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Prospects for the transformation of grain exports into livestock development as a scenario for the economic growth of the Ukrainian agricultural sector in the postwar period

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▸ **Abstract.** The purpose of this study was to substantiate the scenario of transformation of grain exports into the development of beef cattle and pig breeding as high value-added products with the corresponding definition of an indicative positive impact on the Ukrainian economy. The study employed the following methods: comparative analysis, statistical, tabular, calculation and design, abstract-logical, as well as trend extrapolation tools. The study found a trend of increasing concentration of raw materials in Ukraine's agricultural exports – 85%. The share of grain in total exports was almost 25%. Further growth in grain exports was becoming an issue for the internal and external markets. Therewith, export earnings from meat sales continues to be insignificant at 3-4%, while beef and pork production was steadily declining. The factual consumption of beef and veal meat by the population was almost 6 times lower than the rational norm, and pork – 1.5 times. It was found that the high concentration of raw materials in Ukrainian agricultural exports leads to significant annual losses of export earnings, potential jobs, and a decrease in the country's GDP. The forecast benchmarks for the parameters are to increase beef production to 1 million tonnes and pork production to 2 million tonnes per year. The total projected demand for grain to produce the specified

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volumes of beef and pork was 12.94 million tonnes per year (wheat – 5.51 million tonnes, maize – 5.59 million tonnes, barley – 1.84 million tonnes). The calculations proved that the use of certain volumes of wheat, maize, and barley for fattening animals for meat production rather than export would increase Ukraine's export earnings by 12.6% (or by USD 1.23 billion per year). The study found that Ukraine's GDP could grow by UAH 525.6 billion or USD 12.5 billion. The practical findings of this study enable an objective assessment of the scenario of transformation of the grain market structure with the corresponding determination of the forecast parameters for increasing export earnings and added value for the Ukrainian economy, which may be useful for government agencies in predicting the areas of post-war recovery of the country's agricultural sector

▸ **Keywords:** grain market; commodity exports; import dependence; beef cattle and pig products; added value; economic effect

▸ Introduction

Ukraine has always been an agrarian country. According to the Official Website of the State Statistics Service of Ukraine (n.d.), before the war, the share of agricultural exports was 40.7% (USD 27.7 billion). In 2022, this figure increased to 53% (USD 23.4 billion), and in 2023 it exceeded 60% of the country's total exports. However, the problem of excessive concentration of raw materials in agricultural exports has been a topic of debate among the academic community and sectoral authorities for a long time. This issue became especially acute during the war, in the face of extraordinary geopolitical, economic, organisational, and logistical challenges. In 2021, the share of grain in Ukraine's total exports was 18.1%. During the full-scale war, these relative figures increased considerably. Thus, in 2022, the export share of grain crops increased to 20.6%, and in 2023 – to 23%. In 2024, the export revenue from grain sales exceeded USD 9.4 billion. Its share in total exports was 22.6%.

According to S. Cheremisina *et al.* (2025), only 20-25% of the total grain volume is used for domestic consumption. The rest is exported to foreign markets. However, in 2022-2024, grain production became a problem for both the internal and external markets. Therefore, agricultural producers should not only look for channels and markets for their products, but also ensure the processing of their raw materials, which will help to increase the level of profit from their sales. Agricultural products only become a full-fledged commodity if they are sold on the external market as a highly processed product with high added value, which brings a much greater amount of income.

Solving the problems of optimising the grain market, namely, reducing the concentration of grain crops in agricultural exports, allocating part of the grain to expand the capacity of the markets for beef cattle and pig products, and achieving an increase in export earnings and added value for the Ukrainian economy are all relevant. The issues of organisational, economic, and logistical challenges faced by Ukrainian grain exports since the beginning of the full-scale war, and the substantiation of the areas of development of the meat market as a product with high added value have been the subject of research by many scholars.

Y. Voloshchuk & O. Shedlovska (2024) focused their research on the need to find mechanisms for the strategic development of the grain market of Ukraine. The researchers conducted a thorough analysis of the problems and challenges faced by both the internal and global grain markets. The monitoring of current market developments in the grain market allowed the researchers to identify priority areas for the strategic development of the Ukrainian grain market in the context of current geopolitical and economic challenges. The major driver of the post-war economic recovery is to increase the investment attractiveness of agricultural enterprises and increase exports of high value-added products.

V. Budziak & O. Budziak (2024) studied the complex of problems faced by the Ukrainian meat market during the war. The researchers formulated a hypothesis that regulating the production of certain types of animal meat and stimulating their exports under martial law can increase the profitability of livestock farming and its further development. A. Sakhno & I. Salkova (2021) focused on the production and consumption of meat and meat products in Ukraine. The researchers identified the key changes in meat supply and demand, the density and vector of the relationship between consumption and the factors that determine it. The study reported a strong cause-and-effect relationship between meat consumption and supply in Ukraine. The researchers focused on the decline in household incomes, reduced supply, and positive dynamics of meat prices as priority factors.

O. Svitovyi (2021) thoroughly analysed the current state of grain production and the key products of its processing. The presented practical recommendations for improving the management of production and marketing of grain and its processed products in the context of maximising added value are of considerable interest. The researcher emphasised the need to expand the range of finished grain products and increase exports of grain products. This will contribute to the growth of added value and increase the country's export potential.

O. Yurchenko *et al.* (2024) studied the current state of pig production in Ukraine. The researchers assessed the direct losses of industrial pig production as a result of the hostilities and identified the major problems of the functioning and further development of the pork market. The researchers suggested that the short-term task is to increase pork production and expand export markets. The development of pig production is linked to state support and optimisation of the grain market in Ukraine.

D. Sedikov & I. Sedikova (2023) noted that Ukraine has significant prospects for the development of the market for deeply processed grain products with high added value. The researchers addressed the problem of the raw material nature of Ukrainian exports (almost a quarter of which is grain). They analysed the areas of deep grain processing and production of high value-added products that are in demand in the internal market and have prospective export potential.

