine, the Ministry of Economy of Ukraine, regulations of the state; scientific publications; information from Internet resources. Notably, the collection of statistical information and the development of the database cover: exports and imports of agri-food

products in value and volume terms, including commodity and geographical structure of foreign trade, world prices for agri-food products, and other macroeconomic indicators. The research period covers 2019-2021.

Outline of the main material. The domestic agricultural sector, as one of the determinants in the development of national GDP, is largely a raw material export industry, thus, it depends on the foreign economic situation of market demand, which was affected by restrictions related to the spread of the COVID-19 pandemic and the introduction of quarantine measures at the global level. First of all, these are restrictions on trade transactions between states, restrictive measures on the movement of goods, closure of agro-food markets, etc.

The first half of 2020 experienced an unprecedented decline in the price of oil on world markets. In 2021, this trend continued. As a result, expectations for global oil demand have deteriorated. And although fuels and lubricants are significant items of expenditure for agricultural producers, this phenomenon should be assessed as an adverse factor. The decline in oil prices caused a sharp decrease in imports, including agri-food products, by countries that received foreign currency through oil production and exports. Among such countries are large importers of Ukrainian agricultural products and food, for example, Egypt, UAE, etc. Due to the decrease in foreign exchange earnings from the sale of oil and even more significantly from the curtailment of the tourism industry, the consumption of agricultural and food products in these countries has decreased.

In addition to external impacts, it is essential to highlight the factors of internal impacts, such as changes in consumer sentiment and the structure of consumer demand, a decrease in effective demand, a reduction in production, including from suppliers of inputs for agriculture, rising prices for resources and raw materials, forced removal from work of infected workers or workers who have been in contact with the infected – which in turn resulted in a decrease in production, etc. These factors, uncertainty in agri-food supply chains, and the general economic decline threatened foreign trade revenues (Table 1).

Table 1. Dynamics of foreign trade of Ukraine in agri-food products (groups 1-24), million US dollars

Indicator	January-June 2019	January-June 2020	January-June 2021	January-June 2020, %, by January-June 2019	January-June 2021%, by January-June 2020	2019	2020	2020, %, by 2019	For reference: 2019,%, by 2018
Export	12175	12278	12614	100.8	102.7	22144	22179	100.2	119
Import	4670	5052	5503	108.2	108.9	5736	6498	113.3	92.4
Export-import balance	9524	9246	9132	97.1	98.8	16408	15681	95.6	121

Source: calculated by the author based on the data of the State Statistics Service of Ukraine (Commodity structure of Ukraine's…, 2020)

According to the above data, the volume of exports of agro-food products in 2020 compared to 2019 remained almost unchanged – an increase of only 0.2% or 35 million US dollars. Therewith, from 2015-2019, the average annual export growth rate was 11.2%, and in 2019 – 19.0% (Commodity structure of Ukraine's…, 2020).

Opposite trends in the analysis period were observed in the import area. In 2020, the volume of imports of agro-food products increased by 13.3% compared to the previous 2019. And this is when the average annual growth rate of imports in 2015-2019 was 8.0%, and in 2019 there was a significant decrease of 7.6% (Commodity structure

of Ukraine's…, 2020). Such an unprecedented increase in imports and deceleration in exports resulted in a significant deterioration in the foreign trade balance of agri-food products – for the first time in the last decade, the balance of foreign trade in agri-food products decreased, although it remained positive. Such import growth rates indicate dissatisfaction with domestic consumer demand by domestic producers of agri-food products in terms of quantity, quality and price. Such trends in the future can result in a decrease in the competitiveness of domestic producers, and loss of market share, which in turn will have even more adverse long-term consequences, such as a decrease in production due to lower demand, and therefore revenues, profits, layoffs, increased social tension, etc. The increase in exports of agri-food products by 0.2% in 2020 was largely provided by processed agricultural products, namely fats and oils of animal or vegetable origin (up 21.4%) and prepared foods (up 4.4%) (Foreign trade in certain…, 2021).

As for raw (agricultural) products, there is a significant decrease in exports of both animal and plant products. The increase was registered only in fish and crustaceans (26.0%), and natural shellac (57.4%). For the rest of the names of agricultural products, there was a decrease in export supplies. The largest losses of exports were characteristic of seeds and fruits of oilseeds (28.1%), products of the flour and grains industry (23.6%), live animals (17.6%), live trees and other plants (11.7%), vegetables (8.8%), meat and edible offal (by 8.4%). In 2021, the upward trend compared to 2020 resumed, but compared to the corresponding period of 2019, there was a further aggravation of the problem of reducing agricultural exports (groups 1-14) (Foreign trade in certain…, 2021).

