



**AgEcon** SEARCH  
RESEARCH IN AGRICULTURAL & APPLIED ECONOMICS

*The World's Largest Open Access Agricultural & Applied Economics Digital Library*

**This document is discoverable and free to researchers across the globe due to the work of AgEcon Search.**

**Help ensure our sustainability.**

Give to AgEcon Search

AgEcon Search

<http://ageconsearch.umn.edu>

[aesearch@umn.edu](mailto:aesearch@umn.edu)

*Papers downloaded from **AgEcon Search** may be used for non-commercial purposes and personal study only. No other use, including posting to another Internet site, is permitted without permission from the copyright owner (not AgEcon Search), or as allowed under the provisions of Fair Use, U.S. Copyright Act, Title 17 U.S.C.*

*No endorsement of AgEcon Search or its fundraising activities by the author(s) of the following work or their employer(s) is intended or implied.*

**Nadiia Kryvenko<sup>1</sup>**

National Academy of Agrarian Sciences of Ukraine

## **Foreign Trade in Agricultural Products between Poland and Ukraine in the Context of the Development of International Economic Integration**

**Abstract.** The economic development of countries is largely determined by their foreign trade. Poland's trade with Ukraine is facilitated by many years of experience, proximity and the influence of international economic integration. Both countries are large producers and exporters of agri-food products, and there is a prospect of deepening relations in the context of developing integration processes. The importance of this study stems from Ukraine's aspirations for European integration, Poland's membership in the EU and the development of trade relations with Ukraine over the years. At the same time, the main issues remain: access to EU markets, harmonisation of product quality standards, trade liberalisation in the context of deepening integration, non-discrimination of countries and so forth. The purpose of the study is to determine the prospects for the development of trade in agricultural products between Poland and Ukraine in the context of international economic integration, identify the most promising areas of integration, assess the importance of agricultural products in foreign trade and analyse the trends in their foreign trade. The study utilises the scientific works of researchers, statistical data from international trade statistics for 2003-2022 and general scientific and specific research methods, including methods of analysis and synthesis, statistical analysis, abstract-logical and system analysis, generalisation and others. Exports from Poland and Ukraine are increasing, with Poland's exports rising more significantly. The share of agri-food products, especially those from Ukraine, is growing. Ukrainian exports of agri-food products to Poland have increased more than total exports. The influence of international economic integration on foreign trade is evident; following the agreement between Ukraine and the EU, Poland's trade with Ukraine has increased. A similar trend is observable in the trade between these countries and the EU. Foreign trade between the countries is growing; the trade balance between Poland and Ukraine for all products is positive, but for agri-food products it has become negative. The EU is the main importer for Poland. The commodity structure of Poland is more diversified than that of Ukraine. The types of products for which it is desirable to establish common production and mutual trade have been identified in order to provide the population with quality products at an affordable price and expand their position in the world market. Product groups with the greatest prospects for integration, particularly in trade, between Poland and Ukraine have been identified. According to calculations based on dynamic series, it is assumed that the trend in the development of trade in agricultural products between the countries will continue in the future, which could contribute to effective integration between them. Thus, international economic integration aids the development of foreign trade between Poland and Ukraine, as well as between Ukraine and the EU. Ukraine needs to promote export diversification as it significantly lags behind Poland – which should contribute to an increase in exports. It is necessary to stimulate the overall production and export of selected types of agricultural and food products, which should help enhance product competitiveness, improve quality, increase the income of producers and enable both countries to expand their positions in the EU and global markets. This is particularly important in the context of developing international economic integration, the availability of natural resources in Poland and Ukraine, the increase in global demand for food and the deepening climate crisis. The issue is even more pressing since Ukraine is in a difficult situation under martial law, yet it remains an important trading partner in the global market.

**Keywords:** international economic integration, exports, agricultural products

**JEL Classification:** F2, F13, F14

---

<sup>1</sup> Candidate of Economic Sciences, Senior Researcher, National Scientific Centre "Institute of Agrarian Economics", National Academy of Agrarian Sciences of Ukraine, e-mail: kryvenn@ukr.net; <https://orcid.org/0000-0003-3439-432X>

## **Introduction**

The development of foreign trade is one of the most important prerequisites for the economic growth of countries. As a result of geographical discoveries and especially the development of scientific and technological progress, there has been an increase in foreign trade, a diversification of its commodity and geographical structure and the emergence of new forms of trade, such as electronic commerce.

This is especially important in the context of globalisation, as countries are becoming increasingly dependent on one another. The level of competitiveness of products, export volumes and the ability to meet the needs of the population all depend on the development of foreign trade and participation in integration groups. This is particularly significant for agri-food products as countries establish high trade barriers, including quantitative restrictions, and participation in integration groups contributes to the harmonisation of product quality standards. The importance of the agricultural sector is also growing due to heightened demand for agri-food products and the environmental crisis. These issues are also being addressed through foreign trade between countries. It is worth noting that Poland and Ukraine are significant producers and exporters of agricultural products and have engaged in mutual trade for many years. This should contribute to the economic growth of these countries, increasing their share in the global market for agricultural products, etc.

For example, Donaldson (2015) notes that the past two centuries have witnessed a dramatic change in the ability to trade goods and services across and within national borders. Container megaships have replaced steamships, which replaced sailboats; emails have replaced telegrams, which replaced carrier pigeons. Waves of post-World War II multilateral and preferential trade agreements have eroded many of the tariff barriers that apply when trade crosses international borders. This liberalised mobility of goods and services across locations has given rise to greater integration of the markets for these products at different points in space. Lyzun (2020) writes that economic integration is perhaps the most important process contributing to the sustainable development of the world's leading and developing countries. The expansion of mutual trade, elimination of obstacles to the free movement of capital flows, labour and industrial, as well as scientific, cooperation are among the main tasks of any form of regional integration. International economic integration (IEI) promotes the development of intra-industry trade and foreign trade as a result of the elimination of trade barriers at the initial levels of integration. Currently, the most developed integration group remains the European Union (EU). Begg (2021) notes that the economic core of the EU is the single market, characterised by the four freedoms of movement of goods, services, labour and capital. After enduring a decade of crises, the EU is keen to move in new directions – notably by putting the European Green Deal and digitalisation not only at the centre of its economic development strategy, but also of the Next Generation EU (NGEU) recovery package. At the same time, trade continues to develop between neighbouring countries, and very often such countries integrate with each other and sign free trade agreements. Poland remains one of the most important trading partners for Ukraine. In addition to the common border between the countries, it is important to take into account Poland's membership in the European Union (EU); Ukraine signed an Association Agreement with the EU. Given the importance of the agricultural sector in general, and especially for Poland and Ukraine, it is worth analysing trade between the countries in agri-food products in the context of the development of international economic integration.

The purpose of the study is to determine the importance of agri-food products for the foreign trade of Poland and Ukraine, to analyse and identify the features of foreign and bilateral trade in agri-food products between these countries and determine the prospects for its development in the context of international economic integration (IEI).

Scientists have studied the development of foreign trade between Poland and Ukraine under modern conditions. Taking into account the integration processes in Europe, it is worth determining the importance of agri-food products for the foreign trade of these countries. This analysis examines trade between Ukraine and Poland, highlighting individual stages in the context of international economic integration.

