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Challenges and Prospects of the Effective Development of Ukraine's Agricultural Exports

Abstract. The purpose of the article is to demonstrate that the highly specialized, raw material-oriented structure of Ukrainian commodity exports is irrational and economically ineffective. One of the challenges in this regard (from the state's point of view) is the extremely low price of Ukrainian agricultural products on the global market. The author proposes ways of strengthening the effectiveness of the Resolution of the Cabinet of Ministers of Ukraine concerning the approval of minimum allowable export prices for certain types of goods and evaluates trends and structural changes in Ukraine's exports of sunflower oil, corn and wheat that occurred as a result of geoeconomic and geopolitical factors. The data presented in the article reveal changes in the share of Ukraine's exports of sunflower oil, corn and wheat to countries that have been the main importers of Ukrainian agricultural products. Based on the results of his analysis, the author outlines prospects for the economically efficient development of Ukrainian agricultural exports.

Keywords: agricultural export, sunflower oil, corn, wheat
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1. Introduction

According to the EU Facility Program, the Ukrainian Agricultural Sector is an area of economic activity with potential for rapid economic growth. The key to the domestic agro-industrial sector's future lies in its price and quality competitiveness in both local and global markets. Agro-industrial products play a key role in Ukraine's commodity exports: in 2023 they accounted for 60.8% (compared to 40.7% in 2021) (SSSU, 2024) but in the first 9 months of 2024 decreased to 58.1% (SCSU, 2024). Agricultural exports are among the most significant sources of foreign currency for Ukraine; in the context of current challenges faced by the coun-

try, the sufficient supply of these products depends largely on its socio-economic stability and plays a crucial role in the global market of agricultural commodities, particularly in the EU, Africa and Asia. As a result, any factors threatening the prospects of Ukraine's agricultural exports are not only of national, but also of global importance. At the same time, over the past decade, and especially in 2022, Ukrainian commodity exports have changed considerably, mainly owing to non-economic, geopolitical factors, the Russian-Ukrainian war, the reorientation of markets and logistics, exchange rate fluctuations, etc. Ukrainian commodity exports, their efficiency and structure also significantly depend on changes in the global market for raw materials and finished products, as well as the level of innovation, technologies and structure of the Ukrainian industry. It follows that the risks to Ukraine's export potential and prospects for increasing it are associated with a number of multifaceted tasks that require scientifically sound solutions and further applied research.

The purpose of the following study is to identify and provide a detailed description of the challenges and factors that could affect the effective and rational (from the state's perspective) development of Ukraine's agricultural exports. By analysing empirical data the author has identified key problems and outlined prospects for the development of Ukraine's agricultural exports.

Problematic aspects of agricultural exports in the conditions of a full-scale war have been the subject of international research. Shubravska et al. (2024) analyses the commodity and geographical structure of Ukrainian agricultural exports in the conditions of a full-scale war and refutes views expressed by Eastern European farmers about the extraordinary influx of Ukrainian agricultural products. Potori and Molnar (2024) analyse the impact of the war on agricultural trade, especially a sharp increase in corn exports from Ukraine to Hungary during the marketing year 2022/2023.

Interesting analytical conclusions can be found in the study conducted by Countryman et al. (2024), who demonstrate that "net global welfare losses ranging from more than USD 5 billion to almost 20 billion, depending on the success of transportation through European Solidarity Lines".

Mottaleb et al. (2022) report that "a 50% reduction in wheat exports by Russia and Ukraine could increase the producers' price of wheat by 15%, which would induce a reduction in wheat consumption and dietary energy intake by at least 8%".

A team of Chinese authors (Chen et al., 2024) found that as a result of the war between Russia and Ukraine, "approximately 18.11 ± 2.47% of croplands were left unplanted. Among the cultivated areas, wheat, sunflower and rapeseed, experienced average production losses of 36.39–37.19% in 2022 compared to pre-war levels during 2019–2021".

Key areas of development of Ukraine's agro-industrial market in the conditions of martial law and its place in the global food security system are characterized in the study by Hubeni et al. (2024).

While these studies provide interesting insights, their authors do not pay enough attention to the agricultural sector itself and Ukrainian exports, both of which have changed, to the challenges faced by global competition, to the sector's prospects and almost completely ignore the issues of economic rationality and efficiency (from Ukraine's perspective) of its agricultural exports. This study is therefore an attempt to fill this research gap, which is particularly relevant given Ukraine's need to develop its agricultural exports as a way of strengthening its economy, boosting its foreign exchange earnings, creating new jobs and increasing innovation and technological research.

2. Materials and Methods

The achievement of the goal of the study was carried out through the widespread use of methods of economic analysis and scientific research, in particular. To identify possible discrepancies in errors when determining the cost of goods in the exporting and importing countries or probable abuses to avoid taxation in export-import transactions, the Mirror data methodological approach was applied. The essence of the approach is to compare the price of the same goods in the exporting and importing countries. The difference between these prices should be minimal or absent or approximately reflect the transport costs for delivering goods from one country to another. The peculiarity of using this approach in this study was to compare the difference between the export and import price for the same goods with the probable values of transport costs (depending on the distance between the supplier (exporter) and consumer (importer) countries).

The information base of the study was the elaborated data of the State Statistics of Ukraine, the State Customs Service of Ukraine, the Trade Mape statistical base analytical reports on Agrarian exports of Poland. During the study period, 2021–2023 and monthly data of 2024 were selected. The use of this period contributed to the formation of an assessment regarding changes in the agricultural export of Ukraine and the corresponding import of its main trade partners.