The growth of imports of agri-food products by 13.3% in 2020 was provided by both agricultural products and processed products. In particular, the volumes of imports of milk and dairy products increased (growth by 81.9%), meat and fish products (26.1%), vegetables (23.6%), ready-made products from grain (20.3%), live trees and other plants (19.1%), edible fruits and nuts (18.2%), fats and oils of animal or vegetable origin (growth by 17.4%), etc. The decrease in imports, and then insignificant, was characteristic only for crops (by 1.2%), seeds and fruits of oilseeds (3.2%), and natural shellac (0.2%) (Foreign trade in certain…, 2021). In the first half of 2021, the growth rate of imports increased significantly compared to the corresponding period of 2020 and 2019, which indicates a further aggravation of the problem of import dependence on agro-food products (groups 1-24). Thus, the largest increase was in milk and dairy products – more than 2.5 times compared to the first half of 2019, products of the flour and grains industry – 2.47 times, sugar and sugar confectionery – 2.84 times, finished grain products – 60.5%, fats and oils of animal or vegetable origin – 60.2%, meat and fish products – 56.1%, vegetables – 48.0%.

In the structure of exports, the largest share continues to be occupied by products of plant origin, although, during the year, their share decreased slightly – from 58.3% in 2019 to 53.6% in 2020 (a decrease of 4.7 percentage points), of which crops – 43.5 and 42.4%, respectively. The second place is occupied by fats and oils of animal or vegetable origin with a share of 21.4% in 2019 and 25.9% in 2020 (an increase of 4.5 percentage points over the year). Finished food products ranked third with 14.5% in 2019 and 15.2% in 2020 (up 0.7 percentage points). In the structure of exports of animal products of Ukraine, the largest shares are meat and edible offal (more than half (54.9%) in 2020 and 55.7% in 2019), and milk and dairy products (35.0%). Therewith, live animals are exported in small quantities, and their share in the structure of livestock exports ranges from 3-4%. The share of fish and crustaceans is not significant and does not exceed 1-3% (Foreign trade in certain…, 2021).

The structure of imports of agro-food products has not changed significantly – the largest share continues to be held by ready-made food products, their share for the year increased by only 0.1 pp – from 45.6% in 2019 to 45.7% in 2020. The highest increase in the share in total imports of agri-food products was noted for products of animal origin, mainly by increasing the share of milk and dairy products – by 1.7 pp (from 3.0% in 2019 to 4.7% in 2020) (Foreign trade in certain…, 2021).

Foreign trade in meat and dairy products has undergone the greatest changes. In particular, for the period from 2019 to 2020, there are two opposite trends in foreign trade in milk and dairy products: an increase in imports and a decrease in exports. Thus, the volume of exports of milk and cream decreased by 26.0% from 25,206 tons to 18,642 tons in 2020, condensed milk – by 23.4% from 35,805 tons to 27,417 tons, animal butter – by 38.6% from 18,283 to 11,234 tons, cheese – by 11.6% from 7,191 to 6,358 tons. The only dairy product that demonstrated growth was whey (growth rate of 11.4%). Instead, imports of milk and dairy products in 2020 increased significantly. Thus, the volume of imports of milk and cream increased 3.6 times from 3,598 tons in 2019 to 12,969 tons in 2020, condensed milk – 1.6 times from 2,564 tons to 6,144 tons, animal butter – 2.9 times from 3,406 tons to 10,012 tons, cheeses – almost doubled from 23,724 tons to 46,767 tons, fermented milk products – 1.6 times from 6,167 tons to 9,921 tons. In general, the manifestation of these two trends resulted in a significant deterioration of the export-import balance. In 2021, the situation deteriorated even further (Fig. 1).

Considering the above, it can be stated that imported goods have become more in demand in the dairy sector. It is connected both with insufficient domestic production, high prices for domestic milk and dairy products, especially cheeses, and loud history of safety of domestic dairy products, etc. Through the production of dairy products in regions remote from the places of its main consumption and insufficiently developed logistics, the import of liquid milk for long-term storage is widespread. Demand for whole milk powder is growing, mainly driven by increased consumption of products made from reconstituted milk. Another factor in the growth of reconstituted milk consumption is the cost. It is cheaper than fresh and often sold at promotional prices. In the conditions of the spread of the COVID-19 pandemic and the decline in incomes of citizens, cheaper imported dairy products proved to be more competitive and pushed domestic producers out of the market.

