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## Article

# The influence of Ukrainian agricultural corporations on the national trade balance

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## THE INFLUENCE OF UKRAINIAN AGRICULTURAL CORPORATIONS ON THE NATIONAL TRADE BALANCE

*Determined the role of the agricultural corporate sector in the formation of export flows, identified the fundamental trends of agro-food foreign trade, assessed the competitiveness of main agro-food commodity groups and defined, on this basis, the promising guidelines for its expansion via increased share of exports of the most competitive products. The methodological basis of the research is the system of general and special scientific methods. Empirical results, concerning the role of the agrarian corporate sector, have been obtained through retrospective analysis, grouping, benchmarking and generalization. The research of commodity structure and foreign trade flows of agrarian sector was based on economic and statistical methods, in particular the balance method, the determination of the geometrical mean of annual growth rate and so on. The method of assessing the competitiveness of each product group through the Lafay Index, which shows the difference between the normalized trade balance for individual goods and for all goods traded by the country, was used for identifying the comparative advantages of Ukraine in international agro-food trade. The calculations were carried out using world and national statistics. Time series cover the period 2004-2018 and are analyzed from the standpoint of commodity structure. It is determined that the corporate sector in Ukrainian agriculture is the main producer of export flows of agro-food products. The commodity structure research showed negative changes in value added. The share of unprocessed goods in trade increases due to a decrease in the share of processed products, which allows us to state the raw material orientation of Ukrainian agro-food exports. It was noted that attention should be focused on increasing the share of products with higher value added in agro-food exports. The prospects for increasing exports of organic products were outlined. The comparative advantages of Ukraine in relation to the global economy were analyzed based on the Lafay Index calculation. Received estimates allowed dividing the export commodity structure into competitive and non-competitive products. Products with a high level of competitiveness were identified based on the Lafay Index analysis as well as based on the corresponding balance sheets. The mono-specialization of agro-food exports, which makes itself felt in the predominance of raw materials, has become even stronger due to the orientation of the corporate sector solely to the global food demand and the weakness of the influence of state management structures in Ukraine. This causes unstable export earnings and poor predictability of the results of Ukrainian farmers' economic activities, as well as increases significantly the environmental risks of agricultural production. The Ukrainian agro-food foreign trade is characterized by positive features, including an increase in value and volume of exports, improved food self-sufficiency, surplus trade accretion and by negative ones, namely: reduction of the*

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*share of processed products and semi-finished products in the agrarian trade structure, low activity of small agricultural traders oriented to exportation products from Ukraine, and weak promotion of Ukrainian agro-food exports by public authorities.*

**Keywords:** *agro-food foreign trade, corporate agrarian sector, competitiveness, commodity structure, export flows*

Over the last years, Ukraine's agriculture has shown significant achievements. Crop yields and animal productivity are gradually increasing steadily output and exports are growing, and a relatively high level of production profitability and profit-earning capacity is maintained [1]. Agri-food production plays an important role in improving the country's balance of payments. Thus, the products of the agri-food complex in 2009–2013 provided on average about a quarter of all export revenues. During the recent economic crisis, this figure exceeded 40%, and in 2018, it was 39%. Meanwhile, over the period of Ukraine's independence (since 1991), the export of agri-food products is significantly higher than the corresponding imports (in 2018 – almost four times). This forms a significant positive foreign trade balance of agri-food products (13,6 billion US dollars in 2018) [2, 3].

Ukrainian agricultural production is increasingly involved in the global economic space [4]. The share of exports in agricultural production is growing. In most cases, it does not fall below 20%, on average it is 40–50%, but for some products it can reach 70–80%. On the one hand, there are positive effects of this process (such as the increase in foreign exchange earnings, the intensification of investment and innovation etc.), on the other hand, the industry is dependent on the influence of global environmental factors. This influence is especially dangerous for sub-sectors, and their activity largely depends on changes in the world agricultural market. Thus, half of Ukraine's agricultural exports are products that have not undergone in-depth processing (primarily grain and oil crops), while the share of exported products with high added value in the last five years did not exceed 17% [2, 3]. Therefore, increasing price volatility in world markets for such products poses additional threats to the stable development of the industry. In particular, this is due to the deterioration of the predictability of foreign exchange earnings, the formation of an inefficient structure of agricultural production under the influence of external demand, the imbalance of the domestic food market due to increasing export orientation of production, etc.

Nowadays the main producers of agricultural products in Ukraine are enterprises and households, which produce 50 and 41% of agricultural products, respectively. The role of classic farmers is still small, as they produce about 9% of agricultural products.

Ukrainian agri-food exports are provided mainly by the products of agricultural enterprises, which represent the corporate sector and operate according to the models of behavior described by R. Nelson and S. Winter [5]. About half of such exports are grain and oil crops. Their production by 2/3 is concentrated in corporate agricultural enterprises. The role of households and farmers in the formation of export deliveries is small. Due to the dominant role of the agricultural corporate sector in exports, the article pays special attention to its formation and functioning in the Ukrainian economy.