3. Results and Discussion

Despite its significant importance for the country's economy and social spheres, the effective development of Ukrainian agro-industrial exports in the conditions of the Russian-Ukrainian war has been hindered by systemic internal and external factors. The most important among them are the following:

3.1. Direct Consequences of the Russian Invasion of Ukraine

Since the end of 2023, the Ukrainian agricultural sector has suffered direct losses amounting to more than USD 80 billion. According to a 2024 briefing of the European Parliamentary Research Service (EPRS), The reconstruction of Ukraine's agriculture is expected to cost USD 56.1 billion, and demining an additional USD 32 billion.

3.2. Irrational Structure and Low Economic Rationality of Ukraine's Agricultural eEports

Despite the significant amount (60 million tons), the value of Ukraine's agricultural exports has been relatively low. According to SSSU data, in 2021, USD 27.8 billion worth of agricultural products were exported from Ukraine), while agricultural exports from Poland amounted to USD 41 billion, and in 2023 — USD 22 billion from Ukraine compared to USD 55 billion from Poland, according to official government data published by Poland's National Support Centre for Agriculture (KOWR, 2024). However, in the first 9 months of 2024 (compared to the corresponding period of 2023), the value of Ukraine's agricultural and industrial exports increased by 10.5% (from USD 16.2 billion to USD 17.9 billion).

The key reason for the relatively low value of Ukrainian agro-industrial exports is the extremely low diversification of their structure and a narrow specialization in three or four unprocessed product categories, which fetch low prices per unit of production.

Traditionally, in 2021 and in 2023, sunflower oil, corn, and wheat accounted for the largest share of agricultural products exported from Ukraine. In 2023, these three commodities accounted for 58.7% (compared to 62.7% in 2021) of Ukrainian agricultural exports (Fig. 1), and in the first 9 months of 2024, their share decreased to 57.9% (compared to 59.2% in the same period of 2023).

By way of comparison, the structure of Poland's agro-industrial exports is more diversified, with the largest percentage shares of goods of higher value, in particular: meat, meat products and animal husbandry (19%); grain crops (15%); tobacco

and tobacco products (11%); sugar and sugar products (7%); dairy products (6%); and other product positions with a higher price (Fig. 2).

The total value of sunflower oil, corn and wheat exported from Ukraine in 2023 amounted to USD 12.9 billion, or 58.7% of the country's agricultural exports. In the same year, the value of meat, edible meat offal, and animals exported from Poland amounted to USD 10.8 billion which accounted for 19% of the country's agricultural exports. In 2023, the export price of 1 ton of Ukrainian sunflower oil in the international market was USD 872, the price of corn was USD 188, wheat — USD 182, meat and edible poultry offal — USD 1800 (Trade Map, 2024). It can therefore be concluded that the structure of Ukrainian agricultural exports dominated by grain crops and sunflower oil is irrational taking into account the amount of revenue that that can be generated from such exports.

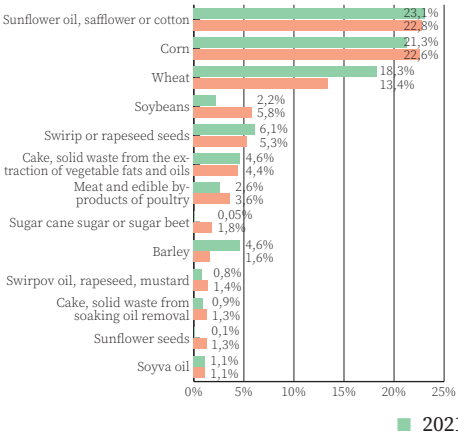

Fig. 1. Structure of Ukraine's agricultural and industrial exports
Source: Data published by SSSU (2024)

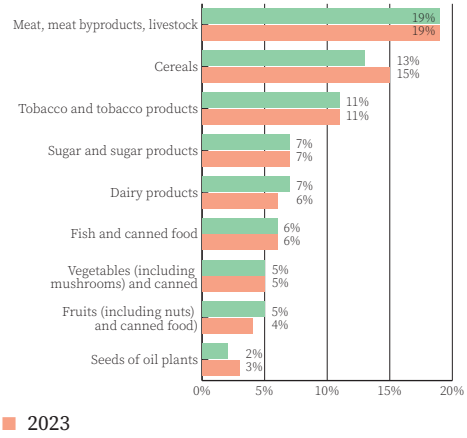

Fig. 2. Structure of Poland's agricultural and industrial exports of Poland
Source: Data published by KOWR (2024)

However, in 2023 and for the first 9 months of 2024, the structure of Ukraine's agro-industrial exports started to become more diversified, with increasing shares of higher value goods and the level of processing of raw materials.

In particular, the value of exported meat and edible meat offal in 2023 (compared to 2021) increased by 5.5% and reached USD 892.3 million. In the first 9 months of 2024, the share of this product category reached 4.3%, and the export volume increased by 13.7% (from USD 680 million to USD 773.7 million.)

Compared to 2021, exports of sugar and sugar products in 2023 increased by 141.2% (from USD 246.5 million to USD 596.4 million, respectively), and in the first 9 months of 2024 (compared to the corresponding period of 2023) — by 17.3% (from USD 381.5 million to USD 447.3 million).

It can therefore be concluded that these changes represent a positive structural trend, which in the medium term could significantly increase the value and improve the technological structure of Ukrainian agro-industrial exports.

3.3. Economic and Regulatory Factors

Given Ukraine's current specialization in agricultural and industrial exports, a lot depends on the extremely dynamic export price of grain crops and sunflower oil, which can be caused by fluctuations in crop yields, changes in demand and supply in global markets. Price fluctuations for key export commodity categories have an impact on quantitative indicators, which can cause financial instability of the country's agro-industrial activity. Thus, in 2021, with a price increase of 60.6%, the volume of exports decreased by 25%, while in 2023, a decrease in the export price for 1 ton of Ukrainian sunflower oil by 31.6% was accompanied by an increase in the volume of exported oil by 32.6% (Fig. 3).