O. Nechyporenko *et al.* (2024) identified the state and trends of beef production in the world and Ukraine. The researchers focused on possible scenarios for the development of the beef market, considering the reality of international economic integration. The policy of expanding beef exports from Ukraine to countries with which regional trade agreements were concluded, especially regarding the production of kosher and halal products, is considered promising. D. Enahoro *et al* (2021) investigated the problems of livestock development in developing countries. The researchers examined the current state of meat trade and presented plausible forecasts for the future, highlighting the effects of animal diseases on current and future trade dynamics.

M. Ijaz *et al.* (2021) studied the global negative impact of the COVID-19 pandemic on global production, supply chains, and meat prices. The researchers argued that integration between all stakeholders in the meat industry is essential for the resilience of the industry's supply chain to handle such disruptive conditions that may arise in the future. G.K. Dambaulova *et al.* (2022) identified the export potential of the pork market in Kazakhstan and predicted the key indicators of its development. The researchers foresaw positive prospects for expanding pork production in the country and gradually entering foreign markets, particularly China and Russia.

G. Mateos *et al.* (2024) thoroughly assessed the current situation and future prospects for pork production in the EU. The study noted that in the short term, pork production in the EU is expected to decline. To maintain the performance of the pig industry, the researchers proposed the gradual implementation of such strategies as ensuring proper maintenance of meat quality for export markets, improving animal disease control, and intensifying the introduction of technological innovations in the pork production process.

Mentioned studies focus on the negative impact of a full-scale war on grain exports from Ukraine, destructive changes in grain export logistics, and the need to find alternatives to grain exports, namely the use of part of grain export flows in meat production. However, the existing research lacks elements of calculation and design to determine the volumes of grain (wheat, maize, and barley) necessary to produce the forecast parameters of pork and beef and to calculate the incremental effect on the Ukrainian economy. The purpose of this study was to develop a mechanism for optimising the grain market aimed at reducing the export burden and assessing the potential effect on the agricultural economy of Ukraine.

▸ Materials and methods

The study employed a series of methods of scientific cognition. The method of comparative analysis was used for analytical monitoring of the dynamics of indicators of raw material concentration in the export of agri-food products and retrospective monitoring of indicators of production and consumption of beef, veal, and pork in Ukraine. The calculation-constructive method was employed to determine the indicators of import dependence of the beef, veal, and pork markets. Statistical method was used to determine the required volumes of grain (wheat, maize, and barley) required to produce forecast parameters for expanding the capacity of the markets for beef cattle and pig products.

The methodological tools of trend extrapolation were comprehensively applied to determine the real trends in the reduction of livestock in beef cattle and pig production. Using the tabular method, the study illustrated the identified forecast indicators of optimisation of the grain market structure and parameters of increasing export earnings and added value for the Ukrainian economy. The abstract and logical method was applied to formulate conclusions.

The conceptual features of the study included the substantiation of the areas of optimisation of the structure of the grain market of Ukraine with the corresponding definition of indicators of raw material concentration in the export of agri-food products; determination of indicators of import dependence of beef and pork markets; calculation of the volumes of grain (wheat, maize, and barley) required to produce forecast parameters for expanding the capacity of the markets for beef cattle and pig products; determination of forecast parameters for increasing export earnings and added value for the economy of Ukraine.

The study was based on the dynamics of statistical and calculated data for 2010-2024. To establish the scale of the reduction in production and consumption of beef, veal, and pork, the retrospective dynamics of the relevant indicators for 1990-2024 was chosen. The corresponding forecast calculations of the parameters of expansion of beef and pork markets, reduction of the export burden of the grain market, and increase in export earnings and added value for the Ukrainian economy were calculated for the period up to 2030. The empirical basis of the study was the data from the Official website of the State Statistics Service of Ukraine (n.d.a; n.d.b; n.d.c).

The indicator of raw material concentration in Ukraine's agricultural exports was determined according to the following formula:

$$AP_{si} = \frac{RAG_{exi}}{AG_{exi}} \cdot 100\%, \quad (1)$$

where AP_{si} – the share of exports of agricultural raw materials in the i^{th} period, %; RAG_{exi} – the export of agricultural raw materials in the i^{th} period, billion USD; AG_{exi} – the total export of agricultural products in the i^{th} period, billion USD.

Share of exports of high value-added agricultural products:

$$AP_{si} = \frac{PF_{exi}}{AG_{exi}} \cdot 100\%, \quad (2)$$

where AP_{si} – the share of agricultural products in the total structure of exports in the i^{th} period, %; PF_{exi} – the exports of finished food products for the i^{th} period, USD billion.

The ratio of exports of raw materials to finished agricultural products was calculated using the following formula:

$$Rc_i = \frac{RAG_{exi}}{PF_{exi}}. \quad (3)$$

The import-export coverage ratio for the beef and pork markets was calculated using the following formulas:

$$IEbm_i = \frac{Bex_i}{Bi_i}, \quad (4)$$

where $IEbm_i$ – the import-export coverage ratio in the beef market in the i^{th} period; Bex_i – the volume of beef exports in the i^{th} period, thousand tonnes; Bi_i –the volume of beef imports in the i^{th} period, thousand tonnes;

$$IEpm_i = \frac{Pex_i}{Pi_i}, \quad (5)$$

where $IEpm_i$ – the coefficient of import coverage of exports in the pork market in the i^{th} period; Pex_i – the volume of pork exports for the period, thousand tonnes; Pi_i – the volume of pork imports in the i^{th} period, thousand tonnes.

The dynamics of the level of self-sufficiency of the beef and pork markets in Ukraine was estimated using the following formulas:

$$IBm_i = \frac{Bi_i}{VDbc_i}, \quad (6)$$

where IBm_i – the import dependency ratio of the beef market in the i^{th} period; $VDbc_i$ – the volume of domestic beef consumption in the i^{th} period, thousand tonnes;

$$IBp_i = \frac{Pi_i}{VDpc_i}, \quad (7)$$

where IPm_i – the import dependence ratio of the pork market in the i^{th} period; $VDpc_i$ – the volume of domestic pork consumption in the i^{th} period, thousand tonnes.