The **purpose** of the article is to assess the role of the corporate sector of agriculture in the formation of export flows and identify promising areas for increasing them by changing the structure of agri-food exports, namely: increasing the share of exports of the most competitive products.

The calculations were compiled using data from State Statistics Service of Ukraine. Time-series data covering the period 2004–2018 are analyzed from the standpoint of product structure.

The commodity structure is based on the Ukrainian Classification of Goods for Foreign Economic Activity (UCGFEA), taking into account the correspondence of UCGFEA positions to the positions of the Comprehensive Nomenclature, developed for European Statisticians at the level of eight characters [6]. The volume of Ukrainian agricultural foreign trade flows is estimated in US dollars.

The *subject* of the study is the foreign trade flows of the Ukrainian agri-food sector, their volumes, structure and corporate sector of Ukrainian agriculture as their main producer, as well as identifying comparative advantages of Ukraine in foreign trade in agri-food products.

According to the theory of comparative advantage, a country exports those goods that are on average cheaper than in other countries in the general equilibrium of a closed economy, and imports those goods that are on average more expensive than in other countries in the general equilibrium of a closed economy, with such basic conditions as: the absence of fundamental distortions in the economy, for example the state intervention; rational, aimed at optimizing the production activities of firms and households; and the optimal balance of closed and open economies in accordance with the Pareto Principle [7].

To assess the comparative advantage, the authors considered it appropriate to use the Lafay Index (LFI), which is resistant to macroeconomic shocks, as it considers the difference between the normalized trade balance for an individual commodity and all traded goods [8]. For a particular country  $i$  and good  $j$ , the Lafay Index is calculated as follows:

$$LFI_j^i = 100 \times \left( \frac{x_j^i - m_j^i}{x_j^i + m_j^i} - \frac{\sum_{j=1}^N (x_j^i - m_j^i)}{\sum_{j=1}^N (x_j^i + m_j^i)} \right) \times \frac{x_j^i + m_j^i}{\sum_{j=1}^N (x_j^i + m_j^i)},$$

where:  $N$  – this is the total number of traded goods;

$x_{ij}$  and  $m_{ij}$  – export and import of goods  $j$  of the country  $i$  respectively. Thus, the Lafay Index determines the contribution of a single product to the normalized trade balance of the country. Therefore, the sum of LFI indices for all commodities should equal zero. With a positive value of the index, we can talk about the existence of comparative advantages and vice versa. Thus, the indices of identified comparative advantages allow us to assess the existing and realized advantages in trade, but do not provide any assessment of their future dynamics [9].

**Agricultural corporate sector as the main producer of export flows of agri-food products.** The beginning of the corporate system development in Ukraine's agricultural sector in the 1990s of the XX century, after the country gained state independence. According to Ukrainian legislation, agrarian corporations include business associations, private enterprises and production cooperatives, their capital consists of land and property shares of individuals. In 2017, according to the State Statistics Service of Ukraine, there were more than 11,2 thousand agricultural corporate enterprises. Compared to 2010, their number decreased by almost 29%, which indicates the process of concentration in the industry during this period. In 2018 the trend changed dramatically and the number of agricultural corporate enterprises increased by 40% (up to 16 thousand).

It is noteworthy that the number of corporate enterprises in the agricultural sector is relatively small: about a quarter of their total number. However, the corporate segment accumulates about 80% of all agricultural land used by agricultural enterprises, in other words, more than 15 million hectares.

According to State Statistics Service of Ukraine, the size of a corporate enterprise averages about 1,000 hectares (farms – 200 hectares). At the same time, about 8% of these enterprises do not have agricultural land at all, and even the largest ones are measuring their land

in hundreds of thousands of hectares. The enterprises that do not use land resources are, in particular, large poultry farms, pig farms, etc., which are also part of the agricultural corporate system. Agrarian corporations keep more than half of total poultry population and almost half of total pig population grown by Ukrainian agricultural enterprises.

Characterizing the corporate enterprises of Ukrainian agricultural sector, one should note that the dominating ones are those, which have less than 10 thousand hectares. Their share in the sale of agricultural products of the corporate sector is 73%. At first glance, the most effective group of enterprises are those having over 100 thousand hectares. They sell the largest amount of products per 1 hectare of used agricultural land. However, as a rule, these enterprises are characterized by mono-production, which is based on the use of industrial-type technologies and does not ensure compliance with the principles of sustainability, greening and conservation of biodiversity in agriculture [10].

Enterprises with a land area of 10 to 100 thousand hectares are less numerous, but they use a fifth of agricultural land and, the share of these enterprises is also 20% (Table 1).