## **Literature Review**

Balassa (1961) defined economic integration as a process and as a state of affairs. Regarded as a process, it encompasses measures designed to abolish discrimination between economic units belonging to different national states; viewed as a state of affairs, it can be represented by the absence of various forms of discrimination between national economies [p. 174]. Donaldson (2015) notes that if the barriers that impede trade are technological in nature, then any reduction in these barriers enlarges the overall gains from trade, and this is likely to benefit all regions. However, if the trade barriers in question are trade taxes that generate tax revenue for the taxing region, and the region in question is large enough to influence its terms of trade with outside regions, then, even though free trade is better than autarky, there is an intermediate positive value of the trade tax that is optimal for that region (while globally inefficient). Balassa and Stoutjesdijk (1975) explored economic integration among developing countries, considering it as one of the policy options available to them and as part of their overall strategy for economic development. They wrote that providing incentives to exports would benefit sales in all foreign markets, regional integration would boost exports to countries in the same geographical area and preferential schemes extending to other regions would stimulate exports to developing countries in those regions. Scientists considered economic integration through the liberalisation of trade. Hamulczuk (2020) writes that the degree of integration of spatial markets is one of the most important determinants of economic welfare, and the selection of appropriate methods of analysis is important. The assessment of spatial integration can be based on trade flows, price information and trade costs. He notes that quite often, the notion of integration is reduced to some units (e.g., commodity markets, sections and sectors, regions or whole economies), which are treated as separate wholes, and considers the spatial integration of commodity markets. Hamulczuk (2020) draws conclusions that the main barriers to the practical verification of the occurrence, strength and changes in the spatial integration of agricultural commodity markets include the lack of full homogeneity of goods and difficulties in estimating the costs of trade. Traore and Diop (2021) note that the analysis of market integration is a powerful tool for understanding the relationships between geographically distant markets, analysing the impact of liberalisation policies, as well as identifying regions exposed to systematic shocks. However, choosing the right tool is not straightforward. It is guided by data availability and the results of tests carried out, but also by the understanding of the formal and informal relationships existing between the markets considered.

Weiye Zhang (2023) notes that global geopolitical relationships are expected to become more sensitive and capricious, and international agricultural trade may face more challenges; however, long-term demand and supply dynamics suggest it remains essential. An imbalance between limited natural resources and a growing appetite for farm products makes agricultural trade critical to meeting global food demand and presents further opportunities for agricultural producers, agribusinesses and investors. It is quite important to consider the export potential of agri-food products from Ukraine and Poland with the aim of expanding their positions in the world market.

Abrahám, Vošta, Čajka and Rubáček (2021) conclude that the production of agricultural commodities is of great importance to the economies of individual states, as it contributes to the creation of direct, indirect and induced jobs. The agrarian sector is a key sector, especially for less developed countries. The analysis confirmed the high tradability of some agricultural commodities, including soya, which is documented by their involvement in the international division of labour in the global projection. At the same time, it is worth noting that Ukraine is one of the largest producers of soybeans.

International organisations have a significant influence on the development of foreign trade. Thus, Lingran Yuan, Qizheng Zhang, Shuo Wang, Weibin Hu and Binlei Gong (2022) claim that they found trade hindered agricultural production and productivity in the GATT period but improved agricultural production and productivity in the WTO period. At the same time, it is worth considering the regional trade agreements of countries and the participation of member countries in integration groups within international organisations.

Korchun (2013) highlights the reasons for the strategic importance of developing foreign economic relations with Poland for Ukraine: geographical proximity (the presence of a common border); close ties throughout historical development; similarities in territory size, population, language group and mentality; similar natural-geographical conditions and resources; the possibility and necessity of Ukraine adopting the European civilisational approach, as well as Poland's experience in achieving full membership in the European Union. Totska (2022) argues that forecasts indicate expected growth in Ukraine's export-import commodity operations with all analysed countries. The forecasts for exports of goods to Poland and Romania are the most likely (the  $R^2$  values of the trend models constructed for them are more than 0.8). Petrova, Malyuta and Berezhnyuk (2018) consider foreign trade in goods between Ukraine and the countries of the Visegrad Group as one of the stages of Ukraine's integration into the economy of the European Union. Poland is singled out as a major economy in the region, a country with a high per capita income, a high human development index and one of the main partners among the Visegrad Group countries. Eliseeva (2014) notes the versatility of relations between Poland and Ukraine, the stable development of trade and economic cooperation between them, but also the need to increase the efficiency of transport infrastructure use, effective cooperation in the energy sector and more. The countries have the opportunity to further expand economic cooperation both in the format of bilateral relations and within the framework of the implementation of the European Union programme – "Eastern Partnership". Gubitsky and Melnik (2021) draw attention to the active cooperation between Poland and Ukraine in the fields of trade, investment, market access and the role of Poland in Ukraine's integration into the capabilities and resources of the European Union. In addition, it is noted that as a result of the conclusion of the Association Agreement between Ukraine and the EU, an increase in trade volumes was predicted, including with Poland. Stoetsky (2007) emphasises the significant impact of Poland's accession to the European Union on the

development of trade and economic cooperation between Poland and Ukraine, due to the fact that European Union tariffs are lower than those of Poland. Thus, international economic integration – depending on the trade policy of the integration group – cannot only reduce, but also increase trade with third countries.

Sulym (2020) proposes to more actively utilise the opportunities of Ukrainian-Polish trade and economic relations through the creation of state-targeted programmes to stimulate the development of cross-border cooperation, mitigate the investment climate, develop an investor protection system and attract Polish investors to open production facilities in Ukraine. Promising directions for the development of trade relations are highlighted, particularly the use of the established Export Credit Agency of Ukraine to promote Ukrainian goods in the Polish market, the creation of joint customs offices and the increase of checkpoints on the borders with Poland, among others. Korneliuk (2020) considers Ukrainian-Polish economic cooperation as a factor in enhancing the competitiveness of the economy. To further develop cooperation, it is suggested to foster joint entrepreneurship, attract investment resources based on public-private partnerships, form and develop cross-border clusters, utilise cooperation opportunities by participating in neighbourhood programmes and implementing joint cross-border projects and to create institutions that will contribute to the development of cross-border cooperation – particularly chambers of commerce and industry, business centres, regional development agencies, associations, fairs, etc. Studinskaya and Studinsky (2019) substantiate the existence of historical traditional ties between the national economies of Poland and Ukraine, noting that trade relations between them have experienced various stages over the course of almost a thousand years of history.

Conclusions were drawn about the need to strengthen the trend of replacing raw materials exported by Ukraine with high-tech alternatives, which is possible with fundamental changes in the sectoral structure of the national economy of Ukraine. Taking into account the parity of trade relations, prospects for economic cooperation between countries should be formed; this is feasible in a brand-oriented format for the development of the domestic economy. Raboshuk and Shymanska (2016) highlight among the promising areas of cooperation between Poland and Ukraine the introduction of modern methods of transport and forwarding services, ensuring a balanced structure of exports and imports while considering the level of development of national economies and regional risks to protect the trade interests of these countries. Hryshchuk (2017), examining the issues of socio-economic cooperation between Poland and Ukraine, concludes that new strategic guidelines should focus on strengthening trade relations through the implementation of a policy of import substitution and stimulating Ukraine's export of not only goods, but also services. First and foremost, this concerns improving the supply of transport, insurance, computer and other services, as well as establishing investment cooperation resulting from the penetration and consolidation of Ukrainian capital into the Polish economy through the implementation of joint investment projects and the creation of joint ventures. Martynova and Chernaya (2018) prove that the intensification of trade and economic cooperation between Poland and Ukraine can enrich the strategic partnership between them with new content and prepare the Ukrainian economy to function in accordance with the standards of the European Union. According to the results obtained, trade and economic cooperation between these countries is characterised by incomplete use of their existing potential. Alexiyevets, Alexiyevets, Il'chuk (2015) note that Polish capital played a positive role in

the banking system of Ukraine, especially from 2000 to 2005. The development of the Ukrainian economy was facilitated by significant investments and the opening of credit lines. The dynamics of economic cooperation between Poland and Ukraine will depend on resolving the issue of ensuring a favourable investment climate for the development of bilateral trade and investment relations. Chorna (2016) notes that Poland's accession to the EU affected economic cooperation with Ukraine; however, unlike previous forecasts, it did not have sharp negative consequences for Ukraine. Structural incompatibility of economies, the low level of purchasing power of Ukrainians, the irrational structure of foreign trade, the unsatisfactory condition of border control points, an unclear product certification system, limited access to information necessary for doing business, etc. all hinder cooperation between the countries. The economic potential of interaction between Poland and Ukraine has not been fully realised. Perepelytsia et al. (2021) identify two tasks for Poland and Ukraine: intensifying bilateral trade and developing the export potential of both countries in world markets by deepening inter-company cooperation and participation in global value chains. According to research by Babets (2023), the dependence of Ukraine's economic growth on imports of goods from Poland was revealed. The research confirmed the dependence of Ukraine's economic growth on changes in the volume of iron ore exports to Poland and imports of cosmetic industry products from Poland. The impact of exports of Ukrainian goods with a higher degree of processing was statistically insignificant, which can be explained by the small volume of exports of these goods compared to exports of raw materials.