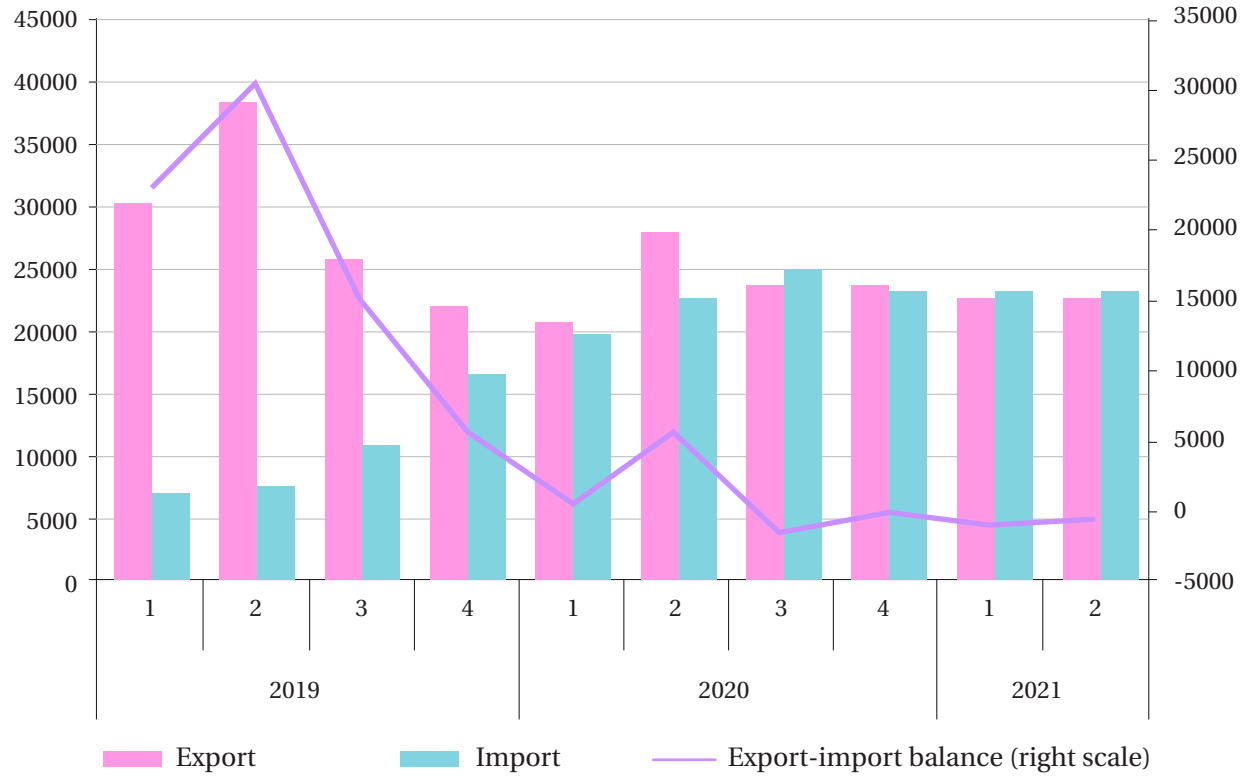

Figure 1. Dynamics of export-import balance of milk and dairy products in Ukraine for 2019-2021, thousand tons

Source: Developed by the author based on the data of the State Statistics Service of Ukraine (Foreign trade in certain…, 2021)

In foreign trade in meat and meat products, trends opposite to milk can be traced: import volumes are marked by diverse trends: there was both an increase in meat imports in some periods and a decline. However, according to the results of 2020, the volume of imports of meat and meat products decreased by 13% from 228.5 to 198.9 thousand tons compared to 2019. In 2021, there is an upward trend again. Instead, exports are characterised by stable volumes – in 2020 the growth was only 0.7 pp compared to 2019. In the first quarter of 2021, a significant decline in the supply of meat and meat products to foreign markets was recorded compared to the same period of previous years, but in the second quarter, there is an active growth (by 45.2% compared to the first quarter). It contributed to the improvement of the export-import balance (Fig. 2).