The volumes of grain (wheat, maize, and barley) required to produce the forecast parameters for expanding the capacity of the beef cattle and pig markets were determined by the following structures:

1) total estimated need for concentrated feed to produce 1 kg of beef, kg of feed units: 1.3 (wheat) + 1.5 (maize) + 0.5 (barley) + 1.6 (feed maize meal) + 0.7 (feed wheat meal) + 0.4 (milling waste) = 6 kg of feed units;

2) total estimated need for concentrated feed to produce 1 kg of pork, kg of feed units: 0.9 (wheat) + 1.44 (maize) + 0.81 (barley) + 0.68 (feed maize meal) + 0.23 (feed wheat meal) + 0.45 (milling waste) = 4.5 kg of feed units.

These parameters were calculated using the Order of the State Statistics Committee of Ukraine No. 18 (2008). The forecast parameters of feed demand in terms of grain were calculated using the following formula:

$$Gn_n = \frac{Ft_j}{Fu_j}, \quad (8)$$

where Gn_n – the demand for the n^{th} type of grain, kg; Ft_j – the demand for the j^{th} type of feed for the production of 1 kg of beef (pork), kg of feed units; Fu_j – the content of feed units in 1 kg of the j^{th} type of feed, kg of feed units.

Next, the need for a specific type of grain to produce 1 kg of beef (pork) is determined as the corresponding sum of feed types, depending on the type of grain they are produced from – wheat, maize, and barley:

$$Gn_w = \sum_{j=1}^{n} \frac{Ft_j}{Fu_j}, \quad (9)$$

where Gn_w – the demand for wheat grain to produce 1 kg of beef (pork), kg; n – the number of types of feed produced from wheat;

$$Gn_c = \sum_{j=1}^{n} \frac{Ft_j}{Fu_j}, \quad (10)$$

where Gn_c – the demand for corn grain to produce 1 kg of beef (pork), kg; n – the number of types of feed produced from maize;

$$Gn_b = \sum_{j=1}^{n} \frac{Ft_j}{Fu_j}, \quad (11)$$

where Gn_b – the demand for barley grain to produce 1 kg of beef (pork), kg; n – the number of types of feed produced from barley.

The total amount of grain for beef production is determined by the following formula:

$$Vb = \sum(Gn_w + Gn_c + Gn_d) \cdot Fb_{prod}, \quad (12)$$

where Vb – the volume of grain to produce the forecast annual volume of beef, million tonnes; Fb_{prod} – the forecast of beef production, million tonnes per year.

The total volume of grain for pork production is determined by the following formula:

$$Vp = \sum(Gn_w + Gn_c + Gn_d) \cdot Fp_{prod}, \quad (13)$$

where Vp – the volume of grain to produce the forecast annual volume of pork, million tonnes; Fp_{prod} – the forecast of pork production, million tonnes per year.

The calculation of the added value from the use of grain in Ukraine for fattening and selling beef is determined according to the following formula:

$$AdV = ((Fb_{prod} \cdot P_{bf}) + (Fp_{prod} \cdot P_p)) - (Gn_w \cdot P_w + Gn_c \cdot P_c + Gn_b \cdot P_b), \quad (14)$$

where AdV – the value added, UAH million; P_{bf} – the price of a tonne of beef, UAH; P_p – the price of a tonne of pork, UAH; P_w – the price of a tonne of wheat, UAH; P_c – the price of a tonne of maize, UAH; P_b – the price of a tonne of barley, UAH.

Results and discussion

Over 2010-2024, the share of agricultural products in Ukraine's total exports tripled, from 19.3% in 2010 to 59.1% in 2024, a trend that intensified during the war (Cheremisina *et al.*, 2025). Thus, according to the Official Website of the State Statistics Service of Ukraine (n.d.), this indicator was 40.7% in 2021, increased to 53% in 2022, to 60.8% – in 2023, and decreased by 1.7% in 2024 (Table 1). A stable trend in Ukrainian agricultural exports is the high concentration of raw materials. Thus, during the analysed period, the share of raw agricultural exports increased by 10.7% – from 74.1% in 2010 to 84.8% in 2024. Therewith, the share of processed food products in the structure of agricultural exports has been steadily declining – from 25.9% in 2010 to 15.2% in 2024. The ratio of exports of raw materials to finished products almost doubled over the analysed period – from 2.87 to 5.57, i.e., USD 1 of exports of processed agricultural products accounts for USD 5.6 of exports of raw materials.

Table 1. Dynamics of raw material concentration in agri-food exports

Indicator	2010	2015	2020	2021	2022	2023	2024
Share of agricultural products in total exports, %	19.3	38.2	45.1	40.7	53.0	60.8	59.1
Exports of agricultural products – total, billion USD	9.94	14.56	22.18	27.71	23.39	22.0	24.7
Including:							
raw material exports	7.37	12.09	18.66	23.77	20.75	18.57	20.94
share, %	74.1	83.0	84.1	85.8	88.7	84.4	84.8
export of processed products	2.57	2.47	3.52	3.94	2.64	3.43	3.76
share, %	25.9	17.0	15.9	14.2	11.3	15.6	15.2