Corporate enterprises employ the vast majority (almost 90%) of employees in the sector. The level of provision of corporate enterprises with agricultural machinery is also high. Thus, this segment accounts for 71% of the total number of tractors used by Ukrainian agricultural enterprises and 66% of combine harvesters.

Accordingly, the contribution of corporate enterprises to agricultural production has been growing steadily recently. In 2018, such enterprises produced almost 50% of all agricultural and 51% of crop production in the industry. In terms of individual products, the share of corporate enterprises is even more significant. In addition to the above-mentioned grain and oil crops, the share of sugar beets produced by agricultural corporations is significant (over 88% of their total volume in 2017). Agricultural corporations also produce more than 60% of the total amount of meat and more than half of the total amount of eggs.

*Table 1*

**Agricultural sales by agricultural corporate enterprises depending on their land area**

Groups of enterprises by land area	Number of enterprises		Agricultural land	Agricultural sales per 1 hectare, thousand UAH	Share in agricultural sales, %
	thousands of units	% of the total amount			
Enterprises without agricultural land	1,6	8,1	–	–	4,7
Enterprises with an area of acreage					
from 0,01 to 10,0 thousand hectares	17,7	90,98	14474,5	22,3	73,0
from 10,01 to 100,0 thousand hectares	0,2	0,9	3593,0	25,0	20,3
over 100,0 thousand hectares	0,0	0,02	351,4	25,5	2,0
Total	19,5	100,0	18418,9	24,1	100,0

*Source:* data compiled and calculated by the authors on basis of State Statistics Service of Ukraine.

Holding structures currently dominate the agricultural corporate segment of Ukraine. They are not legally institutionalized and are also partially controlled by foreign capital [11]. Due to taking over Ukrainian agricultural enterprises of the traditional type or establishing strict control over them, holding structures control large amounts of the most fertile agricultural lands located in different regions of the country. According to the above mentioned, the agricultural sector of Ukraine for a long time contains industrial, commercial, and banking capital, initially not related to agricultural business [12]. Obviously, the main purpose of these businesses is to increase profits, as this is the survival path of the corporation [13]. The current land area of these holding structures constitutes hundreds of thousands of hectares, and their agricultural output is growing from year to year. First of all, such an increase in output is due to the global demand for food. The consequences of this are the deformation of the agricultural sector structure, and growth of environmental problems, mainly related to this country's raw material agri-food exports.

Due to the fact that in Ukraine these agricultural holdings are not actually legalized, there is no official information about their number and their land area. According to expert estimates, the total number of these structures is now about one hundred units with a share in land use of about 30% (of total land possessed by agricultural enterprises). In 2018, 10 largest agricultural corporations alone used almost 7% of all Ukrainian agricultural lands [14].

Some agricultural corporations in Ukraine are directly controlled by foreign capital. A number of corporations that position themselves as Ukrainian have foreign jurisdiction (including offshore). In particular, all of the top five companies with the largest land banks have foreign registration. On the other hand, these large agricultural producers have foreign branches, including trading ones, created to facilitate their export activities.

In the field of foreign trade in Ukrainian agri-food products, in addition to large domestic holding structures, there are powerful international traders. For example, Cargill, Louis Dreyfus, Bunge, COFCO, RISOIL, Allseeds, etc. In Ukraine these companies specialize in trade and processing of agricultural products, they own elevators and terminals for transshipment of grain and vegetable oil, and oil extraction facilities.

These holding companies are the main agricultural exporters in Ukraine. They both sell their own products and often act as traders. In 2018 ten largest exporters of agricultural products generated 56% of all domestic agricultural exports [15].

The rapid growth of global food demand and corresponding foreign trade facilitated the formation and development of large, in particular international, agribusiness in Ukraine. The liberalization of international trade played an important role in stabilizing the domestic economy for Ukrainian society during the crisis in the 1990s. On the one hand, there were negative effects (structural disparities in the domestic economic system due to the reduction and even phasing out of several subsectors), on the other hand, there were also positive effects. They showed up in the growth of foreign exchange earnings and stabilization of agri-food production under the conditions of a severe decline in the purchasing power of Ukrainian population. All this gave domestic farmers the opportunity not only to survive in the harsh crisis, but also to gradually begin to increase financial and logistical resources, which were catastrophically reduced compared to the pre-crisis period. The focus of agribusiness mainly on global demand at that period can be considered as forced and to some extent justified.

Nowadays in a very difficult period for this country, foreign exchange earnings of the sector are no less important for stabilizing the development of the domestic socio-economic system. However, there is already a clear awareness of the need not only to increase exports, but also to deepen its diversification, and increase efficiency in order to ensure a sustainable increase in export earnings.

In this context, the improvement of Ukraine's trade balance should be accompanied not only by an increase in the positive balance of trade in agri-food products, but also by an improvement in the export structure, namely an increase in the share of products with the lowest price volatility and most stable demand.