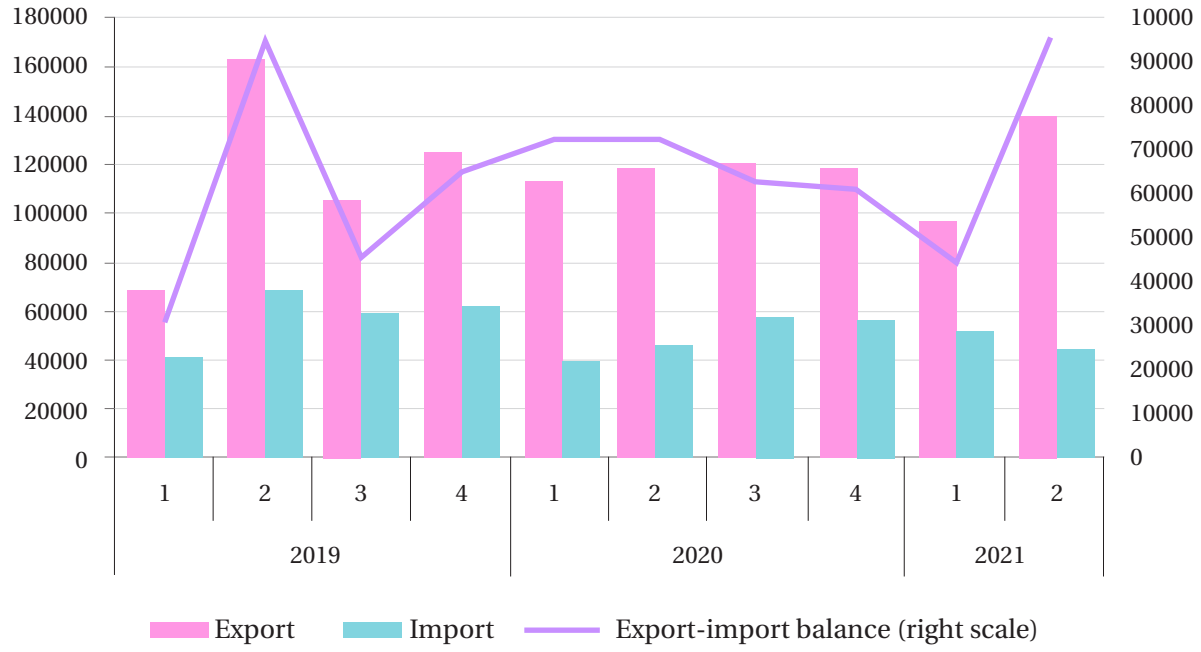

Figure 2. Dynamics of export-import balance of meat and meat products in Ukraine for 2019-2021, tons
Source: Developed by the author based on the data of the State Statistics Service of Ukraine (Foreign trade in certain…, 2021)

To continue analysing the impact of the spread of the COVID-19 pandemic and restrictive measures on the results of foreign trade in agri-food products, it is advisable to analyse the indices of physical volume (Laspeyres index), Paasche prices and terms of trade.

The physical volume index (Laspeyres) describes the price ratio of goods sold in the current period compared to the previous one in the unchanged volume of the base period. Paasche price index is a price level indicator that describes the dynamics of the general price level of a specific group of goods. The index allows estimating how many times the actual costs of acquiring goods are more (less) than the amount of money that the country would have to pay for the same goods if the prices and structure of exports and imports remained at the level of the base period.

The terms of trade are the number of imported goods that a country receives in exchange for a given quantity of exported goods of its production. The indices of terms of trade "price" and "quantity" describe the extent to which a country gains or loses due to changes in prices or quantities of goods in foreign trade with a particular country (countries) for the relevant period. The term trade index is one of the most important indicators used in the analysis of foreign trade trends. It allows for determining how favourable or unfavourable the country's terms of trade were in the period under study compared to the reference period.

The values of indices of physical volume, prices and terms of trade for the analysed period further confirm and specify the conclusions developed in the study earlier. In particular, in 2020, compared to 2019, prices for exported agri-food products from Ukraine grew faster than for imported ones – 104.6% against 99.6%, respectively (Indices of physical volume…, 2021). Thus, there is evidence of an increase in export revenues, but at the same time – of cheaper imports, the displacement of domestic producers from the domestic market of some agro-food products, and the replacement of domestic products with imported ones. First of all, it concerns dairy, alcohol products, fish and crustaceans.

The physical volume index demonstrates a decrease in exports in 2020, expressed in 2019 prices, and a significant reduction in the price of imported products against the background of an increase in imports.

The quantitative index of terms of trade in agri-food products, although improved in 2020 (105.2), but for a small list of products. In particular, only for 7 out of 24 groups: natural shellac (125.1), plant materials for manufacturing (124.9), other products of animal origin (119.5), fats and oils of animal or vegetable origin (113.0), fish and crustaceans (113.1), crops (102.4). For other commodity groups, the terms of trade deteriorated (Indices of physical volume…, 2021).

The price index of terms of trade demonstrates an even worse situation - prices for export goods grew at a slower pace than prices for import goods. For the price index, a positive value was observed only in the group of coffee and tea (117.8) – but in this case, it is re-export; in the group of milk and dairy products, poultry eggs, natural honey (111.2) and in the group of alcoholic and non-alcoholic beverages and vinegar (108.1) – here the loss of the market by domestic producers due to lower production volumes and cheaper imported products. Thus, the unfavourable conditions for trade in agri-food products in Ukraine in 2020 compared to the base year 2019 should be noted (Indices of physical volume…, 2021).