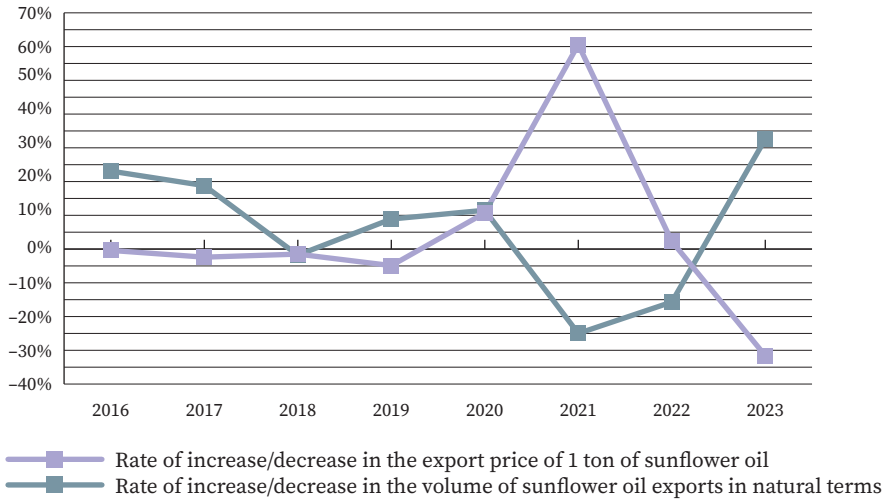

Fig. 3. Rate of increase/decrease in the export price and volume of sunflower oil exports from Ukraine
Source: Data published by Trade Map (2024)

In addition to that, another feature of Ukrainian agro-industrial exports is that Ukrainian sunflower oil, corn and wheat traded on global markets are sold at extremely low prices. As already noted, the export price for 1 ton of Ukrainian sunflower oil in 2023 was USD 872, whereas, according to the IMF data (World

Economic Outlook, 2023), the world export price for the same commodity was USD 1,218, i.e. 39.7% higher. Significantly lower export prices of Ukrainian products (sunflower oil, wheat and corn) compared to their prices on global markets have been observed for many years. For this reason, state control over export prices was and is a necessity. Therefore, it can be expected that the implementation of the resolution issued by the Cabinet of Ministers of Ukraine on August 21, 2024, regarding the procedure for the approval of minimum permissible export prices for certain types of goods will contribute to the growth of Ukraine's budget revenues and foreign exchange earnings from agricultural exports. According to the resolution, minimum allowable export prices for certain types of goods are calculated on the basis of depersonalized information provided by the State Customs Service on the export of certain types of goods in customs declarations in the form of a single administrative document, taking into account the conditions of deliveries for the previous month with the application of a 10 percent discount (PAMPE, 2024).

The methodical approach to determining the minimum allowable export price described in the resolution is appropriate and logical. However, in order to eliminate the probable risk of monopolistic collusion on the part of exporters, this approach could be supplemented with a certain weighted average adjustment that takes into account export prices of Ukraine's main competitors and/or world prices for goods which the minimum allowable export price is applied to.

Additional information that could be used to determine the minimum allowable export price and/or minimize the risks of tax evasion could come from the analysis of mirror data, which involves comparing per-unit prices of products declared in the exporting country (export price) with the price in the importing country (import price). According to available data, particularly those published by Trade Map, a full or approximate correspondence of export and import prices is rare. The lowest differences between these prices can be found in neighbouring countries but the greater the distance between the supplier country and the country of destination of the goods, the higher the differences tend to be. It can therefore be concluded that the difference between the import and export per-unit price of goods may reflect the costs of transport, insurance and logistics. This assumption is confirmed by the fact that some countries record the same product using the CIF (Cost, Insurance, and Freight) price, which includes transport and insurance costs, while others use the FOB (Free On Board) price, which excludes these costs. However, in addition to transport and insurance costs, the difference between import and export prices may arise due to technical errors, differences in the classification of goods, and may also reflect the volume of tax evasion. In view of this, mirror data analysis is used in international foreign trade statistics

and customs services in order to reduce the risks of concealing real income from export and import activities and to eliminate accounting and statistical discrepancies between countries. After comparing import and export prices for 1 ton of Ukrainian sunflower oil, the following discrepancies attracted attention. In 2023, the export price of 1 ton of Ukrainian sunflower oil exported to Romania was USD 818, while the import price for the same commodity imported to Romania from Ukraine was USD 1280 USD (Table 1).

Table 1. Export and import price for 1 ton of sunflower oil exported from Ukraine, USD

Country	2023			
	Export price from Ukraine	Import price in the destination country	Difference between import and export price, USD	Difference between import and export price,%
Romania	818	1280	462	56.5
Turkey	790	1020	230	29.1
China	940	1208	268	28.5
Poland	852	902	50	5.9
Netherlands	930	1021	91	9.8
India	901	1091	190	21.1
Spain	850	1065	215	25.3
Italy	857	1041	184	21.5
Bulgaria	767	926	159	20.7
France	1207	1192	−15	−1.2
Germany	946	1198	252	26.6
Egypt	781	1315	534	68.4

Source: Based on data published by Trade Map (2024)