## **Research data and methods**

The research is based on the analysis of scientific works by various scientists, statistical data from international trade statistics and the use of general scientific and specific methods.

Methods of analysis and synthesis, including mathematical techniques, were used to identify the peculiarities of trade and economic relations. Statistical analysis was employed to recognise trends in foreign trade, while generalisation helped form conclusions. Abstract-logical and systemic analysis were utilised to develop proposals for further cooperation, and graphic methods were applied for the visual presentation of the analysis results.

A trade map (international trade statistics) was used, which consists of trade statistics. Data from 2003 to 2022 was used to analyse how the foreign trade of countries changed before and after integration. In particular, in 2004, the treaty on the accession of Poland and other new countries to the EU came into force, and in 2017, the Association Agreement between the EU and Ukraine was established. Calculations are presented using data on total trade and agri-food products to show the impact of IEI on trade in these products and changes in the share of agri-food products in world exports. The commodity structure of exports from Poland and Ukraine, both in general and in bilateral trade, was analysed to identify more promising markets, create common enterprises and expand positions in the world market. An analysis of the geographical structure of exports allows for the selection of the main directions of exports, taking into account the impact on participation in integration processes.

For a more detailed analysis, indicators of the development of international trade between Poland and Ukraine were calculated:

- trade balance:

$$C_t = X_t - M_t \quad (1)$$

$C_t$  - trade balance;  $X_t$  - value of commodity exports;  $M_t$  - value of commodity imports.

- exports to imports ratio (goods):

$$I_{i/e} = \frac{X}{M} \cdot 100\% \quad (2)$$

turnover of goods (exports + imports) (Tsygankova, 2003, p. 26-29).

- the index of Grubel and Lloyd to measure the intensity of intra-industry trade:

$$GL_i = \frac{(X_i + M_i) - |X_i - M_i|}{(X_i + M_i)} \quad (3)$$

The indicator varies between 0 and 1. It takes the maximum value of 1 when all the trade flows observed in the industry 'i' is intra-industry in nature. It settles at 0 when all trade in this industry is inter-industry (Dutta Sourish, 2022).

For a more detailed analysis, the average indicators of the time series were calculated (Malychenko, 2010):

- the average arithmetic simple:

$$y = \frac{\sum y_i}{n} \quad (4)$$

$n$  - number of periods:

- the average absolute increase  $\bar{\Delta}$  characterises the average rate of growth (or decrease) of the levels of dynamics:

$$\bar{\Delta} = \frac{y_m - y_0}{m} \quad (5)$$

$m$  - number of the chain absolute increase ( $m = n - 1$ ).

- average growth rate  $\bar{K}$  shows how many times on average each level is greater (or less) than the previous level:

$$\bar{K} = \sqrt[m]{\frac{y_m}{y_0}} \quad (6)$$

$y_0, y_m$  - initial and final levels of the dynamics series.



- the average rate of increase  $\bar{T}$  shows by what percentage on average this level increases (decreases) compared to the previous one:

$$\bar{T} = \bar{K}\% - 100\% \quad (7)$$

## Research results

Trade and economic cooperation between Poland and Ukraine has a long history. Considering the proximity of the countries' borders, long-term trade relations and the concluded Association Agreement between Ukraine and the EU, of which Poland is a member, it is advisable to study foreign trade between them, particularly regarding agricultural and food products, in the context of the development of international economic integration (IEI).

The participation of countries in integration groups has a particular impact on foreign trade. In trade with the EU, Poland's total exports in 2022 compared to 2003 increased by 6.3 times, and agri-food exports by 12.9 times (Table 1). The share of agri-food products increased from 7.0% to 14.3%.

Table 1. Agri-food exports of Poland and Ukraine to the EU-27, bln USD

Product	Years										
	2003	2004	2005	2010	2015	2016	2017	2018	2020	2021	2022
Polish exports to the EU-27											
Agri-food products	2.9	4.5	6.4	12.7	18.7	18.3	21.3	25.4	26.7	31.5	37.1
Share of total exports	7.0	8.0	9.7	11.1	13.4	12.9	13.2	13.1	14.3	13.3	14.3
Export of Ukraine to EU-27											
Agri-food products	0.6	0.7	0.8	1.9	3.9	4.0	5.5	5.9	6.1	7.7	13.0
Share of total exports	6.8	6.6	8.1	14.7	30.9	30.4	32.0	30.2	34.2	28.7	46.4

Source: calculations of author based on the International Trade Centre database.

In May 2004, the agreement on the accession of new countries to the EU, particularly Poland, came into force. It can be concluded that integration contributed to an increase in exports, especially of agri-food products. Ukraine's total exports to the EU-27 increased by 3.3 times, while agri-food exports rose by 22.6 times; the share of agri-food products increased from 6.8% to 46.4%. Let's consider how exports changed before and after the entry into force of the Association Agreement with the EU in 2017. In 2016, compared to 2002, total exports increased by 1.6 times and agri-food exports by 9.5 times; in 2022, compared to 2016, they increased by 1.6 times and 2.4 times, respectively. Consequently, the growth of total exports was the same in both periods, while agri-food exports grew more in the first period, although the time before the agreement was significantly longer. The largest importers of certain types of agri-food products from Poland and Ukraine, particularly Poland, are mainly EU countries (Table 2).

Table 2. The largest importers of certain types of agri-food products imported by Poland and Ukraine in 2022

Product	Importers of product exported by Poland, %	Importers of products exported by Ukraine, %
10 Cereals	Germany (43.6 %), Netherlands (8.6), Nigeria (5.1), South Africa (3.1), Spain (3.1), United Kingdom (3.0), Israel (2.6), Denmark (2.3), Morocco (2.0), France (1.9)	Romania (13.9 %), China (12.1), Spain (10.7), Turkey (9.5), Poland (7.0), Egypt (5.9), Italy (4.4), Hungary (4.4), Netherlands (3.7), Republic of Korea (2.1)
07 Edible vegetables and certain roots and tubers	Germany (23.0), United Kingdom (13.9), France (8.3), Ukraine (6.3), Italy (5.5), Netherlands (5.5), Belgium (3.9), Czech Republic (3.6), Romania (3.0), Sweden (2.3)	Türkiye (23.4), Poland (15.4), Italy(6.6), Pakistan (5.3), Malaysia (5.2), Moldova, (4.9), Germany (3.4), Hungary (2.6), Belarus (2.3), Romania (1.8).
08 Edible fruit and nuts; peel of citrus fruit or melons	Germany (22.7), Netherlands (7.4), Belarus (6.1), France (5.3), United Kingdom (5.3), Belgium (4.9), Ukraine (4.3), Sweden (4.2), Czech Republic (3.4), Romania (3.2).	Poland (34.4), Germany (9.3), Italy (6.3), France (6.3), Netherlands (5.2), Austria (4.4), Czech Republic (3.6), Azerbaijan (3.1), Romania (2.4), Greece (2.4)
15 Animal, vegetable or microbial fats and oils and their cleavage products; prepared edible fats	Germany (23.5), Netherlands (12.6), Czech Republic (8.1), Spain (6.2), United Kingdom (5.9), Estonia (5.5), Hungary (4.8), Slovakia (4.4), Lithuania (4.0), Austria (3.8)	Poland (13.2), India (12.9), Turkey (11.1), Romania (7.2), Netherlands (6.5), China (5.9), Italy (5.4), Bulgaria (4.8), Spain (4.4), Iraq (3.3).
04 Dairy produce; birds' eggs; natural honey; edible products of animal origin, not elsewhere	Germany (20.8), Netherlands (7.7), Czech Republic (6.8), Italy (6.4), Romania (4.3), Algeria (4.1), United Kingdom (3.8), France (3.7), Slovakia (3.3), Lithuania (3.2).	Poland (19.7), Moldova (10.5), Germany (8.5), Netherlands (4.9), Kazakhstan (4.7), Latvia (4.2), Israel (4.0), Italy (3.9), Lithuania (3.3), United States of America (2.7).
19 Preparations of cereals, flour, starch or milk; pastrycooks' products	Germany (20.8), United Kingdom (9.1), Czech Republic (5.7), France (5.5), Italy (4.0), Romania (4.0), Hungary (3.3), Netherlands (3.2), Belgium (3.1), Spain (3.0).	Romania (12.5), Kazakhstan (12.4), Moldova (11.1), Poland (7.7), Germany (6.2), Georgia (4.2), Latvia (3.9), Azerbaijan (3.1), Lithuania (2.9), Bulgaria (2.8).
20 Preparations of vegetables, fruit, nuts or other parts of plants	Germany (24.5), Netherlands (11.1), United Kingdom (7.5), Austria (6.0), Czech Republic (4.7), United States of America (4.6), Russian Federation (4.5), France (3.2), Romania (2.8), Slovakia (2.7).	United States of America (32.1), Poland (24.5), Germany (11.6), Austria (8.7), Turkey (3.6), Moldova (3.0), Netherlands (1.8), United Kingdom (1.8), Belarus (1.6), Canada (1.5).