Thus, the deterioration of trade conditions began with the spread of the COVID-19 pandemic and the introduction of restrictive quarantine measures by Ukraine and other countries. The situation with physical volumes of exports and imports, prices for export and import goods have deteriorated rapidly. Export volumes, both in terms of quantity and value, suffered significant losses, while imports gained weight.

In May 2021, compared to the corresponding month of 2020, the situation improved slightly, in particular, export volumes even increased slightly, while prices for agri-food products on world markets increased significantly (Indices of physical volume…, 2021). However, the terms of the trade index demonstrate that despite the improvement in exports, the more dynamic growth of imports deteriorated its value. Assessing the impact of pandemic restrictions due to the spread of the infectious disease COVID-19 on foreign trade in agri-food products will not be complete without analysing changes in the geographical structure.

According to the Ministry of Agrarian Policy and Food of Ukraine (Official website of the…, n.d.), the country exports agricultural products and food to more than 190 countries. China, India, the Netherlands, Egypt and Turkey are the leaders among the importing countries of Ukrainian agri-food products (Table 2). The important role of Ukraine in the world agro-food markets has become particularly evident with the onset of the pandemic when global supply chains were disrupted.

Table 2. Rating of countries-importers of agro-food products from Ukraine

No. s/n	Country	2019		No. s/n	Country	2020	
		Export value, mln dollars US	%			Export value, mln dollars US	%
1	China	1955.1	8.7	1	China	3554.0	15.9
2	Egypt	1674.5	7.5	2	India	1498.0	6.7
3	India	1546.9	6.9	3	Netherlands	1421.6	6.3

Table 2. Continued

No. s/n	Country	2019		No. s/n	Country	2020	
		Export value, mln dollars US	%			Export value, mln dollars US	%
4	Turkey	1544.3	6.9	4	Egypt	1366.9	6.1
5	Netherlands	1476.0	6.6	5	Turkey	1068.6	4.8
6	Spain	1198.6	5.4	6	Spain	984.7	4.4
7	Germany	870.7	3.9	7	Poland	849.7	3.8
8	Poland	785.0	3.5	8	Italy	584.0	2.6
9	Italy	716.0	3.2	9	Germany	581.0	2.6
10	Belarus	604.7	2.7	10	Indonesia	566.2	2.5
	Total for selected countries	12371.8	55.3		Total for selected countries	12474.7	55.7

Source: Calculated by the author based on the data of the State Statistics Service of Ukraine (Foreign trade in certain…, 2021)

In 2020, there were some changes in the ranking of importing countries of Ukrainian agri-food products. According to available data, the countries that have actively increased the volume of trade in agri-food products with Ukraine include China – the growth rate in 2019-2020 was 7.2 pp, thus increasing its share to 15.9% in total exports from Ukraine, a slight increase in the share was observed in the UK – by 0.4 pp and Morocco – by 0.3 pp. The share of imports of Ukrainian agri-food products decreased the most in such countries as Turkey – by 2.1ppt, Egypt – by 1.4ppt, Germany – by 1.3ppt, Spain – by 1.0ppt, Italy and Belgium – by 0.6ppt (Fig. 3).