Thus, the difference between the import and export price of 1 ton of Ukrainian sunflower oil delivered to neighbouring Romania in 2023 amounted to USD 462 or 56.5%. In contrast, in the case of Poland the difference between the import and export price was only USD 50 or 5.9%. Interestingly, the difference identified in the case of Romania significantly exceeds differences for India and China, despite the fact that transport routes to these countries are much longer. It is also difficult to explain, the negative difference of USD −15 USD, or −1.2%, between the imptort and export price for 1 ton of Ukrainian sunflower oil in the case of France. Such negative difference between import and export prices occur for various goods and in other countries. In such cases, it can be assumed that the goods in the importing country are sold at a price that is lower than that that declared in the exporting country, and is a sign of unprofitable export activity in certain areas. However,

such differences may also be the result of reporting errors or attempts to evade taxes. The relatively low export prices for 1 ton of Ukrainian sunflower oil delivered to Egypt (USD 781), Bulgaria (USD 767) and Turkey (USD 790) also stand out. The difference reported in 2023 in the case of India, which was USD 190, is also worth noting. According to other data published by Trade Map (not included in the article), the difference reported for sunflower oil exported from Romania to India was only USD 89. It can therefore be assumed that in 2023 the cost of transporting 1 ton of sunflower oil from Ukraine was 113% higher than the same indicator in Romania (190 USD versus 89 USD). A similar situation was observed for 2021, when the difference between the import and export price for 1 ton of Ukrainian sunflower oil exported to Romania was 300 USD, while in the case of Egypt — USD 194 and for India — USD 81. In the light of mirror data analysis, similar questions can also be raised regarding the difference between the import and export price of corn and wheat.

At the same time, one should remember that the above comparisons are just examples of mirror data analysis, the purpose of which was to highlight the usefulness of this method for identifying discrepancies between import and export prices of key commodity items of Ukrainian agricultural exports. Objective conclusions regarding the reasons for the difference between import and export prices of agricultural products from Ukraine (including possible tax evasion) can be made only after a detailed analysis of customs documentation for individual goods and countries in order to compare real transportation costs with the identified price discrepancies.

3.4. Geoeconomic and Geopolitical Confrontations and International Competition

Geoeconomic and geopolitical events caused by Russia's full-scale invasion of Ukraine led to the reorientation of Ukrainian agro-industrial exports in general and in terms of commodity categories from Asian countries to EU countries. In particular, the share of EU countries in the structure of Ukraine's agro-industrial exports increased from 28.6% in 2021 to 53.4% in 2023. In monetary terms, agricultural exports to EU countries in 2023 (compared to 2021) rose by 64.5% and reached USD 12.5 billion, and in the first half of 2024 — USD 6.2 billion (Trade Map, 2024).

Sunflower oil has traditionally been Ukraine's most important export agricultural commodity, accounting for 22.8% of all agricultural exports. Since 2006 and until now, Ukraine has been the world's leading exporter of commodities categorised as "Sunflower, safflower or cottonseed oil" (SITC code: 1512). In 2023, Ukraine's exports of these products accounted for 27.7% of global exports, com-

pared to 36.6% in 2021and 39.8% in 2020 — the highest value since 2006. The value of Ukrainian exports of these products in 2023 amounted to USD 5 billion, down by 22% compared to 2021. In the first 9 months of 2024 and 2023, Ukraine exported USD 3.7 billion worth of sunflower oil.

Ukraine's most important competitors on the global market of sunflower oil are the Russian Federation, Turkey, Hungary and Bulgaria (Table 2). Market shares of these countries during the last decade kept growing, not only owing to economic factors, but also as a result of the direct and indirect influence of Russia's war against Ukraine.

Table 2. Shares of the leading exporters of products categorised as sunflower, safflower or cottonseed oil (SITC code: 1512) (in value terms)

Country	2006	2011	2015	2020	2021	2022	2023
Ukraine	24.5%	31.9%	35.1%	39.8%	36.6%	25.2%	27.7%
Russian Federation	10.2%	6.2%	13.5%	18.5%	17.8%	16.2%	17.9%
Turkey	2.3%	3.5%	8.0%	5.5%	5.4%	8.7%	7.5%
Netherlands	7.9%	6.7%	5.0%	5.5%	4.9%	5.0%	5.5%
Hungary	3.1%	4.1%	4.9%	3.6%	4.0%	4.6%	5.0%
Bulgaria	0.8%	1.5%	2.6%	3.4%	4.4%	7.6%	4.7%
Argentina	18.7%	12.1%	5.0%	2.3%	4.4%	3.8%	4.2%
France	7.0%	6.9%	4.5%	3.0%	3.0%	3.7%	3.7%

Source: Based on data published by Trade Map (2024)

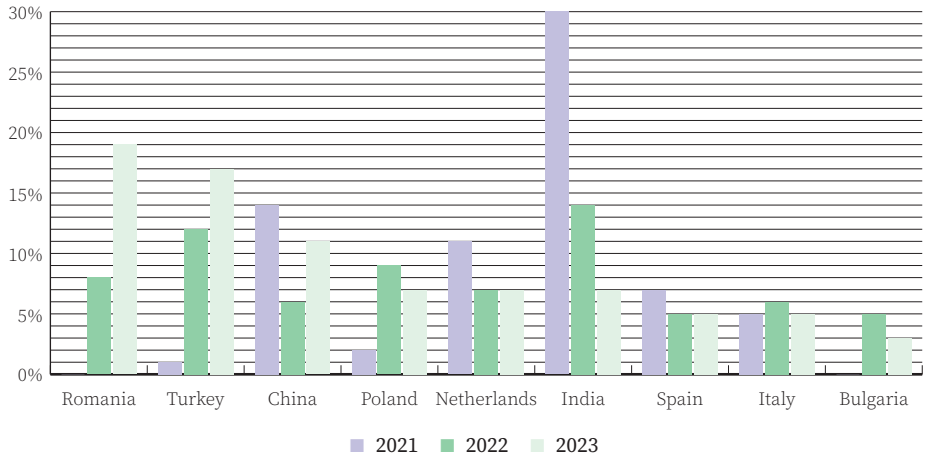

Fig. 4. Shares of the main importers of Ukrainian products categorised as sunflower, safflower or cottonseed oil (SITC code: 1512)
Source: Based on data published by Trade Map (2024)

As regards the main recipients of Ukrainian sunflower oil (Fig. 4), India was the largest importer during 2009–2021, accounting for 30% of total Ukrainian exports of this commodity category in 2021, 43% in 2018 (the highest value), and 22% in 2009. However, in 2022 India's share decreased to 14%, and in 2023 to just 7% % (Fig. 4).