Source: calculations of author based on the International Trade Centre database.

For Poland, the main export partner is Germany, the share of exports to which did not fall below 20.8% (04 Dairy produce; birds' eggs, natural honey, pastrycooks' products), followed by the Netherlands and the Czech Republic. Ukraine is also among the top ten largest buyers of Polish exports. Additionally, Poland is one of the principal importers of Ukrainian goods. Among Ukraine's largest importers, there are more non-EU countries than Poland. This also indicates the significant influence of IEI on the foreign trade of members of integration groups. Besides EU countries, Poland's largest importers mainly include those with which the EU has concluded regional trade agreements (RTAs), such as Great Britain, Ukraine, Israel, Morocco, South Africa and Algeria. This trend is also typical for Ukraine. The determining factor for exports is the demand from countries, with the

USA and several Asian countries being among the main importers of Ukrainian goods, despite the absence of an RTU.

Total exports of Ukraine from 2003 to 2022 increased by 1.9 times, and agri-food products by 8.6 times, although one should take into account the decrease in total exports in 2022, which was lower than in 2011-2012 by 1.5 times, when it amounted to 68.4 and 68.7 billion USD, respectively (Fig. 1).

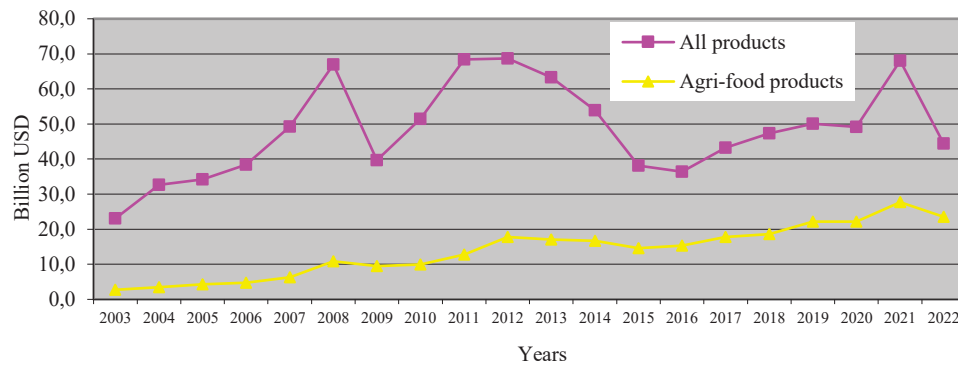


Fig. 1. Total and agri-food exports of Ukraine, 2003-2022

Source: calculations of author based on the International Trade Centre database.

Exports of agri-food products are characterised by more stable growth than total exports. In addition, the share of agri-food products in total exports increased from 11.8% to 53.0%.

Due to a significant part of Ukraine's exports being raw materials, there is a problem with processing products; therefore, it is necessary to involve new technologies and foreign direct investment.

In addition, according to the calculations of the Commodity Pattern of Foreign Trade of Ukraine [Commodity Pattern of Foreign Trade of Ukraine] in 2022, II. Plant products accounted for 30% of Ukraine's total exports, XV. Base metals and preparations thereof – 13.6%, III.15 Animal or plant fats and oils – 13.5%, and in 2010, XV. Base metals and preparations thereof – 33.7%. This is explained by the continuation of hostilities in the East of Ukraine, the lack of necessary conditions for the operation of enterprises and the loss of communication between enterprises – which, according to base metals and preparations thereof, are predominantly concentrated there.

Poland's total exports increased from \$52.8 to \$342.8 billion, and agri-food exports from \$4.4 to \$49.8 billion (Fig. 2) – i.e., 6.5 and 11.3 times, respectively; it was more than in Ukraine.

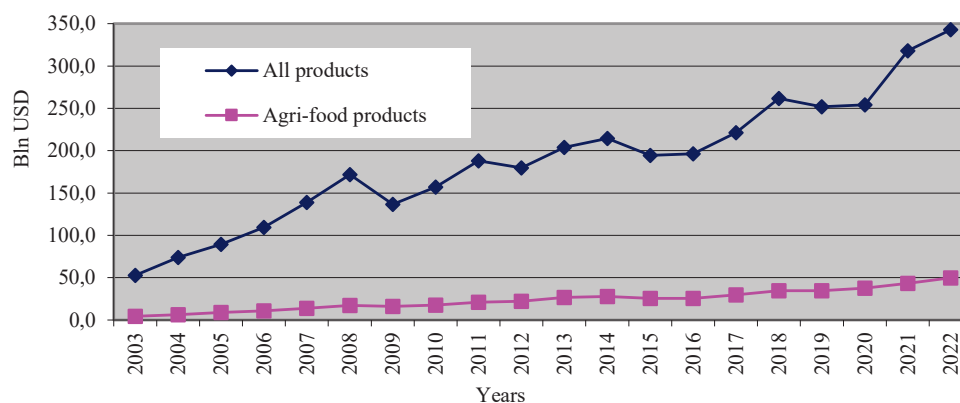


Fig. 2. Total and agri-food exports of Poland, 2003-2022

Source: calculations of author based on the International Trade Centre database.

The share of agri-food products in total exports increased from 8.4% to 14.5%, a rise of 1.7 times. That is, in both Poland and Ukraine during 2003-2022, there was an increase in the export of all agricultural and food products and the share of the latter in total exports. However, while the increase in total and agri-food exports was greater in Poland, the share of agri-food products grew more and was significantly larger in Ukraine. Additionally, export growth in Poland was stable.

This is due to the greater stability of the Polish economy, effective marketing systems, compliance of product quality with European quality standards, Poland's membership in the EU, greater adaptability of Polish manufacturers to new export opportunities, etc.

The growth of Ukrainian agri-food exports can also be explained by the harmonisation of quality standards in Ukraine with European ones.

In total, of the Polish exports to Ukraine, agri-food products accounted for 10% in 2022; this was more than 1% only for meat and edible offal, milk and dairy products, poultry eggs, natural honey and vegetables (Table 3).

Table 3. Value and share of agri-food products in total exports of Poland and Ukraine in trade between them, bln USD, %

Products	Export from Poland to Ukraine						Export from Ukraine to Poland					
	2003	2010	2015	2020	2021	2022	2003	2010	2015	2020	2021	2022
All goods, bln USD	1.5	3.9	3.3	5.7	7.1	9.7	0.8	1.8	2.0	3.3	5.2	6.7
Agro-food products, bln USD	0.2	0.5	0.3	0.8	0.9	1.0	0.0	0.2	0.4	0.8	1.0	2.6
Share of agri-food products in total exports, %	10.3	11.9	10.0	14.6	13.1	10.0	6.1	13.5	21.4	23.2	18.8	39.5

Source: calculations of author based on the International Trade Centre database.