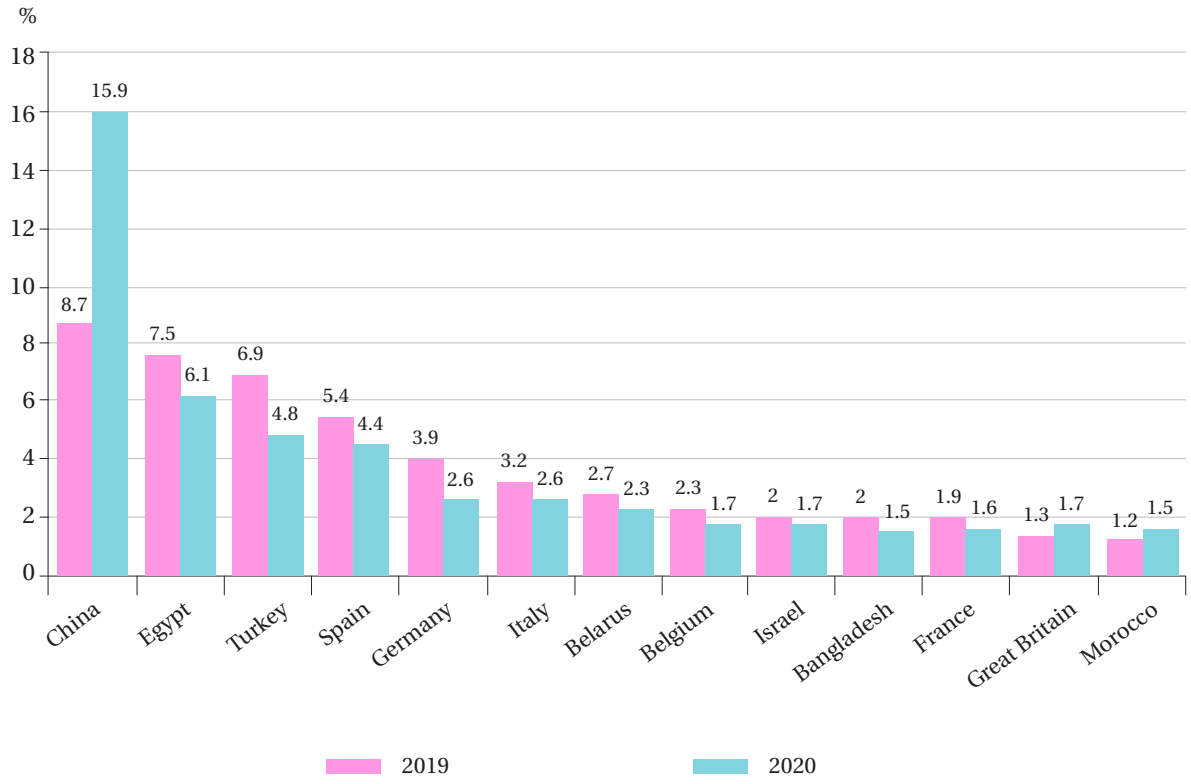

Figure 3. Countries-importers of agri-food products from Ukraine, which have changed their share the most, %

Source: Developed by the author based on the data of the State Statistics Service of Ukraine (Foreign trade in certain…, 2021)

Thus, as the above data demonstrate, the main importers of Ukrainian goods remain in the same countries as before the pandemic, but the volume of exports to them has slightly decreased (except for the main importer of Ukrainian goods – China). As for the main countries-suppliers of agro-food products to Ukraine, in 2020 the top five remained unchanged. These are such countries as Poland, Germany, Italy, Turkey, USA (Table 3). However, there have been some changes among them.

Table 3. Rating of countries-exporters of agro-food products to Ukraine

No. s/n	Country	2019		No. s/n	Country	2020	
		Import value, mln dollars US	%			Import value, mln dollars US	%
1	Poland	658.8	10.7	1	Poland	828.3	12.0
2	Germany	510.5	8.3	2	Germany	503.6	7.3
3	Turkey	416.0	6.8	3	Italy	498.1	7.2
4	Italy	393.9	6.4	4	Turkey	485.4	7.0
5	United States of America	274.9	4.5	5	United States of America	299.6	4.3
6	France	269.2	4.4	6	France	295.6	4.3
7	Netherlands	248.5	4.0	7	Netherlands	284.1	4.1
8	Norway	210.7	3.4	8	Norway	228.4	3.3
9	Spain	190.1	3.1	9	Spain	214.5	3.1
10	China	167.6	2.7	10	China	199.4	2.9
	Total for selected countries	3340.2	54.3		Total for selected countries	3836.8	55.5

Source: Calculated by the author based on the data of the State Statistics Service of Ukraine (Foreign trade in certain…, 2021)

Thus, Poland and Italy during the analysed period (2019-2020) increased sales of agri-food products to Ukraine, in particular, Poland by 1.3ppt, thus increasing its share to 12.0% in total imports to Ukraine, Italy – by 0.8ppt. Ecuador increased its presence in the domestic agro-food market by 0.3 percentage points. Such countries as Germany – by 1.0ppt and Hungary – by 0.3ppt reduced the share of agri-food exports to Ukraine the most (Fig. 4).