The value of Ukrainian sunflower oil exported to India in 2023 decreased to USD 337.5 million (compared to USD 1.9 billion in 2021). This decline was a consequence of India's significant increase in imports of these products from the Russian Federation, especially in the period of 2022–2023. In 2014, Ukraine's share in India's imports of products categorised as "Sunflower, safflower or cottonseed oil" (SITC code: 1512) was 99%, in 2021 — 75%, and in 2023 — just 37%. At the same, the share of the Russian Federation in India's imports increased from 0% in 2014 to 12% in 2021 and 32% in 2023. In addition to Ukraine and the Russian Federation, Argentina was another major supplier of these products to India in 2023, accounting for 17% of India's imports (compared to 0.1% in 2014 and 99% in 2005). It follows that India, which is the world's largest importer (18%) of sunflower oil, as a result of and during the Russian-Ukrainian war tried to minimize geopolitical risks by diversifying the geographic structure of sunflower oil imports. It is also important to note that in the first 9 months of 2024, exports of Ukrainian sunflower oil to India started to grow and reached USD 428.1 million (compared to USD 337.5 million in 2023), as did India's share in Ukrainian sunflower oil exports, which increased to 11.4%. Therefore, it can be hoped that the export of Ukrainian sunflower oil to the world's largest importer of this product in the short term will recover significantly.

The second largest importer of Ukrainian sunflower oil until 2022 was China. Its share in the global imports of sunflower oil in 2023 reached 9.4%. In 2023, 11% of Ukrainian sunflower oil (compared to 14% in 2021) was exported to China. In 2014, Ukraine supplied 94.5% of China's demand for sunflower oil (compared to 0% in 2009). But starting from 2015, Ukraine's share gradually decreased and in 2023 was equal to only 39.6%. At the same time, the share of Russian sunflower oil imported by China increased from 5% in 2015 to 52% in 2023.

In 2023, the largest importers of Ukrainian sunflower oil were Romania (19% vs. 0% in 2021) and Turkey (17% vs. 1% in 2021). However, Ukraine's share in Romania's total imports of sunflower oil was extremely unstable, ranging from 6.4% in 2021, reaching a high of 43% in 2022, and falling to 19.2% in 2023. In contrast, Ukraine's share in Turkey's total imports of sunflower oil was marked by a steady growth: from 4.9% in 2021 to 68.6% in 2023. In the first 9 months of 2024, the value of Ukrainian sunflower oil exported to Romania reached USD 425.1 million, accounting for 11.3% of Ukraine's total exports of these products.

The share of EU countries in Ukraine's exports of sunflower oil increased from 11% in 2013 to 50.9% in 2023, while the share of Asian countries decreased from 68.4% to 42.5%, respectively. In 2023, Ukraine supplied 95% (compared to 45% in 2013) of sunflower oil to meet the import needs of the EU market. In 2023, EU countries accounted for 31.8% of global imports of sunflower oil, while Asian countries accounted for 47.9%. In the first half of 2024 (compared to the corresponding period of 2023), the value of Ukrainian sunflower oil exported to EU countries increased by 45% and reached USD 1.7 billion, while the value of exports to Asia decreased by 56.4% and amounted to USD 967.7 million.

Corn (SITC code: 1005) is the second most important commodity in the structure of Ukraine's agricultural exports, with a share of 22.6% in 2023 (compared to 21.3% in 2021). Compared to 2021, the export of Ukrainian corn in 2023 decreased by 17% (from USD 5.9 billion to USD 4.9 billion), and in the first 9 months of 2024 it amounted to USD 3.7 billion. Globally, Ukraine has been consistently (except for 2021) the fourth largest exporter of corn, behind the USA, Brazil and Argentina. Compared to 2021, Ukraine's share in the global corn market in 2023 decreased by 2 percentage points to 9%, significantly surpassing the shares of France, Romania and Poland (nearest neighbours in the rating) (Fig. 5).

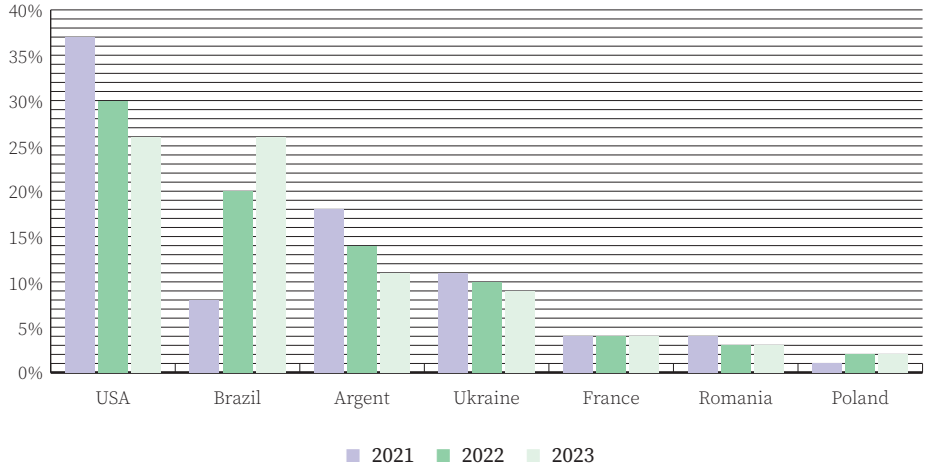

Fig. 5. Shares of the leading exporters of corn (SITC code: 1005) (in value terms)
Source: Based on data published by Trade Map (2024)

Until 2021, Ukrainian corn was mainly exported to China, Spain, Egypt, Italy and the Netherlands, Portugal, and from 2022 also to Romania and Hungary (Fig. 6). However, as a result of global transformations, the shares of these countries in Ukrainian corn exports have changed significantly. For example, China's

share decreased from 31.8% in 2021 to 21.8% in 2023, and to 14.7% in the first 9 months of 2024.