Table 1, Continued

Indicator	2010	2015	2020	2021	2022	2023	2024
ratio of exports of raw materials to finished goods	2.87	4.89	5.30	6.03	7.86	5.41	5.57
Grain exports, billion USD	2.47	6.06	9.41	12.34	9.11	8.31	9.42
Including:							
wheat	0.91	2.24	3.60	5.07	2.68	2.94	3.74
maize	0.79	3.0	4.88	5.89	5.93	4.97	5.07
share of grain in agricultural exports, %	24.8	41.6	42.4	44.5	38.9	37.8	38.1
share of wheat and maize in grain exports, %	68.8	86.5	90.1	88.8	94.5	95.2	93.5
Meat exports, billion USD	0.09	0.38	0.65	0.85	0.92	0.89	1.05
Including:							
beef and veal	0.046	0.084	0.084	0.12	0.069	0.086	0.079
pork	0.003	0.055	0.006	0.007	0.0005	0.003	0.008
share of meat in agricultural exports, %	0.9	2.6	2.9	3.1	3.9	4.0	4.2

Source: based on State Statistics Service of Ukraine (n.d.a; n.d.b; n.d.c)

One of the major export commodities is grain. During the analysed period, its share in the structure of agricultural exports increased from 24.8% in 2010 to 38.1% in 2024. In 2023, the share of grain in the overall structure of Ukrainian exports reached its five-year high, exceeding 23%. Wheat and maize are consistently dominant by type of grain, with their share in grain exports increasing from 68.8% to 93.5% over the analysed period. At the same time, export earnings from meat sales continue to be insignificant. During the analysed period, they did not exceed USD 1 billion, and their share in total agricultural exports was 3-4%. Chicken continues to be the primary meat export product, while annual exports of beef, veal, and pork do not exceed USD 100 million, which is 0.4% of the agricultural export structure.

The high concentration of raw materials in Ukrainian agricultural exports leads to considerable price disparities between raw materials for agricultural exports and processed raw materials into high value-added products. This causes not only significant annual losses in export earnings, but also potential job losses and a decline in the country's GDP. It was found that during the war, the share of grain exports from Ukraine in total production increased significantly. Thus, while in 2021 this figure was 62.4%, in 2023 it increased to 75%, and in 2024 it exceeded 96%. It was determined that on average, in 2022-2024, grain exports accounted for 73.5% of total production, while domestic consumption did not exceed 25%. However, the full-scale war led to a series of organisational, economic, and logistical challenges faced by Ukrainian grain exports. As a result, grain production is becoming problematic for both the internal and European markets.

Ukrainian producers have suffered substantial losses due to the catastrophic rise in the price of fuel, fertilisers, other inputs to the production process and logistics costs. However, the internal and external price situation for grain is not conducive to the efficient reproduction of production processes by rural producers. As for the problems of foreign markets, the reorientation of grain logistics flows from sea routes to Asia and Africa to the EU has led to a marked decline in grain prices in Europe. The fundamental reason for this is clearly a significant imbalance in the comparison of a set of indicators of agricultural production in Ukraine and the EU countries – the quality of land resources, labour costs, cost structure, and economies of scale.

The problem of finding ways to reorient the raw material orientation of Ukraine's agricultural sector towards processing raw materials and creating high value-added products has become particularly acute during the full-scale war. The search for channels, logistics routes for export, and new markets for agricultural products is not the way forward for the effective post-war recovery of Ukrainian agriculture. Gradually increasing the level of processing of domestic products, aimed at creating high value-added goods, will not only bring more income to producers, but also contribute to sustainable GDP growth. One of these intermediate areas is the revival and gradual development of Ukrainian beef cattle and pig breeding. An analysis of the retrospective dynamics of statistical data on the state of these components of the Ukrainian meat market shows a steady downward trend in both absolute production and relative consumption indicators (Table 2).

Table 2. Retrospective dynamics of production and consumption of beef, veal, and pork

	1990	2000	2010	2015	2020	2021	2022	2023	2024
Production in slaughter weight, thousand tonnes									
beef and veal	1,985.4	754.3	427.7	384.0	345.4	310.5	268.4	256.9	244.5
pork	1,576.3	675.9	631.2	759.7	697.2	724.0	658.7	638.2	672.1
Production per 1 person, kg									
beef and veal	38.3	15.3	9.3	8.9	8.2	7.5	7.8	7.6	7.2
pork	30.4	13.8	13.8	17.8	16.8	17.6	19.4	18.8	19.7

Table 2, Continued

	1990	2000	2010	2015	2020	2021	2022	2023	2024
Consumption per 1 person, kg									
beef and veal	32.4	13.2	9.8	8.1	8.1	7.3	7.0	6.2	6.0
pork	19.2	10.3	18.0	18.1	18.8	19.9	19.5	19.3	19.4
Production to consumption ratio indicator									
beef and veal	1.18	1.16	0.95	1.10	1.01	1.03	1.11	1.23	1.18
pork	1.58	1.34	0.77	0.98	0.89	0.88	0.99	0.97	1.2

Source: based on State Statistics Service of Ukraine (n.d.a; n.d.b; n.d.c)

During the analysed period, beef and veal production decreased by almost 8 times, and pork production by 2.5 times. The respective relative indicators of production and consumption per capita decreased by 5.3 and 5.4 times for beef cattle products, and by 1.7 times for pork meat, respectively (the indicator of pork consumption per capita did not change – within 18-19 kg). It was found that the factual consumption of beef and veal meat by the population was almost 6 times lower than the rational norm, and pork – 1.5 times.

The key synergistic reasons for this decline in consumption of these types of meat include the low purchasing power of the Ukrainian population and the catastrophic decline in the number of livestock. Thus, since independence, the number of cattle has decreased by 11 times (from 24.6 million heads in 1991 to 2.2 million heads in 2024), fattening calves by 22 times (from 1.4 million heads to 0.6 million heads), and pigs by 4 times (from 19.5 million heads to 5.1 million heads). Considering the existing trends, the selected trend equations formally describe them as follows:

- the number of fattening calves by 2029 may further decrease by 35% to 362 million heads ($y = -0.5136x^3 + +3{,}113.6x^2 - 6E+06x + 4E+09$; $R^2 = 0.978$);
- the number of pigs by 2029 may decrease by 14% to 4.4 million heads ($y = -4{,}597.4\text{Ln}(x) + 21{,}337$; $R^2 = 0.934$).