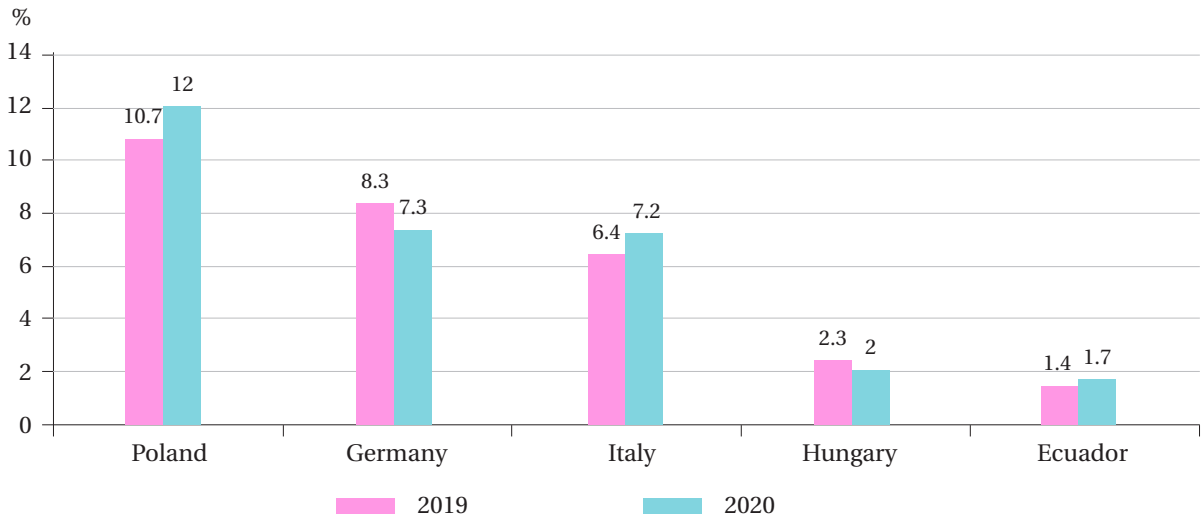

Figure 4. Countries-exporters of agri-food products from Ukraine, which have changed their share the most, %

Source: Developed by the author based on the data of the State Statistics Service of Ukraine (Foreign trade in certain…, 2021)

▸ Conclusions

Thus, according to the analysis, the main exporters of agro-food products to Ukraine remain the same countries they were before the pandemic, but their shares in total imports of agro-food products to Ukraine and the main product groups have changed slightly.

Considering the decline in export growth and the unprecedented increase in imports over the past year and a half, the deterioration of the terms of trade, including due to the pandemic, notably, the deterioration of the situation in foreign trade in agri-food products in Ukraine.

1. Based on the results of the study on the impact of the spread of the COVID-19 pandemic and quarantine restrictions related to it on foreign trade activities in the agricultural sector, the following conclusions can be developed.

2. The domestic agricultural sector, being one of the determinants in the development of national GDP, given the current raw materials and export areas, depends on the foreign economic situation of market demand, which was affected by restrictions related to the spread of the COVID-19 pandemic and the introduction of quarantine measures at the global level. In particular, these are restrictions on trade transactions between states, restrictive measures on the movement of goods, closure of agro-food markets, etc.

3. The volume of exports of agro-food products in 2020 compared to 2019 remained almost unchanged – an increase of 0.2% or 35 million US dollars. For comparison: from 2015-2019, the average annual export growth rate was 11.2%, and in 2019 – 19.0%. The increase in exports of agri-food products by 0.2% in 2020 was largely provided by processed agricultural products, namely fats and oils of animal or vegetable origin and prepared foods. As for agricultural products of both animal and plant origin, there is a significant decrease in exports. Thus, it can be stated the adverse impact of the spread of the pandemic and the introduction of restrictive quarantine measures on the export of domestic agro-food products.

4. In 2020, the volume of imports of agro-food products increased by 13.3% compared to the previous year 2019. For comparison: in 2015-2019, the average annual growth rate of imports was 8.0%, while in 2019, there was a significant decrease of 7.6%. The increase in imports of agri-food products by 13.3% in 2020 was provided by both agricultural products and processed products. In the first half of 2021, the growth rate of imports increased significantly compared to the corresponding period of 2020 and 2019, which indicates a further aggravation of the problem of import dependence on agri-food products. The increase in imports and deceleration of exports resulted in a decrease in the balance of foreign trade in agri-food products by 4.4%.

5. Foreign trade in meat and dairy products has undergone the greatest changes. In particular, during the period from 2019 to 2020, there were two opposite trends in foreign trade in milk and dairy products: an increase in imports and a decrease in exports. Thus, exports of milk and cream decreased by 26.0%, condensed milk – by 23.4%, animal butter – by 38.6%, and cheese – by 11.6%. The volume of imports of milk and cream increased by 3.6 times, condensed milk – 1.6 times, animal butter – 2.9 times, cheese – almost twice, and fermented milk products – 1.6 times.

According to the results of 2020, the volume of imports of meat and meat products decreased by 13% compared to 2019. Exports are characterised by stable volumes – in 2020, an increase of only 0.7 percentage points compared to 2019. In the first quarter of 2021, there was a significant decrease in the supply of meat and meat products to foreign markets compared to the same period of previous years. However, in the second quarter, their active growth began (by 45.2% compared to the first quarter), which contributed to the improvement of the export-import balance.

1. High rates of import growth indicate dissatisfaction with domestic consumer demand by domestic producers of agri-food products in terms of quantity, quality, and price. In the future, such trends will harm the development and functioning of the industry – a decrease in the competitiveness of domestic producers, and loss of market share, which in turn will lead to even worse long-term consequences, such as a decrease in production

due to lower demand, and therefore revenues, profits, dismissal of employees, increased social tension, etc.