The share of agri-food products in Ukraine's total exports to Poland amounted to 39.5%. For Poland, this indicator in 2003-2022 fluctuated between 5.5% and 14.6%, and for Ukraine – between 6.1% and 39.5%, although by 2022 it did not exceed 24.2%. The calculations show: 1) the share of agri-food products in total exports in bilateral trade is higher for Ukraine than for Poland; 2) the share of agri-food products has rather increased in Ukraine than in Poland in mutual trade; 3) from 2003 to 2022, Poland's total and agri-food exports to Ukraine increased (6.4 and 6.2 times, respectively) less than from Ukraine to Poland (8.8 and 56.7 times, respectively); 4) in bilateral trade, Ukraine is characterised by a significantly greater increase in agri-food exports than in total, unlike Poland. The share of Polish agri-food exports to Ukraine was 10% (2022), and in its world exports – 14.5%. For Ukraine, these figures were 39.5% and 53.0%, respectively. Thus, the share of agri-food products in the total exports of bilateral trade of these countries and in their world trade are close, and for Poland, they are less than for Ukraine.

By the way, on September 1, 2017, the Association Agreement between Ukraine and the EU came into force in full (Agreement, 2021). After this, Ukraine's total and agri-food exports to Poland (a member of the EU) increased noticeably. In 2017, total exports (\$2.7 billion) were higher than in 2003-2016, except for 2011 (\$2.8 billion), and since 2018, they have not fallen below \$3 billion and have grown steadily. There is a similar trend in the export of agri-food products, which in 2017 (\$0.52 billion) was lower than in 2012 (\$0.62 billion) and slightly lower in 2013-2014 (\$0.53 and \$0.54 billion), and since 2018, it has not fallen below \$0.6 billion and has grown steadily. Although until 2017, exports fluctuated. Poland's exports to Ukraine have not fallen below \$4.8 billion since 2017 and were higher than in 2003-2016, except for 2007-2008 and 2012-2013 (when they were \$5.5 billion, \$6.4 billion, \$5.3 billion and \$5.7 billion). If they fluctuated before 2017, then after 2017, they grew steadily and reached their maximum value in 2022 – \$9.7 billion. A similar trend is observed for agri-food products. In 2017, exports of agri-food products were higher than in 2003-2016, except for 2008 and 2010-2014, and since 2017, they have grown steadily in contrast to the previous period, exceeding the highest values prior to 2017, and in 2022 amounted to \$1 billion. It can be concluded that the agreement between Ukraine and the EU has contributed to a steady increase in trade between the countries.

According to the calculations for 2003-2022 (Table 4), it can be seen that the average absolute increase, the average growth rate and the average rate of increase of agri-food exports from Poland to Ukraine are less than from Ukraine to Poland.

Table 4. Average indicators of the time series of agri-food exports of Poland and Ukraine, 2003-2022

Specification	The average level of exports	The average absolute increase	The average growth rate	The average rate of increase
	bln USD	bln USD	%	%
Poland's exports to Ukraine	0.50	0.04	1.10	10
Ukraine's exports to Poland	0.52	0.14	1.24	24

Source: calculations of author based on the International Trade Centre database.

At the same time, the average level of exports of countries differs slightly, but from 2003 to 2022, Poland's exports increased annually by 1.10 times, while Ukraine's increased by 1.24 times. It is expected that this trend will continue and that foreign trade between the countries will develop, which may contribute to their further integration.

For a more detailed analysis, indicators of the development of international trade between Poland and Ukraine were calculated (Table 5).

Table 5. Indicators of the development of foreign trade between Poland and Ukraine, 2003-2022

Years	All types of products			Agri-food products		
	Turnover, bln USD	Trade balance, bln USD	Exports to imports ratio (goods), %	Turnover, bln USD	Trade balance, bln USD	Exports to imports ratio (goods), %
2003	2.3	0.8	207.5	0.2	0.1	382.2
2004	3.1	1.0	194.8	0.2	0.1	295.9
2005	3.6	1.6	253.5	0.3	0.1	288.4
2006	5.3	2.6	300.7	0.4	0.1	166.4
2007	7.2	3.8	325.4	0.5	0.2	206.6
2008	8.8	4.1	273.7	0.9	0.3	192.9
2009	4.6	2.3	297.7	0.7	0.2	204.3
2010	5.7	2.1	215.6	0.7	0.2	169.8
2011	7.5	1.9	168.0	1.0	0.0	96.9
2012	7.8	2.7	207.1	1.3	0.0	97.7
2013	7.9	3.5	257.5	1.1	0.1	130.4
2014	6.5	1.9	184.0	1.0	0.0	99.2
2015	5.0	1.6	194.4	0.8	-0.1	78.0
2016	5.8	1.8	190.5	0.8	-0.1	74.2
2017	7.2	2.4	199.8	1.0	-0.1	78.4
2018	8.3	2.2	173.8	1.3	-0.1	82.6
2019	8.2	2.4	182.4	1.4	-0.1	81.3
2020	8.6	2.7	192.6	1.7	0.0	99.5
2021	12.1	2.0	139.9	2.0	-0.2	83.8
2022	15.9	3.5	155.9	3.8	-1.9	34.1

Source: calculations of author based on the International Trade Centre database.

Table 5 shows that from 2003 to 2022, the turnover of goods between Poland and Ukraine for all goods increased by 7.1 times, and for agri-food products even more – by 19.4 times, with the minimum values observed in 2003 and the maximum in 2022. The trade balance between Poland and Ukraine for all goods was constantly positive; that is, the trade balance was active. Poland's exports to Ukraine exceeded its imports from Ukraine by

1.4 (2021) to 3.3 (2007) times, and this difference has noticeably decreased since 2014, when it no longer exceeded 2 times (2017). Before that, it was less only in 2004 and 2011 – 1.9 and 1.7 times, respectively.

Exports to imports ratio (goods) constantly exceeded 100%; its values have been lower since 2014, except for 2011. From 2003 to 2022, Polish exports to Ukraine increased 6.5 times, but imports to Poland from Ukraine increased even more – 8.5 times. If we compare 2022 with 2016, the year before the Association Agreement between Ukraine and the EU came into force, Poland's exports to Ukraine increased by 2.5 times, and imports from Ukraine to Poland by 3.1 times. The trade balance for agri-food products for Poland in trade with Ukraine was positive by 2010, and later – except for 2013 – it became negative. Similarly, the exports to imports ratio has not exceeded 99.5% (2020) since 2011, except for 2013. But if in 2013 it was 130.4%, then by 2011 it did not fall below 166.4% (2006) and reached 382.5% in 2003. Exports of agri-food products from Poland from 2003 to 2022 increased by 6.2 times, almost the same as the total export, and imports from Ukraine increased by 69.8 times, which was significantly more than the average. Compared to 2016, for Polish exports the indicator was 2.7 times, and for imports from Ukraine to Poland – 5.9 times.

So, from the analysis, it is clear that the total export and export of agri-food products of Poland and Ukraine in their bilateral trade is increasing. Poland's exports to Ukraine grew less than imports from Ukraine to Poland and the growth of Polish agri-food exports to Ukraine is almost the same as the growth of total exports, while the increase in imports from Ukraine to Poland of agri-food products is noticeably higher than total imports. This trend continued in 2022 compared to 2003 and 2016; the trade balance was constantly positive for Poland in trade with Ukraine, while the trade balance for agri-food products was positive only before 2011 and in 2013. The exports-to-imports ratio decreased compared to the period before 2011, although fluctuations were observed (i.e., there is a greater effect for Ukraine). However, the trade balance for all types of products remains consistently positive for Poland. The greater growth of Ukraine's exports to Poland compared to Poland's exports to Ukraine is also due to the fact that Poland's exports to Ukraine were already significantly higher – even before the signing of the Association Agreement between Ukraine and the EU – and its high product quality standards as an EU member. Among the agri-food products most exported by the countries, a significant part coincides (Table 6).