Most of the added value generated by the country's economy is generated in foreign trade. Therefore, the most promising areas for the post-war development of Ukraine's agricultural sector are to direct agricultural production capacities to occupy and expand new market niches. According to the forecast indicators of the Organisation for Economic Co-operation (OECD) FAO, global pork consumption will gradually increase and may reach 16.5 million tonnes by 2030 (Hopka, 2023). If, according to 2022 data, global trade in pork products was 11 million tonnes, it is reasonable to assume that by 2030, the annual increase in consumption will average 2 million tonnes. At the same time, the gradual decline in the number of pigs in the EU is a stable trend. Rising environmental standards and the development of policies to minimise the negative environmental impact of pig production processes are leading to subsidies for the closure of pig farms in EU countries. Accordingly, a promising market niche is opening for Ukrainian agribusiness – bringing annual pork production to 2 million tonnes in slaughter weight and a corresponding increase in livestock. The cross-sectoral programme New Pig Farming 2025 (2020), initiated in 2020, envisages a gradual increase in the number of pigs to the 1991 level of 20 million, which is 4 times greater than the factual level. Pig farming in the post-war perspective of the development of the agricultural sector of the economy can be a truthful way to gradually solve the problems of grain exports.

As for the perspective parameters of modelling the development of the beef and veal market as products with higher added value, the priority should be to expand the capacity of the internal market to ensure that consumption by the population meets the rational standards of 32.4 kg per person per year. Thus, the expansion of the domestic beef, veal, and pork market will contribute to its price stabilisation and the formation of a significant export potential of the beef cattle and pig industries. Thus, in 2021, beef and pork prices increased by 22.3% and 7.5%, respectively, in 2022, the price increase was 3.9% and 36%, in 2023 – 18.9% and 15.4%, and in 2024 – 13.1% and 3.4%. During the war, consumer prices for beef increased by 55.6%, from UAH 182.84 UAH/kg to UAH 284.53 UAH/kg, and for pork by 48.5%, from UAH 123.75 UAH/kg to UAH 183.31 UAH/kg. This is despite a steady decline in household incomes and purchasing power. During the analysed period, imports of beef and veal decreased by 26.6% (from 3.68 to 2.7 thousand tonnes), and pork by 48 times (from 108.6 to 2.3 thousand tonnes) (Table 3).

Table 3. Retrospective dynamics of import dependence indicators for beef, veal, and pork markets

	2010	2015	2020	2021	2022	2023	2024	For the period up to 2030	2024 as % of 2010
Import, thousand tonnes									
beef and veal	3.68	1.16	2.07	2.79	1.1	2.3	2.7	0.5	73.4
pork	108.6	3.69	28.02	40.65	46.9	12.99	2.27	1.5	2.1
Export, thousand tonnes									
beef and veal	13.39	32.06	24.42	27.21	15.4	21.3	19.46	150.5	145.3
pork	0.61	27.17	2.9	3.81	0.3	0.9	3.2	1,151.5	524.6
Import-export coverage ratio									
beef and veal	3.64	27.64	11.80	9.75	14.00	9.26	7.21	300	198.1
pork	0.01	7.36	0.10	0.09	0.01	0.07	1.41	767	141

Table 3, Continued

	2010	2015	2020	2021	2022	2023	2024	For the period up to 2030	2024 as % of 2010
Domestic food consumption, thousand tonnes									
beef and veal	447	347	337	299	238	211	204	850	45.6
pork	825	775	786	824	702	667	671	850	81.3
Import dependence indicator, %									
beef and veal	0.82	0.33	0.61	0.93	0.46	1.09	1.32	0.06	0.5
pork	13.16	0.48	3.56	4.93	6.68	1.95	0.34	0.18	-12.8

Source: based on State Statistics Service of Ukraine (n.d.a; n.d.b; n.d.c)

Exports of these types of meat increased by 1.5 and 5.2 times, respectively. The import-export coverage ratios for beef and veal meat increased by a factor of 2, from 3.64 in 2010 to 7.21 in 2024, while for pork these indicators increased significantly, from 0.01 to 1.41, but were still insufficient. Therewith, the absolute and relative indicators of meat exports as a high value-added product stayed extremely low. In pre-war 2021, exports of beef and veal amounted to 27.21 thousand tonnes or 8.8% of total production, while pork exports were much lower – 3.81 thousand tonnes or 0.5% of production. During the war, export flows of beef cattle and pig products deteriorated to 5.7 thousand tonnes and 8.3% for beef and veal, and to 0.05 thousand tonnes and 0.14% for pork.

The determined indicators of import dependence of the beef cattle and pig production markets indicate an extremely low (within 1%) dependence on imports of Ukrainian beef and veal markets and a decrease in this indicator for pork by 12.8% – from 13.2% in 2010 to 0.34% in 2024. If annual pork production is increased to 2 million tonnes in slaughter weight, and beef and veal production to a promising 1 million tonnes, the relevant indicators of import dependence and available export potential can reach the following parameters. If the consumption of beef and pork is brought to the factual poultry consumption rate of 25 kg per person per year, domestic consumption will increase to 850 thousand tonnes, respectively. Therewith, Ukraine can export 150.5 thousand tonnes of beef and veal and almost 1.2 million tonnes of pork annually. The respective import dependence indicators will decrease to a minimum of 0.06% and 0.18%. To determine the required volumes of grain (wheat, maize, and barley) required to produce the forecast parameters for expanding the capacity of the markets for beef cattle and pig products, the study used the established statistics of the retrospective dynamics of feed consumption per unit of livestock production (Table 4).