2. It is confirmed that with the spread of the COVID-19 pandemic and the introduction of restrictive quarantine measures by Ukraine and countries of the world in response, the terms of trade have deteriorated. The quantitative index of terms of trade in agri-food products for most commodity groups (17 out of 24) decreased. The price index of terms of trade demonstrates an even worse situation – prices for export goods increased at a slower pace than for imports. For the price index, a positive value is observed only in the groups of coffee and tea, milk and dairy products, poultry eggs; natural honey, and alcoholic and non-alcoholic beverages and vinegar – here, the loss of the market by domestic producers due to a decrease in domestic production and cheaper imported products.

3. The main importers of Ukrainian goods remain the same countries that were before the pandemic (China, India, the Netherlands, Egypt and Turkey), but exports to them have decreased slightly (except for China, whose growth rate in 2019-2020 was 7.2 pp). The main countries supplying agri-food products to Ukraine in 2020 remained unchanged. These are Poland, Germany, Italy, Turkey, USA.

Promising areas for further research in this area should include the identification of measures to minimise risks and improve the results of foreign economic activity of the domestic agricultural sector during and after the COVID-19 pandemic.

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Зовнішня торгівля агропродовольчою продукцією України в умовах поширення пандемії COVID-19

Наталія Іванівна Патика

Національний науковий центр «Інститут аграрної економіки»
03127, вул. Героїв Оборони, 10, м. Київ, Україна

▸ **Анотація.** У статті представлено результати дослідження, отримані в процесі виконання проєкту «Оцінювання впливу карантинних заходів, пов'язаних з COVID-19 для аграрного сектору й продовольчої безпеки держави та розроблення алгоритму дій щодо мінімізації негативних наслідків» № 2020.01/0313 конкурсу «Наука для безпеки людини та суспільства» за рахунок грантової підтримки Національного фонду досліджень України. Мета статті – проаналізувати вплив обмежувальних карантинних заходів 2020-2021 рр., пов'язаних із поширенням пандемії COVID-19, на зовнішньоторговельну діяльність в аграрному секторі України. При узагальненні теоретичних і методичних аспектів дослідження використано прийоми абстрактно-логічного методу, аналіз і синтез, індукцію й дедукцію, аналогію та порівняння. З метою діагностики динаміки експорту й імпорту агропродовольчої продукції в аналітичних дослідженнях застосовано економіко-статистичні методи (порівняльного аналізу, середніх і відносних величин, статистичних групувань, трендовий аналіз, графічний метод, індексний, коефіцієнтний аналіз тощо). Низка прийомів абстрактно-логічного інструментарію дозволили сформулювати проміжні та прикінцеві висновки й пропозиції. З'ясовано, що вітчизняний аграрний сектор, зважаючи на його нинішнє сировинно-експортне спрямування, залежить від зовнішньоекономічної кон'юнктури ринкового попиту, на який вплинули обмеження, пов'язані з поширенням пандемії COVID-19 та запровадженням карантинних заходів на глобальному рівні, а саме: обмеження торгових трансакцій між державами, обмежувальні заходи щодо переміщення вантажів, закриття агропродовольчих ринків тощо. Доведено, що з початком поширення COVID-19 умови торгівлі агропродовольчою продукцією в Україні погіршилися. Визначено, що обсяги експорту агропродовольчої продукції в 2020 р. порівняно з 2019 р. практично не змінилися – ріст на 0,2 %. При цьому обсяги імпорту такої за аналогічний період збільшилися на 13,3 %. Перевищення темпів росту імпорту над експортом призвело до суттєвого погіршення зовнішньоторговельного балансу агропродовольчої продукції – зменшення на 4,4 %, що свідчить про негативний вплив поширення пандемії та запровадження обмежувальних карантинних заходів на зовнішню торгівлю вітчизняною агропродовольчою продукцією. Найнесприятливіші тенденції були притаманні зовнішній торгівлі м'ясо-молочною продукцією. Набули подальшого розвитку науково-методичні підходи до оцінювання впливу карантинних обмежень, пов'язаних із поширенням пандемії COVID-19, на зовнішню торгівлю агропродовольчою продукцією в Україні. Результати впливу обмежувальних карантинних заходів на стан зовнішньої торгівлі агропродовольчою продукцією у 2020-2021 рр. можуть бути враховані при розробленні ефективної адресної державної політики, спрямованої на підвищення конкурентоспроможності аграрного сектору, забезпечення стабільних позицій України на світовому ринку агропродовольчих продуктів, а також соціально-економічного розвитку країни в умовах пандемії

▸ **Ключові слова:** аграрний сектор, зовнішня торгівля, агропродовольча продукція, карантинні заходи, Україна