Table 6. Selected agri-food products most exported by Poland and Ukraine, 2022

Product	Poland		Product	Ukraine	
	Share of total country exports, %	Share of exports of agri-food products of the country, %		Share of total country exports, %	Share of exports of agri-food products of the country, %
Meat and edible meat offal	2.3	15.9	Cereals	20.6	38.9
Dairy produce; birds' eggs; natural honey; edible products of animal origin, not elsewhere and others	1.2	8.2	Animal, vegetable or microbial fats and oils and their cleavage products; prepared edible fats and others	13.5	25.4
Preparations of cereals, flour, starch or milk; pastrycooks' products	1.2	8.1	Oil seeds and oleaginous fruits; miscellaneous grains, seeds and fruit; industrial or medicinal and others	8.5	16.0
Cereals	1.0	6.6	Residues and waste from the food industries; prepared animal fodder	2.5	4.6
Miscellaneous edible preparations	0.9	6.4	Meat and edible meat offal	2.1	4.0
Preparations of meat, of fish, of crustaceans, molluscs or other aquatic invertebrates, and others	0.8	5.6	Dairy produce; birds' eggs; natural honey; edible products of animal origin, not elsewhere and others	1.0	1.9
Residues and waste from the food industries; prepared animal fodder	0.8	5.6	Edible fruit and nuts; peel of citrus fruit or melons	0.7	1.3
Cocoa and cocoa preparations	0.7	4.9	Sugars and sugar confectionery	0.7	1.3
Fish and others	0.7	4.6	Preparations of cereals, flour, starch or milk; pastrycooks' products	0.6	1.1
Preparations of vegetables, fruit, nuts or other parts of plants	0.6	4.1	Preparations of vegetables, fruit, nuts or other parts of plants	0.5	1.0
Animal, vegetable or microbial fats and oils and their cleavage products; prepared edible fats and others	0.5	3.2	Cocoa and cocoa preparations	0.3	0.6

Source: calculations of author based on the International Trade Centre database.

Thus, among the goods that occupy the largest share in the agri-food exports of Poland and Ukraine are: meat and edible meat offal; dairy produce; birds' eggs; natural honey; edible products of animal origin; preparations of cereals, flour, starch or milk; pastrycooks' products; cereals; residues and waste from the food industries; prepared animal fodder; preparations of vegetables, fruit, nuts or other parts of plants; and animal, vegetable or microbial fats and oils and their cleavage products. To improve the quality and trade of



these products, it is advisable to create joint ventures across countries. For Poland, these are significant livestock products, in particular: meat and edible meat offal; dairy produce; birds' eggs; natural honey; and edible products of animal origin (24.1% of the country's agri-food exports). For Ukraine, significant products are crop products: cereals; animal, vegetable or microbial fats and oils and their cleavage products; prepared edible fats; oil seeds and oleaginous fruits; miscellaneous grains, seeds and fruit; and industrial or medicinal products (80.3%). The commodity structure of Poland's agri-food exports is more diversified – the maximum share is meat and edible meat offal at 15.9%, with the share of other listed goods varying from 3.2% to 8.2%. In contrast, in Ukraine, the share of cereals is 38.9%, and the share of other listed products ranges from 0.6% to 25.4%. In addition, while 38.8% in Poland is occupied by four product groups, in Ukraine, only cereals account for 38.9%. This indicates the feasibility of commodity diversification of Ukraine's agricultural exports.

Calculating the intensity of intra-industry trade (3) will help predict the most promising directions for the integration of countries in trade (Table 7).

Table 7. Index of intra-industry trade of agricultural products of Ukraine with Poland, 2018-2022

Products	Years					average value
	2018	2019	2020	2021	2022	
Edible vegetables and certain roots and tubers	0.76	0.88	0.60	0.50	0.30	0.61
Products of the milling industry; malt; starches; inulin; wheat gluten	0.39	0.30	0.29	0.56	0.24	0.35
Preparations of cereals, flour, starch or milk; pastrycooks' products	0.27	0.27	0.25	0.29	0.41	0.30
Preparations of vegetables, fruit, nuts or other parts of plants	0.87	0.96	0.93	0.87	0.97	0.92
Dairy produce; birds' eggs; natural honey; edible products of animal origin, not elsewhere and others	0.85	0.63	0.45	0.50	0.91	0.67
Sugars and sugar confectionery	0.94	1.00	0.90	0.76	0.43	0.81
Edible fruit and nuts; peel of citrus fruit or melons	0.27	0.52	0.40	0.21	0.10	0.30
Oil seeds and oleaginous fruits; miscellaneous grains, seeds and fruit; industrial or medicinal and others	0.11	0.10	0.17	0.08	0.05	0.10
Cereals	0.02	0.03	0.30	0.04	0.01	0,08

Source: calculations of author based on the International Trade Centre database.

The above calculations show that Grubel and Lloyd's Indicator values are highest for edible vegetables and certain roots and tubers, preparations of vegetables, fruit, nuts or other parts of plants, edible products of animal origin not elsewhere specified, sugars and

sugar confectionery. This indicates the greatest prospects for integration between Poland and Ukraine in these areas. Moreover, among these goods, there are those that have the largest share in the bilateral trade of the countries – in particular, dairy produce, birds' eggs, natural honey and preparations of vegetables, fruit, nuts or other parts of plants.

The types of agri-food products which countries export most in mutual trade and predominantly import are determined (Table 8).

Table 8. Agri-food products occupying the largest share in the exports of Poland and Ukraine in their mutual trade and imports of these countries, 2022

Export from Poland to Ukraine	% of agri-food exports to Ukraine	Ukraine's import	% of Ukraine's agri-food imports	Export from Ukraine to Poland	% of agri-food exports to Poland	Poland's import	% of Poland's agri-food imports
Meat and edible meat offal	11.3	Edible fruit and nuts; peel of citrus fruit or melons	11.1	Animal, vegetable or microbial fats and oils and their cleavage products; prepared edible fats	30.0	Residues and waste from the food industries; prepared animal fodder	10.3
Dairy produce; birds' eggs; natural honey; edible products of animal origin, not elsewhere and others	11.2	Fish and others	10.5	Cereals	24.4	Fish and others	9.1
Edible vegetables and certain roots and tubers	10.2	Miscellaneous edible preparations	7.0	Oil seeds and oleaginous fruits; miscellaneous grains, seeds and fruit; industrial or medicinal and others	18.3	Animal, vegetable or microbial fats and oils and their cleavage products; prepared edible fats and others	8.3
Residues and waste from the food industries; prepared animal fodder	8.8	Residues and waste from the food industries; prepared animal fodder	6.1	Residues and waste from the food industries; prepared animal fodder	9.9	Edible fruit and nuts; peel of citrus fruit or melons	7.5
Preparations of cereals, flour, starch or milk; pastrycooks' products	8.1	Oil seeds and oleaginous fruits; miscellaneous grains, seeds and fruit; industrial or medicinal and others	6.0	Edible fruit and nuts; peel of citrus fruit or melons	4.1	Meat and edible meat offal	6.2
Coffee, tea, maté and spices	7.2	Edible vegetables and certain roots and tubers	5.9	Dairy produce; birds' eggs; natural honey; edible products of animal origin, not elsewhere and others	3.4	Dairy produce; birds' eggs; natural honey; edible products of animal origin, not elsewhere and others	5.2

Miscellaneous edible preparations	7.1	Animal, vegetable or microbial fats and oils and their cleavage products; prepared edible fats and others	4.9	Preparations of vegetables, fruit, nuts or other parts of plants	2.1	Miscellaneous edible preparations	5.2
Edible fruit and nuts; peel of citrus fruit or melons	6.8	Coffee, tea, maté and spices	4.6	Sugars and sugar confectionery	1.7	Cocoa and cocoa preparations	4.9
Preparations of vegetables, fruit, nuts or other parts of plants	6.3	Dairy produce; birds' eggs; natural honey; edible products of animal origin, not elsewhere	4.2	Vegetable plaiting materials; vegetable products not elsewhere specified or included	1.1	Preparations of cereals, flour, starch or milk; pastrycooks' products	4.5
Cocoa and cocoa preparations	5.6	Cocoa and cocoa preparations	4.1	Meat and edible meat offal	1.0	Oil seeds and oleaginous fruits; miscellaneous grains, seeds and fruit; industrial or medicinal and others	4.4

Source: calculations of author based on the International Trade Centre database.

Poland exports the most meat and edible offal to Ukraine, but this group is not among those that Ukraine imports the most. The opposite situation applies to dairy produce, birds' eggs, natural honey, edible vegetables and certain roots and tubers, residues and waste from the food industries, miscellaneous edible preparations, edible fruit and nuts the peel of citrus fruit, etc. Among the products that Ukraine imports more of, exports from Poland do not occupy the largest share; for example, fish, oil seeds and oleaginous fruits, miscellaneous grains, seeds and fruit and industrial or medicinal products.