Table 4. Feed consumption per unit of livestock meat production, feed units

Indicators	2010	2015	2019	2020	2021	2022	2023	
Per 1 kg of cattle gain								
Feeds of all kinds	15.69	14.80	13.95	12.84	13.17	12.55	12.50	Forecast parameters of demand in terms of grain, kg for the period up to 2030
including concentrated	4.47	4.93	6.65	6.12	6.15	5.87	6.09	
types of concentrated feed from grain crops	Content of feed units per 1 kg of feed				Estimated demand for concentrated feed, feed units			
soft wheat	1.28				1.3			1.02
maize	1.33				1.5			1.13
barley	1.15				0.5			0.43
feed maize meal	1.33				1.6			1.20
feed wheat meal	1.12				0.7			0.63
flour milling waste	0.63				0.4			0.63
Total	X				6.0			5.04
Per 1 kg of pig gain								
Feeds of all kinds	5.98	4.46	4.84	4.79	4.60	4.44	4.31	Forecast parameters of demand in terms of grain, kg for the period up to 2030
including concentrated	5.71	4.34	4.80	4.75	4.56	4.41	4.28	
types of concentrated feed from grain crops	Content of feed units per 1 kg of feed				Estimated demand for concentrated feed, feed units			
soft wheat	1.28				0.9			0.70
maize	1.33				1.44			1.08
barley	1.15				0.81			0.70
feed maize meal	1.33				0.68			0.51
feed wheat meal	1.12				0.23			0.20
flour milling waste	0.63				0.45			0.71
Total	x				4.50			3.91

Source: based on State Statistics Service of Ukraine (n.d.a; n.d.b; n.d.c), Order of the State Statistics Committee of Ukraine No. 18 (2008)

Based on the average consumption of concentrated feed per 1 kg of beef and veal production of 6.0 feed units, the forecasted demand for particular types of grain crops is 2.28 kg of wheat, 2.33 kg of maize, and 0.43 kg of barley. The average feed consumption to produce 1 kg of pork is 4.5 feed units. Therefore, the determined feed requirement in terms of grain is as follows: wheat – 1.62 kg per 1 kg of pig gain, maize – 1.59 kg, barley – 0.7 kg. The total projected demand for grain to produce the specified volumes of beef and pork is 12.94 million tonnes per year. Of these, wheat is 5.51 million tonnes, maize is 5.59 million tonnes, and barley is 1.84 million tonnes (Table 5).

Table 5. Forecast indicators for optimising the structure of the Ukrainian grain market

Types of grain crops	Production, million tonnes			Exports, million tonnes			Projected grain demand for meat production, million tonnes			Forecast of grain export volumes, million tonnes*	Export load indicator, %		
	2022	2023	2024	2022	2023	2024	beef and veal	pork	total		factual 2023	factual 2024	forecast*
Wheat	20.7	21.6	22.4	11.2	16.2	20.7	2.28	3.24	5.51	10.5	75.0	92.4	48.8
Maize	26.2	31.0	26.9	24.9	26.4	29.6	2.33	3.26	5.59	21.4	85.2	110.0	76.3
Barley	5.6	5.5	5.3	2.1	2.2	3.4	0.43	1.41	1.84	0.7	40.0	64.2	13.3
Total	52.5	58.1	54.6	38.2	44.8	53.7	5.04	7.91	12.94	32.6	x	x	x

Notes: *the average values of grain export production indicators for 2022-2024 were used to calculate the forecast indicators

Source: based on State Statistics Service of Ukraine (n.d.a; n.d.b; n.d.c)

The annual demand for grain for fattening and production of beef and veal is 5.04 million tonnes, and for pork production – 7.91 million tonnes. This will result in a certain optimisation of the grain market structure in Ukraine. If certain volumes of wheat, maize, and barley are used to feed animals for meat production rather than for export, the relevant indicators of the market's export load will decrease significantly. Thus, in 2023, 75% of the total wheat production was exported, while the figure for maize exceeded 85% and barley – 40%. In 2024, grain exports exceeded the pre-war figures of 2021, and the export load indicators reached record levels: wheat – 92.4%, maize – 110.0% (including last year's balances), barley – 64.2%. The reorientation of grain exports to internal production of high value-added meat products will reduce these export load indicators for grain crops to 48.8%, 76.3%, and 13.3%, respectively.

Therefore, the effective parameter of the grain market optimisation will be a decrease in annual grain exports by 28.4% on average (from 45.6 million tonnes to 32.6 million tonnes). In terms of the main export crops, this reduction will be 34.5% for wheat (from 16.0 million tonnes to 10.5 million tonnes), 20.7% for maize (from 27.0 million tonnes to 21.4 million tonnes), and 73.1% for barley (from 2.6 million tonnes to 0.7 million tonnes). It was found that such a decline in grain exports, with a corresponding possible increase in beef and pork exports, will not be reflected in a reduction in export earnings. If, according to the data of 2024, export earnings from the sale of grain and beef and pork meat amounted to USD 9.5 billion, the optimisation of the agricultural structure will not affect the export earnings. Optimising the structure of the agricultural market will help to increase this figure to USD 10.7 billion (or 12.6%) (Table 6).

Table 6. Forecast parameters for the increase in export earnings and added value for the Ukrainian economy, UAH million/USD million

Product types	Production, million tonnes		Exports, million tonnes		Exports, million USD		Cost of grain for meat production, UAH million	Cost of meat, UAH million	Value added, UAH million
	2024	Forecast	2024	Forecast	2024	Forecast			
Wheat	21.6	–	20.7	10.5	3,736.3	1,940.7	40,012.1	x	x
Maize	31	–	29.6	21.4	5,072.4	4,314.8	42,063.9	x	x
Barley	5.5	–	3.4	0.7	557.3	115.5	12,123.9	x	x
Beef and veal	0.24	1	0.019	0.15	79	943.4	36,922.9	260,150	223,227.1
Pork	0.67	2	0.003	1.15	7.98	3,373.3	57,277.1	359,620	302,342.9
Total					9,452.98	10,687.7	94,200.0	619,770	525,570
					+1,234.7 USD million				or 12,513.5 USD million

Source: based on State Statistics Service of Ukraine (n.d.a; n.d.b; n.d.c)

It was found that the amount of added value, which is the newly created value acquired by grain crops used for meat production in the process of passing the chain from producer to end consumer, will amount to UAH 525.6 billion or USD 12.5 billion. In contrast to the findings of L. Pobochenko *et al.* (2023), who suggested that it is the raw grain exports that are most promising, it is necessary to intensify processing and transform grain flows into high value-added products.