Next, we will analyze the state of Ukraine's trade balance and assess the competitiveness of Ukrainian exports in terms of individual product groups of agri-food products. This will help justify possible areas for improvement.

**The dynamics of the state of foreign trade in food and agricultural products.** As mentioned above, the Ukrainian agri-food sector is rapidly raising its share in the global food market. Both export and import components of the trade balance are growing. Thus, the export of Ukrainian food and agricultural products is increasing quite dynamically, especially in physical indicators. In 2018 the agri-food sector provided 39% of all foreign trade revenues of the state (in 2009–2012 – an average of 22%, in 2014 – 31%, and in 2016 – 42%) (Table 2). According to the authors' estimates, this was achieved due to an increase in export prices (agri-food export price index was 107%). Accordingly, the index of physical volume of exports in 2018 was 97,9%, which indicates its decrease. Thus, in 2018 Ukrainian farmers managed to earn an additional \$ 1,2 billion USD of export earnings due to favorable price conditions.

However, as mentioned above, currently almost half of the export revenues of Ukrainian agricultural sector is earned due to the export of grain, and seeds of oil crops. According to State Statistics Service of Ukraine, the share of finished food products (UCGFEA positions 16–24) decreased from 30 to 16% during 2004–2018. At the same time, in 2017 and 2018 there was some increase in this indicator (by 15,4 and 6,8%, respectively).

Table 2

Dynamics of commodity structure of Ukraine's foreign agri-food trade

Indicator	2005	2013	2014	2016	2017	2018
Export, million dollars USD	4307	17024,3	16669,0	15281,8	17756,9	18611,8
Import, million dollars USD	2684	8184,0	6059,3	3891,1	4301,1	5055,5
<b>Net balance, million dollars USD</b>	<b>1623</b>	<b>8840,3</b>	<b>10609,7</b>	<b>11390,7</b>	<b>13455,8</b>	<b>13556,4</b>
The share of agri-food products in total exports, %	12,3	26,8	30,9	42,0	41,0	39,3
The share of agri-food products in total imports, %	7,4	10,7	11,1	9,9	8,7	8,8

Source: data compiled and calculated by the authors according to State Statistics Service of Ukraine.

Ukraine has a significant potential to raise agri-food output and exports. Thus, increasing the current, relatively low, efficiency of agricultural production can greatly increase internal and external flows of agricultural raw materials and processed products. Consequently, there is a problem of production distribution. It is obvious that agricultural raw material exports should not dominate in the overall structure of export deliveries due to the high volatility of the relevant markets. Therefore, attention should be focused on increasing the share of food products with higher added value in agri-food exports [16]. However, data show that commodity exports continue to dominate. The following information on the commodity structure of Ukraine's agricultural trade indicates negative changes in terms of value added (Table 3). The share of trade in unprocessed goods is growing due to a decrease in the share of processed products (currently the share of processed products has decreased to 40%). This makes it

possible to state that Ukrainian agricultural exports are becoming more and more raw material based, which requires a revision of this country's agri-food trade policy.

*Table 3*

**Ukraine's foreign agri-food trade in terms of processed and unprocessed goods,  
million dollars USA**

Indicator	2004	2008	2014	2016	2018	Index 2018 to 2004, %
<b>Export</b>						
Unprocessed goods, total (UCGFEE codes 1–14)	1784,4	6373,7	9750,6	8868,7	11097,4	621,9
Processed goods, total (UCGFEE codes 15–24)	1686,5	4463,9	6918,3	6413,1	7515,3	445,6
<i>Total</i>	<i>3470,9</i>	<i>10837,6</i>	<i>16668,9</i>	<i>15281,8</i>	<i>18612,8</i>	<i>536,3</i>
The share of unprocessed products, %	51,4	58,8	58,5	58,0	59,6	116,0
The share of processed products, %	48,6	41,2	41,5	42,0	40,4	83,1
<b>Import</b>						
Unprocessed goods, total (UCGFEE codes 1–14)	754,4	3164,5	3155,8	1911,1	2446,9	324,4
Processed goods, total (UCGFEE codes 15–24)	1154,0	3292,1	2903,5	1980,0	2604,8	225,7
<i>Total</i>	<i>1908,4</i>	<i>6456,6</i>	<i>6059,3</i>	<i>3891,1</i>	<i>5051,7</i>	<i>264,7</i>
The share of unprocessed products, %	39,5	49,0	52,1	49,1	48,4	122,5
The share of processed products, %	60,5	51,0	47,9	50,9	51,6	85,3

*Source:* data compiled and calculated by the authors on basis of State Statistics Service of Ukraine.