Starting from 2021, China has been the world's largest importer of corn, which in 2023 accounted for 14.8% of global imports of this commodity. During 2014––2021, China exported corn mainly from the USA and Ukraine. During this period, the USA's share began to increase, while that of Ukraine kept falling. For example, in 2015, 79.2% of China's corn imports came from Ukraine, while the USA supplied only 10.9%.

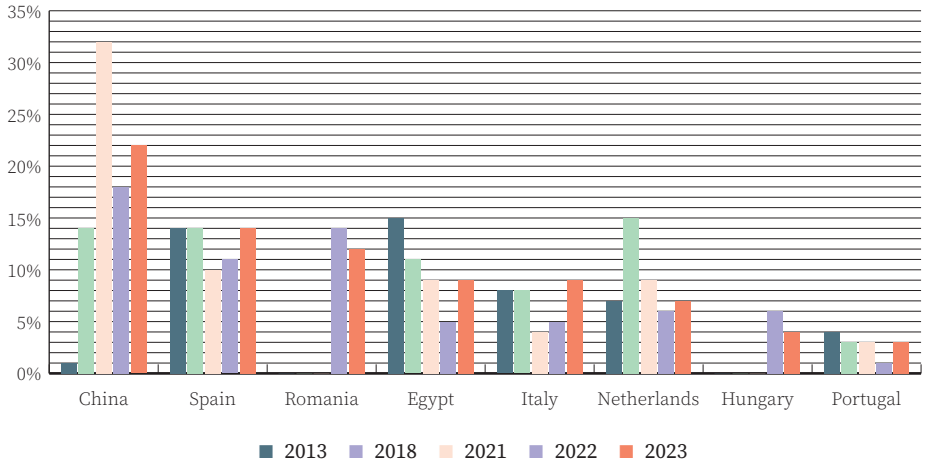

Fig. 6. Shares of the main importers of Ukrainian corn
Source: Based on data published by Trade Map (2024)

In 2021, Ukraine's share decreased to 29.3%, while that of the USA increased to 69.9%. However, in 2023, 44.9% of China's corn imports came from Brazil, 28.9% from the USA, and 20.1% from Ukraine. According to information announced by Argentine organizations (CIARA and CEC) representing grain exporters, shipments of corn to China were to start from mid-2024 (APK-Inform, 2024).

Spain is the second biggest importer of Ukrainian corn. In 2023, it accounted for 13.8% of Ukraine's corn exports (compared to 9.9% in 2021), and 18.0% in the first 9 months of 2024. In 2023, Ukraine exported USD 683.2 million worth of corn to Spain, which is 56% more than in 2021. The value of corn exported to that country from January to September 2024 amounted to USD 662.8 million.

Ukrainian corn makes up the biggest share of Spain's total imports of this commodity. In 2023, Ukraine's share reached 40% (compared to 27.4% in 2021). Spain also imports corn from Brazil and France. In 2023, Brazil supplied 23.7% of corn imported to Spain (compared to 21.9% in 2021), while France's share decreased to 12.9% from 18.9% in 2021.

In geographical terms, over the last few years the structure of exports of Ukrainian corn has shifted from the Asian market to the EU. In 2023, the EU's share almost doubled, from 30.1% in 2021 to 59.1% in 2023, while the share of Asian countries decreased from 53.2% in 2021 to 28.3 % in 2023. In 2023 exports of Ukrainian corn to EU countries increased by 70.6% to USD 2.9 billion from USD 1.7 billion in 2021, whereas exports to Asia fell by 121.4 % to USD 1.4 billion from USD 3.1 billion in 2021. However, in the 1st half of 2024 exports of Ukrainian corn to Asia increased by 4.4% to USD 1.2 billion from USD 1.1 billion in the first half of 2023, while exports to EU countries decreased by 34.8% to USD 1.4 billion from USD 1.9 billion. In 2023, 24.7% of all corn imported by the UE came from Ukraine; on the global level, EU countries accounted for 19.3 % of corn imports while Asian countries for 46.7 %.

Wheat is Ukraine's third largest agricultural export commodity. As a result of the war, in particular the shelling of Ukrainian seaports by Russia and other geopolitical challenges, exports of Ukrainian wheat in 2023 decreased by 72.4% to USD 2.9 billion from USD 5.0 billion in 2021. However, in the first 9 months of 2024, exports bounded back slightly to USD 3.0 billion. Compared to 2021, the share of wheat in the structure of Ukraine's agro-industrial exports in 2023 decreased by 4.9 percentage points, from 18.3% to 13.4%, but then went up to 16.7% in the first 9 months of 2024. In 2023, Ukraine was the 6th largest exporter of wheat, ahead of its nearest neighbours: Romania, Poland, Germany, Kazakhstan and Bulgaria (Fig. 7). Between 2021 and 2023, Ukraine's share of this market declined by 4 pp. (from 9% to 5%).