The findings of Yu. Haida & B. Shainiuk (2023), who made an indicative assessment of the significant potential of the global grain market, the growth of supply volumes

due to increased production by the world's largest exporters – Australia, Argentina, Canada, and the United States, confirmed the findings of the present study that a decrease in grain exports from Ukraine will not affect global food security. The authors of the present study agree with the opinion of M. Constantin *et al.* (2023) that a sound policy of transforming raw grain exports into exports of high value-added agri-food products will contribute to the sustainability, competitiveness, and efficiency of the country's agriculture.

O. Hromyk & O. Semenda (2023) focused on the steady growth of the capacity and export potential of the chicken meat market in Ukraine. The researchers noted that chicken production currently has a series of competitive advantages, the key among which is affordability compared to other types of meat products. Consumption of chicken is growing, while that of pork and beef is declining. It is worth agreeing with the researchers' conclusions on the need to introduce mechanisms for the development of other livestock sectors, such as beef cattle and pig production. The findings of O. Skydan *et al.* (2024) are quite interesting for the methodology and practice of post-war agricultural development in Ukraine. The researchers' model of a cybernetic management system in the agricultural sector of the economy, aimed at gradually increasing the production of high value-added products and reducing the raw material export dominance in the context of EU integration, should be supported.

N. Sansika *et al.* (2023) conducted a thorough investigation of the effects of economic globalisation on agriculture in the context of the dynamics of value added and income levels of countries. The researchers employed a multifactorial approach to determine the impact of economic globalisation on the dynamics of value added in agriculture, including production consumption of resources, employment, exports, imports, exchange rates, investment activity, etc. It is reasonable to agree with the researchers' conclusions that the priority influence on the positive dynamics of value added in agriculture in developing countries is exerted by the level of employment, the national currency exchange rate, and foreign investment.

The findings presented by T. Melembe *et al.* (2021) are quite interesting for the development of a policy of post-war optimisation of Ukraine's agricultural sector in the context of reducing the concentration of raw materials in exports. The researchers found a correlation between the level of profitability of grain and livestock farmers and the degree of further processing of their products. It is worth supporting the researchers' research conclusions that extension policies, training, and information on value addition and agro-processing of raw materials can increase the profitability and strengthen the food security of South African farmers. S. Bonardi *et al.* (2021) studied and systematised EU food legislation on risk reduction and quality assurance requirements for meat, particularly pork. The researchers emphasised the need to further increase the requirements for meat products imported to the European market. It was proposed to increase the transparency of forward and backward communication in the pork production chain.

P. Greenwood (2021) focused on assessing beef production in countries around the world. The researcher argues that sustainable beef production requires high efficiency and productivity on the farm, as well as efficient value chains, which is required by the target market. It was emphasised that technological digitalisation would help to increase the productivity and efficiency of beef production. It accelerates the flow of information about the environment and cattle productivity and can improve the set of performance indicators in the beef industry.

Understandably, production processes in beef cattle and pig production involve certain technological costs, but the process itself gives the product additional consumer qualities and increases the price of the product (Bondarenko *et al.*, 2023). The primary factors that determine the value added are the processing of raw materials, the structure of the product range, and the quality of the product. At the same time, the creation of added value in such production chains as 'grain – cattle – meat' and 'grain – pigs – meat' should become a promising area for the post-war restructuring of Ukraine's agrarian economy.

Thus, the reorientation of Ukrainian agriculture from total grain exports to the expansion of the internal market for beef cattle and pig products is an extremely promising area for post-war economic recovery. Therewith, the dynamics of global beef and pork prices create real opportunities to generate added value not only domestically but also to increase the corresponding export flows. However, the effective development of beef cattle and pig farming requires government support and logistical expansion of sales markets.

For example, the European markets are attractive due to their proximity, favourable pricing policies, and the long-standing experience of cooperation. However, the integration path to the European consumer is becoming increasingly challenging for Ukrainian agricultural products. The EU government pursues a tough protectionist policy to safeguard its producers. This is a consistent practice of introducing quota restrictions, expanding the list of environmental and phytosanitary requirements, and tightening European standards not only for the quality of finished products but also for the entire technological chain of their production (cultivation).

Therefore, the European market for Ukrainian beef and pork has limited prospects (Matviichuk *et al.*, 2024). Based on the statistics of consumption of different types of meat in European countries according to V. Budziak & O. Budziak (2024), it is advisable to choose countries with the lowest consumption of beef and pork meat per capita for logistical export targets. For example, the markets of such countries as Moldova, Romania, Bulgaria, Latvia, Lithuania, and Slovakia, where beef consumption per capita does not exceed 6 kg per year, may be quite accessible to Ukrainian beef producers. For promising pork export destinations, Ukraine can focus on such countries as Albania, Bosnia and Herzegovina, North Macedonia, and Greece. These countries have the lowest pork consumption in Europe – up to 15 kg per person. Outside of Europe, the most promising markets are typically the Middle East (Saudi Arabia, the United Arab Emirates, Turkey, and China). It is also necessary to search for and cover new markets, which could potentially be the countries of Southeast Asia – Thailand, Malaysia, Indonesia, Singapore, the Philippines, Vietnam, and others.