It is important to note the expansion of supplies (mainly to EU) of Ukrainian organic products. The production potential of these products in Ukraine is significant. Currently, 420 thousand hectares of organic agricultural lands and 570 thousand hectares of wild plants are certified in Ukraine. According to this indicator, in 2016 Ukraine ranked 20th in the world [17]. The growth rate of Ukrainian organic production is 5,4 times higher than in European countries and almost five times higher than in the world. The number of producers of organic products in 2017 was 375 (in 2002 the number was 31), and operators on the organic market – 588 (in recent years, the annual growth of their number exceeded 15%).

A research by the Federation of Organic Movement of Ukraine shows that the modern domestic consumer market of organic products in Ukraine began to develop in the early 2000s. In 2005 it was estimated at 200 thousand euros, in 2010 – at 2,4 million euros, in 2015 – at 17,5 million euros, and in 2017 – increased to 29,4 million euros (for comparison: the world market in 2016 was more than 80 billion euros) [18].

Ukraine produces a wide range of organic products, although more than 45% of the total area of organic land comprise grain crops. Organic grain and oil crops, cereals, fruits, berries, meat and dairy products are mainly produced. Due to the relatively low purchasing power of Ukraine's population, domestic consumption of organic products is ten times less than in EU



countries. Thus, the level of consumption in this country's domestic market is low – about 0,68 euros per capita, compared to 10–11 euros in the world. In terms of the volume of domestic market of organic products, Ukraine ranks only 25th in Europe. From each hectare of organic agricultural land in our country, the domestic market consumes only 50 euros worth of products, while in European countries the figure is 2345 euros. This situation is mainly a consequence of the export orientation of organic production in Ukraine: 80% of organic products are exported, mainly to the European market [19].

In 2017, exports of organic products amounted to 99 million euros. The largest consumers of Ukrainian organics are the Netherlands, Germany, Great Britain, Italy, Austria, Switzerland, the USA and Canada. The main export goods are grain crops, oil crops, legumes, berries, fruits and wild plants. Jams, juices, nuts, are meal are also exported.

The organic sector is attractive for production and export, as the profitability of the business in almost any its segments is significantly higher than in the traditional agricultural sector. According to the commercial service of the US Embassy in Ukraine, the average return on investment in Ukrainian organic farming is about 300%.

Thus, the agricultural corporate sector, having significant resources from the export of grain and oil crops, can occupy this potentially promising export niche, which initially requires significant investment, but has a high demand, which will grow steadily in the future.

Everything mentioned above allows us to say that Ukraine's export agri-food potential is significant and highly demanded. At the same time, in the short and medium term, the main export commodity groups will continue to be crop products (corn, wheat, sunflower seeds, rapeseed, and soybeans) and vegetable oils. Exports of fruit and vegetables and organic products will also develop. At the same time, we can expect a dynamic increase in exports of livestock products, especially chicken, eggs and (due to active expansion of the global market) dairy products.

As for the import of agri-food products, it is significantly lower than exports. Ukraine is a net exporter of the vast majority of agricultural products. Particularly important in the formation of supply on the domestic market are mainly products of non-competitive imports, such as tropical fruits, olive oil, etc. Therefore, as it was mentioned, the balance of Ukraine's foreign trade in agri-food products is constantly positive. In 2018, it amounted to 13,6 billion dollars USD. And we can observe this in all directions of deliveries. In terms of individual product groups, the balance may become negative. This is especially true of processed products (codes 16-24) due to the above-mentioned raw material orientation of Ukrainian exports. Particularly, in trade with EU countries, the balance of this product group is negative (in 2018 – 33,6 million dollars USD).

Next, we assess the competitiveness of Ukrainian exports in terms of individual product groups of agri-food products. This will help justify possible ways to improve this country's trade balance

#### ***The justification of the choice of the most competitive export commodity groups of agri-food products***

To analyze Ukraine's foreign trade, we use the Lafay Index as the main index of identified comparative advantages. At this investigation phase, it is necessary to analyze the comparative advantages of Ukraine in the world economy, as it will give an overall picture of the situation, and also due to the fact that nowadays the directions of trade flows of Ukrainian agricultural exports are quite diversified. The assessment was performed for each of the product groups 1–24 and the total export of goods for the relevant time periods.

The competitiveness of Ukrainian agri-food exports was assessed in the long run (Table 4).