Among the agri-food products that Ukraine exports to Poland are: animal, vegetable or microbial fats and oils and their cleavage products; oil seeds and oleaginous fruits; miscellaneous grains, seeds, and fruits; residues and waste from the food industries; edible fruit and nuts; citrus fruit peel; dairy produce; birds' eggs; natural honey; edible products of animal origin; and meat and edible meat offal. However, this is not typical for the majority of imported goods from Poland, which include fish; miscellaneous edible preparations; cocoa and cocoa preparations; preparations of cereals, flour, starch or milk; and pastrycooks' products. Therefore, as one of the largest suppliers of cereals, Ukraine should prioritise the export of preparations of cereals, flour, starch or milk, as well as pastrycooks' products to Poland. Generally, the goods that Poland exports most to Ukraine are those that Ukraine predominantly imports, and the situation is similar in Ukraine.

A noticeable increase in Poland's exports to Ukraine and a positive balance indicate the importance of the Ukrainian market for Poland and the prospects for further development of trade. Skwirowski (2024) also notes that the trade balance with Ukraine is very favourable for Poland, and since the beginning of the war, Polish exports have grown rapidly. It is important to pay attention to the Polish-Ukrainian call to develop cooperation with the EU. The Leviatan Confederation, the Polish-Ukrainian Chamber of Commerce and Industry and the Association of Ukrainian Entrepreneurs have asked the governments of Poland and Ukraine to develop, in cooperation with the European Commission, a real

programme to eliminate the main economic reasons leading to agricultural protests. They argue that it is in strategic interests to stop further destruction of mutual economic, social and other relations.

Also, Vlasyuk (2024) notes that Ukraine is a profitable trade partner for Poland, as it ranks seventh among partner countries in terms of Polish exports, and Polish exports to Ukraine exceed exports to China. It includes jobs and added cost in the country.

It was substantiated that the harmonisation of product quality standards with European ones contributed to an increase in the export of agri-food products to Poland.

Platonova (2019) notes that Ukraine has taken actions to gradually achieve compliance with EU technical regulations and the EU systems of standardisation, metrology, accreditation, conformity assessment work and market surveillance and undertakes to adhere to the principles and practices presented in existing decisions and regulations of the EU. It is important to acknowledge that the quality development of exports is impeded by challenges related to financing the innovative development needs of Ukrainian enterprises and the existence of a significant number of underutilised production capacities, among other factors. Nevertheless, the establishment of joint ventures between countries, particularly in the processing of agricultural products, could serve as a potential solution to these issues.

## **Conclusions**

Taking into account the trends in the development of exports between Poland and Ukraine, even in the context of hostilities, it is assumed that trade between the countries will develop – and the Free Trade Agreement between Ukraine and the EU will facilitate this. Following the conclusion of the Association Agreement, there has been a significant increase in trade between Ukraine and the EU – particularly with Poland. To enhance the position of Poland and Ukraine in the global market, the same product groups that have the largest share in the exports of both countries were identified, including grains, milk and dairy products, poultry eggs, natural honey, ready-made grain products, vegetable processing products, etc. It is proposed to create joint enterprises to improve the quality of these products, increase their production and export and stimulate the export of processed products. For Poland, this primarily concerns livestock products, while for Ukraine, it relates to crop production. This initiative should provide benefits to the population, enabling consistent access to high-quality products at affordable prices, while also expanding markets for producers. Furthermore, the establishment of joint ventures should help increase revenues for the state budgets of both countries, create new jobs (as a result of establishing joint processing enterprises) and improve product quality by attracting new technologies and investments.

At the same time, it is advisable to deepen research on production, quality standards and demand in the world market for selected types of agri-food products in order to increase their exports by Poland and Ukraine. It would also be beneficial to further the study by analysing how the well-being of the populations of these countries influences the exports and imports of Poland and Ukraine.

From 2003 to 2022, the total and agri-food exports of Poland and Ukraine increased, with Polish exports rising more than Ukrainian ones. The share of agri-food products also

increased, more significantly in Ukraine, where it was higher. A similar pattern is observed in mutual trade between the two countries; agri-food products account for 10% of Polish exports and 39.5% of Ukrainian exports. The growth of total and agri-food exports from Poland to Ukraine did not differ significantly, but exports of agri-food products from Ukraine to Poland increased at a faster rate. The shares of agri-food products in each country's exports are almost the same as in their bilateral trade. The influence of the International Economic Integration (IEI) has become significant; after the conclusion of the Association Agreement between Ukraine and the EU, trade between Ukraine and the EU – particularly with Poland – increased noticeably. Exports from Poland became more stable, while exports from Ukraine to Poland grew more than those from Poland to Ukraine. Foreign trade turnover between Poland and Ukraine saw a greater increase in agricultural and food products.

Poland's trade balance with Ukraine has always been positive, although the difference between exports and imports is decreasing, and the exports-to-imports ratio has generally begun to decline. Regarding agri-food products, the trade balance for Poland was positive before 2010 and in 2013. The same product groups have the largest share in the exports of both Ukraine and Poland, particularly cereals, dairy produce, birds' eggs, natural honey, edible products of animal origin not elsewhere classified, preparations of cereals, flour, starch or milk, pastrycooks' products and preparations of vegetables, fruit, nuts or other parts of plants, among others.

Therefore, it is advisable to create joint ventures in order to improve quality, increase production and export of products. For Poland, these primarily consist of livestock products, while for Ukraine, they focus on crop production. The commodity structure of Polish agri-food exports is more diversified than that of Ukraine. Considering the commodity structure of exports and imports between the countries in mutual trade, it is advisable for Ukraine to stimulate the export of preparations of cereals, flour, starch or milk and pastrycooks' products to Poland. In the context of integration with the EU, Poland's exports to the Union are growing, particularly in agri-food products. A similar trend is evident for Ukraine. The largest importers of these countries, especially Poland, are EU countries, indicating the impact of integration on trade.

Product groups with the greatest prospects for integration between Poland and Ukraine have been determined, namely in the trade of: edible vegetables and certain roots and tubers; preparations of vegetables, fruit, nuts or other parts of plants; dairy produce; birds' eggs; natural honey; edible products of animal origin, not elsewhere classified, as well as sugars and sugar confectionery.

A peculiarity has been established that, depending on the trade policy of the integration group, IEI may not reduce, but increase trade with third countries.

Taking into account the types of products that countries import the most can help manufacturers increase their production and exports; however, it is essential to pay attention to compliance with product quality standards and the preferences of consumers in those countries. The growth of high-quality exports in the bilateral trade between Poland and Ukraine should enhance the competitiveness of products and satisfy the demands of consumers with diverse preferences. Ukraine and Poland should encourage increased and expanded product diversification of exports to their largest importing countries, as they already have positions in these markets. According to calculations of export statistics, it is assumed that the trend of increasing trade will continue, which may contribute to further integration of countries, including Ukraine, into the EU. Consequently, foreign trade

between Ukraine and Poland is developing. Since the conclusion of the Association Agreement between Ukraine and the EU, there has been a significant increase in trade between Ukraine and the EU – particularly with Poland.