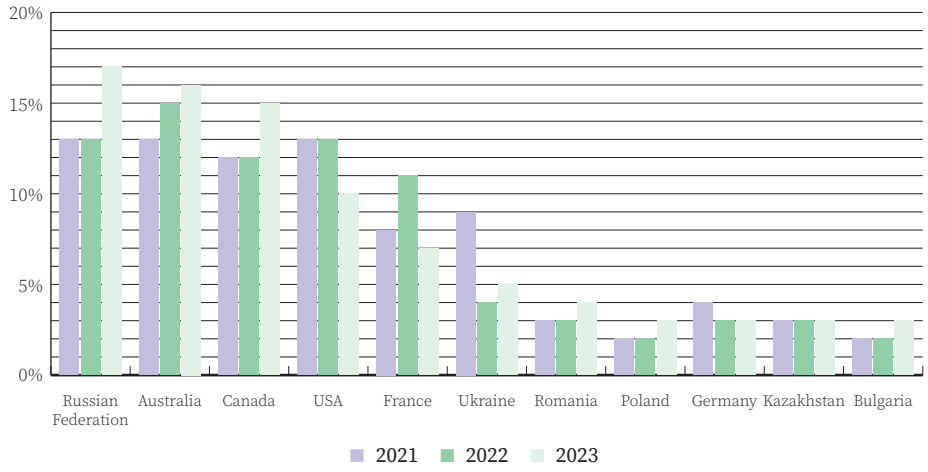

Fig. 7. Shares of the leading exporters of wheat (SITC code: 1001) (in value terms)
Source: Based on data published by Trade Map (2024)

Over the last few year the geographical structure of Ukraine's wheat exports have changed considerably. By 2021, more than 30% of Ukrainian wheat was imported by Egypt, Bangladesh and Indonesia, and in 2023 — by Spain, Turkey and Romania (52.5%). In other words, Egypt's share declined from 16.9% in 2021 to just 7% in 2023 , as did Indonesia's share, which fell from 14.4% to 4% (Table 3). In contrast, Spain's share over the same period increased from just 0.8% to as much as 23.1%. In the first 9 months of 2024, 26.8% of Ukrainian wheat was exported to Spain, 12.2% to Indonesia, and 9.8% to Egypt. These changes, especially those that took place in 2022–2023, were mainly due to a decrease in Ukraine's export share accompanied by growing imports of Russian wheat by Egypt and Indonesia. While in 2021 Ukrainian wheat accounted for 25.3% of Egypt's total wheat imports, this share fell by 13.4 percentage points to 11.9% in 2023. At the same time, Egypt's imports of Russian increased from 52.1% to 67.4% (+15.3 percentage points). However, at the same time, Ukraine's share in Spain's wheat imports increased by a whopping 37.7 percentage points from 2.3% to 40%. Interestingly, in the same period Turkey continued to increase its import of wheat both from Russia and from Ukraine: Turkey's imports of Russian wheat increased from 69.5% in 2021 to 75.2% in 2023, while imports of wheat from Ukraine rose from 17.5% to 20.6%, respectively. The countries to which most Ukrainian wheat is exported are also among the world's five biggest importers of this commodity: Egypt (2nd), Indonesia (3rd), Turkey (4th), and Spain (5th).

Table 3. Shares of the main importers of Ukrainian wheat (SITC code: 1001)

Country	2006	2011	2015	2020	2021	2022	2023
Spain	5.9%	20.8%	6%	2%	0.8%	8.5%	23.1%
Turkey	0.0%	12.4%	1.7%	5.8%	8.8%	17.8%	15.2%
Romania	0.0%	0.0%	0.0%	0.0%	N/A	12.3%	14.2%
Egypt	10.3%	9.4%	13.9%	17%	16.9%	9.0%	7.0%
Bangladesh	8.5%	2.6%	6.1%	8.2%	4.3%	2.4%	5.8%
Indonesia	1.3%	0.0%	7.0%	15.1%	14.4%	3.0%	4%
Italy	6.5%	5.8%	4.8%	1.1%	0.6%	2.9%	3.5%
Lebanon	0.2%	1.9%	2.1%	3.7%	3.2%	3.8%	2.5%
Poland	0.0%	1.2%	0.0%	0.0%	0.0%	4.9%	2.3%
Greece	0.3%	0.3%	0.4%	0.5%	0.2%	1.3%	1.9%
Vietnam	0.0%	0.1%	0.4%	1.5%	1.3%	0.9%	1.7%
Pakistan	0.0%	0.0%	0.0%	7.2%	7.0%	3.2%	1.5%
Israel	9.8%	8.5%	4.2%	1.5%	1.7%	1.3%	1.5%
Saudi Arabia	0.0%	4.8%	0.0%	0.4%	3.7%	1.9%	1.2%
Kenya	3.9	0.9	1.1	0.5	1.8	0.8	1.2

Source: Based on data published by Trade Map (2024)

It follows from the above analysis that in recent years Ukraine's wheat exports have been rapidly reoriented from the Asian to the EU market, as evidenced by a decrease in the share of Asian countries from 57.2% in 2021 to 38% in 2023 (−19.2 p.p.) and an increase in the share of EU countries from 1.9% to 49. 6%. In monetary terms, while exports of Ukrainian wheat to Asian countries decreased by 163.6% (from USD 2.9 billion to USD 1.1 billion), exports of EU countries increased more than 15 times (from USD 95.7 million to USD 1.5 billion). In 2023, Ukraine supplied 12.5% of wheat imported by EU countries. At the same time, the share of EU countries in global wheat imports increased from 14.3% in 2021 to 18.5% in 2023 (+4.2 p.p.), whereas the corresponding share of Asian countries decreased from 45.2% to 43.7 % (−1.5 p.p.).