Table 4

**The competitiveness of commodity groups of Ukrainian agri-food exports  
in relation to the world – LFI index**

The name of product group	2004	2008	2013	2014	2016	2017	2018
10 cereals	0,9985	2,6400	4,8482	5,7335	8,1518	7,2707	7,4509
15 animal or plant fats and oils	0,5759	1,0782	2,5164	3,2681	5,1203	4,91713	4,4773
12 oil seeds and fruits	0,1737	0,9143	1,3706	1,2789	1,6845	1,9198	1,6625
23 remains and wastes of food industry	0,1225	0,2166	0,5456	0,8058	1,1493	0,9988	1,0752
02 meat and meat preparations	-0,0013	-0,4308	-0,1272	0,1344	0,4255	0,4701	0,5132
04 milk and milk products, eggs; natural honey	0,6153	0,4263	0,3780	0,3631	0,3751	0,4619	0,4008
17 sugar and sugar confectionery	0,0046	0,0822	0,1484	0,0819	0,4090	0,4206	0,3197
11 flour-grinding products	-0,0006	0,1045	0,0919	0,0923	0,1612	0,1688	0,1511
07 vegetables	0,0418	0,0078	-0,0263	-0,0289	0,1011	0,1748	0,1418
19 preparations of grains	0,0564	0,923	0,1872	0,2064	0,1743	0,1920	0,1285
14 plant materials for producing	0,0018	0,0019	0,0424	0,0791	0,0371	0,0274	0,0348
24 tobacco and industrial substitutes of tobacco	-0,3666	-0,0998	-0,0638	-0,1337	-0,1308	-0,1040	-0,0001
20 products of vegetables processing	0,0427	-0,0379	0,1275	0,0621	0,0452	0,0225	-0,0008
05 other animal products	0,0148	-0,0031	-0,0085	-0,0103	-0,0120	-0,0148	-0,0090
01 live animals	-0,0166	-0,0437	-0,0632	-0,0577	-0,0348	-0,0203	-0,0240
13 shellac natural	-0,0232	-1,0252	-0,0238	-0,0277	-0,0338	-0,0320	-0,0287
06 seedlings and other trees	-0,0315	-0,0563	-0,0925	-0,0635	-0,0299	-0,0346	-0,0295
16 preparations from meat, fish	-0,0271	-0,0681	-0,0645	-0,0660	-0,0625	-0,0864	-0,0750
18 cocoa and cocoa preparations	0,0596	0,1633	0,1404	-0,0301	-0,0663	-0,0884	-0,0935
09 coffee, tea	-0,1351	-0,1184	-0,2090	-0,2252	-0,2308	-0,2310	-0,1979
22 alcoholic and non-alcoholic beverages, vinegar	0,2965	0,2186	-0,0863	-0,1547	-0,1606	-0,2326	-0,2508

Table 4 (end)

The name of product group	2004	2008	2013	2014	2016	2017	2018
21 other mixed foodstuffs	-0,1748	-0,2579	-0,2275	-0,2898	-0,2998	-0,3230	-0,2712
08 eatable fruits, and nuts	-0,0487	-0,2086	-0,6719	-0,6019	-0,4307	-0,3814	-0,2891
03 fish and crustacea	-0,1641	-0,3431	-0,5266	-0,5211	-0,5228	-0,5483	-0,5272

Source: data compiled and calculated by the authors on basis of State Statistics Service of Ukraine.

In the world market, Ukraine has significant comparative advantages for the following groups: 10 cereals and 15 animal or plant fats and oils, and can achieve comparative advantages for the following groups: 12 oil seeds and fruits, 23 remains and wastes of food industry, 02 meat and meat preparations, 04 milk and milk products, eggs, honey, 17 sugar and sugar confectionery, 11 flour-grinding products, 07 vegetables, 19 preparations of grains, and 14 plant materials for producing.

Over the past 15 years, Ukrainian agricultural exports have lost comparative advantages for the following groups: 22 alcoholic and non-alcoholic beverages, vinegar, 20 products of vegetables processing, 18 cocoa and cocoa preparations, 05 other animal products, but Ukrainian agricultural exports have expanded in groups 11 and 02. For 13 out of 24 groups of product goods Ukraine has a low level of competitiveness, which indicates a lack of diversification and mainly raw materials orientation of Ukrainian agricultural exports.

Strong non-competitiveness is observed in trade in alcoholic and soft drinks, edible fruits and nuts, as well as fish and fishery products. At the same time, the non-competitiveness of the latter group, as well as that for coffee and tea is not critical for Ukraine, as this country's agriculture does not specialize in these items due to natural environment.

Based on the analysis of Ukraine's foreign trade in agricultural products, we can divide the commodity structure of exports into competitive and non-competitive products. Goods with a high level of competitiveness were identified based on the analysis in terms of the Lafay Index (LFI) (Table 4), as well as based on the calculation of relevant balance sheets. Commodity groups are considered competitive if they have a positive trade balance or their LFI is positive. The division of goods into competitive and non-competitive gives only a rough estimate. Accurate identification of competitive and non-competitive product structures would require in-depth analysis that goes beyond this study.

The above-mentioned approaches allow to identify the competitive and non-competitive items (Table 5).

This table, describing the last fifteen years of Ukrainian agri-food trade, allows the authors to draw the following conclusions.

As already mentioned, competitive goods for agri-food trade generate a positive trade balance. Non-competitive positions, as a rule, have a negative effect on the trade balance. The constantly growing positive balance of trade in agri-food products indicates that the export of competitive goods prevails in Ukrainian agri-food trade. According to our estimates, this is confirmed by the geometrical mean of annual growth rate of the balance, which during the study period for competitive goods was 1.43, and for non-competitive – 1.41.