## Bibliography

- Abrahám, J., Vošta, M., Čajka, P., Rubáček, F. (2021). The specifics of selected agricultural commodities in international trade. *Agricultural and Resource Economics: International Scientific E-Journal*, 7(2), 5-19. <https://doi.org/10.51599/are.2021.07.02.01>.
- Alexiyevets, L., Alexiyevets, M., Il'chuk, I. (2015). Tendencies and problems of collaboration of Ukraine and Poland in economic sphere in modern terms. *The Scientific Issues of Ternopil Volodymyr Hnatiuk National Pedagogical University*, 2(4), 109-124.
- Babets, I. (2023). Assessment of the impact of trade with Poland on Ukraine's economic growth. *Economics & Education*, 8(1), 52-59. <https://doi.org/10.30525/2500-946X/2023-1-7>.
- Balassa, B. (1961). *The Theory of Economic Integration*. Homewood: Irwin.
- Balassa, B., Stoutjesdijk, A. (1975). Economic integration among developing countries. *Journal of Common Market Studies* 14. World Bank Reprint Series: Number Thirty. Reprinted from the *Journal of Common Market Studies* 14 (September 1975) <https://documents1.worldbank.org/curated/en/634101468183540222/pdf/REP30000Econom0developing0countries.pdf>.
- Begg, I. (2021). The European Union and regional economic integration Creating collective public goods –Past, present and future. BRIEFING. The EU system in perspective. European Parliamentary Research Service. March. Access mode: [https://www.europarl.europa.eu/RegData/etudes/BRIE/2021/689369/EPRS\\_BRI\(2021\)689369\\_EN.pdf](https://www.europarl.europa.eu/RegData/etudes/BRIE/2021/689369/EPRS_BRI(2021)689369_EN.pdf).
- Chorna, N. (2016). Ukrainian-Polish economic cooperation. *Foreign Trade: Economics, Finance, Law*, 2, 31-41. Access mode: [http://nbuv.gov.ua/UJRN/uazt\\_2016\\_2\\_5](http://nbuv.gov.ua/UJRN/uazt_2016_2_5).
- Commodity Pattern of Foreign Trade of Ukraine (2010). Available at: [https://ukrstat.gov.ua/operativ/operativ2010/zd/tsztt/tsztt\\_u/tsztt1210\\_u.htm](https://ukrstat.gov.ua/operativ/operativ2010/zd/tsztt/tsztt_u/tsztt1210_u.htm).
- Commodity Pattern of Foreign Trade of Ukraine (2022). Available at: [https://ukrstat.gov.ua/operativ/operativ2022/zd/tsztt/arh\\_tsztt2022\\_u.html](https://ukrstat.gov.ua/operativ/operativ2022/zd/tsztt/arh_tsztt2022_u.html).
- Donaldson, D. (2015). The Gains from Market Integration. *Annual Review of Economics*, 7, 619-647.
- Dutta, Sourish (2022). Two Approaches of Measuring Intra-Industry Trade (May 25, 2022). Available at SSRN: <https://ssrn.com/abstract=4119929> or <http://dx.doi.org/10.2139/ssrn.4119929>.
- Eliseeva, O. (2014). State and development trends of trade and economic relations between Ukraine and Poland. *Zeszyty Naukowe WSEI seria: Ekonomia*, 8, 199-208.
- Hamulczuk, M. (2020). Spatial Integration of Agricultural Commodity Markets – Methodological Problems. *Zagadnienia Ekonomiki Rolnej / Problems of Agricultural Economics*, 2 (363), 32-52 Available at SSRN: <https://ssrn.com/abstract=3712086>.
- Hryshchuk, A.M. (2017). Actual issues of socio-economic cooperation of Ukraine and Poland: current state and directions of change. *Scientific Bulletin of the International Humanitarian University. Series: Economics and Management*, 27(1), 33-36.
- Hubytskyy, L., Melnyk, H. (2021). Trade and economic relations between Ukraine and the Republic of Poland (1991–2021). *International Relations: Theory and Practical Aspects*, 8, 99-118. doi: <https://doi.org/10.31866/2616-745x.8.2021.249028>.
- International trade statistics. Access mode: <https://www.trademap.org/Index.aspx>.
- Korchun, V. (2013). Foreign trade relations between Poland and Ukraine. *Ukraine and Poland: past, present, prospects*, 2, 57-62. [http://nbuv.gov.ua/UJRN/UPmcp\\_2013\\_2\\_16](http://nbuv.gov.ua/UJRN/UPmcp_2013_2_16).
- Korneliuk, O. (2020). Economic cooperation of Ukraine and Poland as a factor of improving of the national economy competitiveness. *Black Sea Economic Studies*, 50 (1), 26-29.
- Lyzun, M. (2020). Development trends of regional economic integration: methodological aspect. *Journal of European Economy*, 19 (1), 82-98. Access mode: [http://nbuv.gov.ua/UJRN/jeea\\_2020\\_19\\_1\\_9](http://nbuv.gov.ua/UJRN/jeea_2020_19_1_9).
- Malichenko, I.P., Luginin, O.E. (2010). *General theory of statistics*. Rostov-na-donu: Phoenix.
- Martynova, L., Chorna, N. (2018). Trade and economic cooperation of Ukraine and Poland under development of integration processes in Europe. *Market Infrastructure*, 21, 17-21.

- Petras M., Baliuk V., Perepelytsia H. (2021). Analytical Report: State and Prospects of the Strategic Partnership between Poland and Ukraine. Perspectives from Poland and Ukraine. Skhidnoievropeyskyi koledzh im. Yana Novaka-Yezoranskoho; Rada zovnishnoi polityky "Ukrainska pryzma Fond im. Fridrikha Eberta".
- Petrova, H.Ye., Maliuta, I.A., Berezhniuk, I.H. (2018). Modern commodity trade in Ukraine and Visegrád states as eurointegration vector. *Pryazovskiy Economic Herald*, 4(9), 10-15.
- Platonova, I. (2019). Exports as a driver for economic development of Ukraine in the age of international integration. *Uzhorod National University Herald. Series: International Economic Relations and World Economy*, 24, 37-41.
- Raboshuk, A., Shymanska, K. (2016). State and Perspectives of Foreign Trade between Poland and Ukraine. *Zeszyty Naukowe Uczelni Vistula*, 47(2), 254-268.
- Skwirowski, P. (2024). Handel między Polską i Ukrainą. Który kraj na nim lepiej wychodzi? *Rzeczpospolita*. Available 04.03.2024 03:00 at: <https://www.rp.pl/dane-gospodarcze/art39935541-handel-miedzy-polska-i-ukraina-ktory-kraj-na-nim-lepiej-wychodzi>.
- Stoetsky, S. (2007). Trade and economic cooperation between Ukraine and Poland after Poland's accession to the EU. *Political Management*, 4, 93-102.
- Studinska, G., Studinsky, V. (2019). Ukrainian-Polish trade relations: retrospective analysis. *Foreign Trade: Economics, Finance, Law*, 3, 69–82. Access mode: [http://nbuv.gov.ua/UJRN/uazt\\_2019\\_3\\_8](http://nbuv.gov.ua/UJRN/uazt_2019_3_8).
- Sulym, B. (2020). Ukrainian-Polish trade and economic relations in modern conditions. *Scientific and Theoretical Almanac Grani*, 23(10), 36-46, <https://doi.org/10.15421/172091>.
- Totska, O. (2022). Foreign trade in Ukrainian goods with Poland, Romania, Slovakia and Moldova: analysis and forecasting. *Economic Journal of Lesya Ukrainka Volyn European National University*, 2(30), 90-98, DOI: <https://doi.org/10.29038/2786-4618-2022-02-90-98>.
- Traore, F., Diop, I. (2021). "Measuring integration of agricultural markets" AGRODEP technical notes TN-18, International Food Policy Research Institute (IFPRI).
- Tsygankova, T.M., Petrashko, L.P., Kalchenko, T.V. (2003). International trade. Kyiv: KNEU.
- Ukraine–European Union Association Agreement (27-Jun-2014). Available January 2024 at: [https://zakon.rada.gov.ua/laws/show/984\\_011?lang=en#Text](https://zakon.rada.gov.ua/laws/show/984_011?lang=en#Text).
- Vlasiuk, V. (2024). Statistics from the Polish border. Why is it not beneficial for Poland to curtail economic relations with Ukraine? Economic truth, March 5, Available at: <https://www.epravda.com.ua/columns/2024/03/5/710739/>.
- Yuan, L., Zhang, Q., Wang, S., Hu, W., Gong, B. (2022). Effects of international trade on world agricultural production and productivity: evidence from a panel of 126 countries 1962-2014. *International Food and Agribusiness Management Review*, 25(2), 293-309, <https://doi.org/10.22434/IFAMR2021.0055>.
- Zhang, W. (2023). The Opportunities and Challenges of International Trade in Agriculture. Global AgInvesting. Available at: <https://www.globalaginvesting.com/the-opportunities-and-challenges-of-international-trade-in-agriculture/>.

For citation:

Kryvenko N. (2024). Foreign Trade in Agricultural Products between Poland and Ukraine in the Context of the Development of International Economic Integration. *Problems of World Agriculture*, 24(3), 4-25; DOI: 10.22630/PRS.2024.24.3.9