4. Conclusions

Based on the analysis of Ukrainian agricultural exports, it is possible to outline a number of recommendations regarding its their development:

4.1. Increase Diversification and Expand Specialization of Agro-Industrial Exports

In order to increase the value of agro-industrial exports, economic and social effects (budget revenues, creation of new jobs, strengthening of internal intersectoral relations), it is necessary to provide financial assistance and create conditions to foster the growth of the share of goods with a higher value and level of processing, particularly ready-made food products. Ukraine's Financial Program from the EU Facility can be used as an effective financial and organizational tool to achieve this goal. Among other things, this programme is intended to finance digitization, automation and transparency, productivity of the agro-industrial sector and supporting the sector along the EU model. It is expected that the programme will help to increase the number of small and medium-sized enterprises which specialize in advanced, innovative ways of processing raw materials and manufacturing of agro-industrial products with high added value, which could be exported at higher prices. In addition, a number of state credit, grant and regional programmes aimed at supporting enterprises specializing in raw material processing provide significant financial support to drive qualitative structural changes in the country's agro-industrial sector. Ukraine's Export Credit Agency, the «Made in Ukraine» programme also offer financial support to farmers working in areas of possible or active hostilities. Considerable expectations regarding substantial

crediting of agricultural production are also associated with agricultural notes, an instrument provided for in a legislation which came into force on January 1, 2025. It is important to note that Ukraine, even in the face of Russia's military aggression is capable of almost completely meeting its needs regarding high-quality ready-made food products and has the potential to increase their exports. However, small and medium-sized domestic enterprises specializing in the production of ready-made food products are often limited to operate in the domestic market due to concerns about overcoming technical barriers to access to foreign markets. The state is conducting significant work to solve informational, advisory and financial issues in order to support exporters even in war conditions through the Diya Business portal, the Chamber of Commerce and Industry. The key role in this respect is played by Ukraine's Ministry of Agrarian Policy and Food and the Ministry of Economic Development and Trade. Therefore, it can be expected that the process of gradual diversification of agro-industrial exports to increase shares of goods with higher added value, which began in 2023, will continue.

4.2. Diversify the Geographical Structure of Agro-Industrial Exports

In the conditions of intensified geopolitical and geoeconomic confrontations, the geographical structure of Ukraine's agro-industrial exports should be optimally adjusted to mitigate economic risks and increase Ukraine's economic benefits. From the point of view of economic efficiency, Ukraine can earn more revenue by exporting agro-industrial products to EU countries, which are located much closer to Ukrainian manufacturers and suppliers, which means lower costs of transport and logistics. Further benefits can be derived from the duty-free regime of trade with Ukraine, established by the EU from the beginning of 2022, as well as relatively low customs tariffs for Ukrainian imports. For example, while the customs tariff for Ukrainian sunflower oil imported is 39.7% in Turkey and India, and 9% in China, it was only 6.2% in EU countries (until the duty-free regime from the beginning of 2022). In addition to customs tariffs, importing countries use non-tariff import control tools in the form of various regulatory requirements (labelling, certification, importer registration, requirements for packaging, product quality, etc.). In India, 70 such requirements apply to imported sunflower oil, in China — 69, in Turkey — 8, in the EU — 38. Compliance with these regulatory requirements can create additional obstacles for domestic exporters, but is also an incentive to improve product quality. Another important economic benefit derived from Ukraine's cooperation with the EU is the possibility of selling products at a relatively higher price. For example, the average import price of 1 ton of sunflower oil in the EU in 2023 was USD 1,310, while in Asian countries — 1133

dollars. On the other hand, the export of Ukrainian agro-industrial products to EU countries is associated with the risk of protests by EU farmers. Given the difficult geopolitical situation, it is important for Ukraine to increase its agro-industrial exports both in Asia (except China, India) and in the EU.

4.3. Minimize Economic Risks

So far, Ukraine's agro-industrial exports were dominated by raw materials, both in terms of and revenue, which means that financial results depend significantly on yield fluctuations, price dynamics on global markets, non-transparent export activity, etc. One way to minimize these risks is to introduce or increase the application of mandatory insurance of future crop harvests against agricultural insurance risks. In Ukraine, a number of insurance companies offer this type of insurance, but the current demand is still insufficient, most likely because of distrust towards insurance companies and the high cost of such insurance. At the end of 2021, the Ministry of Agrarian Policy began regulatory work on compensation (up to 60%) of the cost of insurance payments incurred by agricultural enterprises. Therefore, it can be expected that with the advent of better financial opportunities, the work in this direction will be continued. At the same time, it is also possible to reduce agricultural risks by using innovative technologies for growing agricultural crops. And in this case, the financial capabilities of the Ukraine Facility programme can come into play.

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Wyzwania i perspektywy efektywnego rozwoju eksportu rolnego Ukrainy

Streszczenie: Celem artykułu jest wykazanie, że wysoce wyspecjalizowana, oparta głównie na surowcach struktura ukraińskiego eksportu jest nieracjonalna i ekonomicznie nieefektywna. Jednym z wyzwań w tym zakresie (z punktu widzenia państwa) jest wyjątkowo niska cena ukraińskich produktów rolnych na rynku światowym. Autor proponuje sposoby wzmocnienia skuteczności Uchwały Gabinetu Ministrów Ukrainy w sprawie zatwierdzenia minimalnych dopuszczalnych cen eksportowych na określone rodzaje towarów oraz ocenia trendy i zmiany strukturalne w eksporcie ukraińskiego oleju słonecznikowego, kukurydzy i pszenicy, które nastąpiły w wyniku uwarunkowań geoekonomicznych i geopolitycznych. Dane przedstawione w artykule ujawniają zmiany w udziale procentowym ukraińskiego oleju słonecznikowego, kukurydzy i pszenicy eksportowanych do krajów, które były głównymi importerami ukraińskich produktów rolnych. Na podstawie wyników swojej analizy autor przedstawia perspektywy ekonomicznie efektywnego rozwoju ukraińskiego eksportu rolnego.

Słowa kluczowe: eksport rolny, olej słonecznikowy, kukurydza, pszenica