Recently in the commodity structure there has been a more pronounced concentration on individual commodity items. Ukrainian agri-food exports are based on a relatively small number of product groups, which form a significant part of the value. They include cereals, vegetable fats and oils, seeds and fruits of oil plants, remains and wastes of food industry, sugar and sugar confectionery, meat products, milk and milk products. Imports are largely

Table 5

**Ukrainian agri-food trade: the balance of competitive  
and non-competitive product groups, million dollars USA**

The name of product group	2004	2008	2013	2014	2016	2017	2018
<b>Competitive groups</b>							
10 cereals	675,8	3557,3	6045,2	6177,5	5925,1	6324,3	7049,6
15 animal or plant fats and oils	396,5	1332,8	3094,1	3520,3	3717,0	4339,1	4229,2
12 oil seeds and fruits	120,0	1192,2	1654,9	1375,7	1260,5	1215,5	1701,8
23 wastes of food industry	91,3	241,7	635,5	866,4	831,3	883,5	1008,7
02 meat and meat preparations	19,2	-768,8	-270,4	142,5	307,0	419,2	478,5
04 milk and milk products, eggs; natural honey	408,2	548,8	428,7	389,6	271,0	409,3	374,8
17 sugar and sugar confectionery	16,1	97,2	171,0	87,8	295,8	369,7	299,8
11 flour-grinding products	2,8	131,5	111,0	99,3	116,6	149,7	141,6
07 vegetables	28,1	-9,2	-64,4	-32,7	71,0	159,4	129,5
19 preparations of grains	42,1	92,2	197,1	220,9	124,0	178,6	114,7
14 plant materials for producing	1,2	2,3	53,4	85,2	27,0	23,8	32,9
<b>Total</b>	<b>1801,3</b>	<b>6418</b>	<b>12056,1</b>	<b>12932,5</b>	<b>12946,3</b>	<b>14472,1</b>	<b>15561,1</b>
<b>Non-competitive groups</b>							
24 tobacco and industrial substitutes of tobacco	-205,6	-235,0	-161,2	-148,8	-108,4	-48,8	-19,2
20 products of vegetables processing	35,2	-119,8	107,5	64,8	29,5	34,1	-9,0
05 other products	10,0	-7,7	-15,2	-11,4	-9,3	-10,6	-9,6
01 live animals	-9,2	-77,7	-99,6	-62,9	-27,1	-11,7	-26,0
13 shellac natural	-13,1	-43,3	-35,7	-29,6	-26,0	-24,9	-28,5
06 seedings and other trees	-18,3	-98,3	-141,6	-69,1	-22,4	-27,2	-29,5
16 preparations from meat, fish	-12,9	-129,4	-108,1	-72,1	-47,4	-66,5	-75,5
8 cocoa and cocoa preparations	57,5	144,1	94,4	-36,0	-54,9	-52,5	-102,6
09 coffee, tea	-78,4	-207,6	-322,4	-245,3	-173,7	-180,5	-197,0
22 alcoholic and non-alcoholic beverages, vinegar	202,5	224,3	-210,8	-170,8	-125,7	-163,6	-259,9
21 other mixed foodstuffs	-90,1	-476,3	-402,9	-317,6	-228,2	-242,9	-275,6
08 eatable fruits, and nuts	-21,7	-409,9	-1058,9	-656,6	-328,0	-282,0	-297,9
03 fish and crustacea	-94,5	-600,4	-810,8	-567,5	-392,9	-429,0	-524,6
<b>Total</b>	<b>-238,6</b>	<b>-2037</b>	<b>-3165,3</b>	<b>-2322,9</b>	<b>-1514,5</b>	<b>-1506,1</b>	<b>-1854,9</b>

Source: formed based on authors' calculations.

formed from non-competitive goods, but in its structure you can also find several competitive goods. The following imported items have strengthened their position in recent decades: fish, fruit and nuts, preparations of cereals, beverages and spirits, and cocoa products. These groups make a significant contribution to reducing the positive balance of Ukrainian agri-food trade, which however continues to increase due to raw materials and oils.

A key aspect of Ukrainian agri-food trade is its ever-increasing competitiveness. Extremely critical negative values of LFI were found in fish and seafood trade, fruit and nuts, alcoholic and non-alcoholic beverages, various processed products, and tobacco and its substitutes.

### **Conclusions**

Ukraine's agri-food complex is one of the most stably developing segments in the developing economies. The agri-food sector ensures national security, and has a significant presence on the world food market. At the same time, the positive balance of foreign trade balance of agri-food products is approaching 14 billion dollars USD.

The main producer of export flows of Ukrainian agri-food products is this country's big agricultural business, which represents the corporate sector. Such companies are often controlled by foreign capitals or have foreign jurisdiction, although they seek to position themselves as Ukrainian entities. The focus of these companies is on global food demand and the weakness of state management structures in Ukraine have led to the consolidation of the mono-specialization of Ukrainian agri-food exports (with a predominance of raw materials). This significantly increases the environmental risks of agricultural production due to non-compliance with crop rotations.

Raw materials dominate in the structure of Ukraine's agri-food exports. This causes instability of export revenues and poor predictability of economic results of Ukrainian farmers.

Analyzing the development of Ukrainian agri-food trade, we can identify its several positive and negative features. On the one hand, there is an increase in the value and volume of exports, an increase in the level of food security, an increase in the trade surplus, and a growing ratio of export coverage to imports. On the other hand, there are such shortcomings as low activity of small agricultural traders focused on exporting products from Ukraine, weak promotion of Ukrainian agri-food exports by public authorities (primarily, the lack of the concept of agricultural trade support), and reduced share of processed products and semi-finished products in the structure of agri-food trade. However, despite all this, there is reason to expect that in the future the competitiveness of Ukrainian agri-food products in European and world markets will increase.

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## ВПЛИВ АГРОКОРПОРАЦІЙ УКРАЇНИ НА СТАН ТОРГОВЕЛЬНОГО БАЛАНСУ ДЕРЖАВИ

Досліджено роль корпоративного сектора галузі сільського господарства у формуванні експортних потоків, виявлено основні тенденції вітчизняної агропродовольчої зовнішньої торгівлі, оцінено конкурентоспроможність основних товарних груп агропродовольства та на основі цього встановлено перспективні напрями її нарощування за рахунок зростання частки експорту найбільш конкурентоспроможної продукції. Методологічною основою дослідження стала система загальнонаукових та спеціальних наукових методів. Емпіричні результати щодо ролі аграрного корпоративного сектора були отримані шляхом ретроспективного аналізу, групувань, порівняльного аналізу та узагальнення. В основу дослідження товарної структури та зовнішньоторговельних потоків агропродовольчого сектора було покладено економіко-статистичні методи, зокрема балансовий метод, визначення середньогометричного темпу тощо. Для виявлення порівняльних переваг України в міжнародній торгівлі агропродовольчою продукцією було використано метод оцінки конкурентоспроможності кожної товарної групи через індекс Лаффея, який показує різницю між нормованим торговельним балансом по окремому товару і по всіх товарах країни, що торгуються. Розрахунки здійснені з використанням даних світової та національної статистики. Часові ряди охоплюють період 2004–2018 рр. та аналізуються з позиції товарної структури.

Встановлено, що корпоративний сектор у сільському господарстві України є основним продуцентом експортних потоків агропродовольчої продукції. Дослідження товарної структури засвідчило негативні зміни у сфері доданої вартості. Частка торгівлі непереробленими товарами зростає за рахунок зменшення частки оброблених продуктів, що дозволяє констатувати сировинну спрямованість українського сільськогосподарського експорту. Зазначено, що увага має бути зосереджена на нарощуванні в агропродовольчому експорті питомої ваги продукції з вищою доданою вартістю. Зауважено про позитивні тенденції стосовно збільшення експорту органічної продукції, що зумовлює перспективи його подальшого нарощування.

Здійснено аналіз порівняльних переваг України щодо світової економіки на основі розрахунку індексу Лаффея. Отримані оцінки дозволили розділити товарну структуру експорту на конкурентоспроможні та неконкурентні продукти. Товари з високим рівнем конкурентоспроможності були визначені на основі аналізу індексу Лаффея, а також на основі розрахунку відповідних балансів.

*Таким чином, через орієнтацію корпоративного сектора виключно на глобальний продовольчий попит та слабкість впливу державних управлінських структур в Україні закріпилася моноспеціалізація агропродовольчого експорту, що проявляється у переважанні в ньому сировинних товарів. Це зумовлює нестійкість обсягів експортних надходжень і слабку передбачуваність результатів господарської діяльності українських аграріїв, а також істотно збільшує екологічні ризики сільськогосподарського виробництва.*

*Українській агропродовольчій зовнішній торгівлі притаманні як позитивні риси, серед яких збільшення вартості й обсягів експорту, зростання рівня продовольчої самозабезпеченості, нарощування додатного сальдо торговельного балансу, так і негативні, а саме: зменшення частки перероблених продуктів і напівфабрикатів у структурі агропродовольчої торгівлі, низька активність дрібних торговців агропродовольством, орієнтованих на вивіз продукції з України, слабе сприяння зростанню українського агропродовольчого експорту з боку органів державної влади.*

**Ключові слова:** агропродовольча зовнішня торгівля, корпоративний аграрний сектор, конкурентоспроможність, товарна структура, експортні потоки