The conducted study correlates with the principal perspective scenarios contained in the Resolution of the Cabinet of Ministers of Ukraine No. 76-p (2025). The implementation of this programme is aimed at ensuring the progressive development of Ukraine's livestock sector and expanding the use of crop products (including grain) to increase beef and pork production as high value-added products. The result of the conducted study is the development and practical testing of a methodical calculation and design algorithm for post-war optimisation of the grain market of Ukraine, which, unlike the existing ones, comprehensively covers forecasting the parameters of expansion of the markets for beef cattle and pig products, determining indicators of reducing the export burden of the structural components of the grain market and parameters for increasing export earnings and added value. The conducted study is valuable for government agencies in strategic planning and forecasting the parameters of increasing the efficiency of grain production and livestock development as priority areas of economic growth in the agricultural sector of Ukraine in the post-war period.

▸ Conclusions

The study found that a stable trend in Ukrainian agricultural exports is a high concentration of raw materials rather than finished food products. The share of raw agricultural products is 85%, while exports of processed products do not exceed 15%. In the overall structure of Ukrainian exports, the share of grain exceeds 23%. The increase in grain exports from Ukraine creates problems for European farmers. Therewith, export earnings from meat sales continue to be insignificant at 3-4%. Between 1990 and 2024, beef and veal production decreased by almost 8 times, and pork production by 2.3 times. It was found that the factual consumption of beef and veal meat by the population is almost 6 times lower than the rational norm, and pork – 1.5 times. The study showed that, under current trends, the number of fattening calves could further decrease by 35% to 362 million heads by 2029, and the number of pigs could decrease by 14% to 4.4 million heads.

The high concentration of raw materials in Ukraine's agricultural exports leads to significant annual losses in export revenues, potential jobs, and a decline in the country's GDP. A possible scenario for increasing the level of agricultural processing is to channel part of grain exports into the production of livestock products, such as beef and pork. The forecast benchmarks for increasing beef production are to expand the capacity of the domestic market to ensure that consumption by the population meets the rational standard of 32.4 kg per person per year. Growth in global pork consumption opens a corresponding market niche for Ukrainian farmers, estimated at 2 million tonnes of meat per year.

The total projected need for grain to produce the specified volumes of beef and pork is 12.94 million tonnes per year (wheat – 5.51 million tonnes, maize – 5.59 million tonnes, barley – 1.84 million tonnes). Calculations proved that the use of certain volumes of wheat, maize, and barley to fatten animals for meat production rather than for export will significantly reduce the export load of the market: wheat – from 75% to 48.8%, maize – from 89% to 76.3%, barley – from 47% to 13.3%. Annual grain exports are forecast to decline by 28.4% (from 45.6 million tonnes to 32.6 million tonnes). The decline in grain exports, with a corresponding possible increase in beef and pork exports, will increase Ukraine's export earnings by 12.6% (from USD 9.5 billion to USD 10.7 billion). The key result of the study lies in determining the amount of added value that would be created by directing part of grain exports to beef and pork production. The study found that the gross domestic product of Ukraine could increase by UAH 525.6 billion or USD 12.5 billion. Further research will focus on determining the volume and sources of financing for the transformation of grain exports into the development of livestock production and grain processing.

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▸ References

[1] "New Pig Farming 2025": 20 million pigs by 2025, affordable meat prices for the population. (2020). Retrieved from https://association-mg.com.ua/novyny/293-20-mln-svinej-do-2025-roku-dostupni-tsini-na-m-yaso-dlya-naselennya.

[2] Bonardi, S., Blagojevic, B., Belluco, S., Roasto, M., Gomes-Neves, E., & Vågsholm, I. (2021). Food chain information in the European pork industry: Where are we? *Trends in Food Science & Technology*, 118, 833-839. doi: 10.1016/j.tifs.2021.10.030.

[3] Bondarenko, G., Nosevych, D., Kruk, O., & Chumachenko, I. (2023). Technological solutions for effective production on beef cattle breeding farms in the conditions of Ukraine. *Animal Science and Food Technology*, 14(4), 40-57. doi: 10.31548/animal.4.2023.40.

[4] Budziak, V., & Budziak, O. (2024). Prospects of Ukrainian export of animal meat. *Commodities and Markets*, 51(3), 60-74. doi: 10.31617/2.2024(51)04.

[5] Cheremisina, S., Rossokha, V., Selinnyi, M., Balan, O., & Nahornyi, V. (2025). Assessment of structural changes in exports and price situation on the Ukrainian grain market during the war. *Ekonomika APK*, 32(2), 50-62. doi: 10.32317/ekon.apk/2.2025.50.

[6] Constantin, M., Sapena, J., Apetrei, A., & Pătărlăgeanu, S.R. (2023). Deliver smart, not more! Building economically sustainable competitiveness on the ground of high agri-food trade specialization in the EU. *Foods*, 12(2), article number 232. doi: 10.3390/foods12020232.

[7] Dambaulova, G.K., Lilimberg, S.I., Madin, V.A., & Abdrakhmanova, G.T. (2022). Meta-analysis of the potential of Kazakhstani pork in the global market of meat products: Problems and prospects. *Veterinary World*, 15(11), 2705-2714. doi: 10.14202/vetworld.2022.2705-2714.
[8] Enahoro, D., Bahta, S., Mensah, C., Oloo, S., & Rich, K.M. (2021). Current and future trade in livestock products. *Scientific & Technical Review*, 40(2), 395-411. doi: 10.20506/rst.40.2.3232.
[9] Greenwood, P.L. (2021). Review: An overview of beef production from pasture and feedlot globally, as demand for beef and the need for sustainable practices increase. *Animal*, 15(1), article number 100295. doi: 10.1016/j.animal.2021.100295.
[10] Haida, Yu., & Shainiuk, B. (2023). The grain market in retrospect and outlook: A global analysis. *Innovation and Sustainability*, 4, 30-40. doi: 10.31649/ins.2023.4.30.40.
[11] Hopka, M. (2023). World pork market: Who loses and who gains. *Agrotimes*. Retrieved fromhttps://agrotimes.ua/opinion/svitovyj-rynok-svynyny-hto-vtrachaye-a-hto-znahodyt/.
[12] Hromyk, O., & Semenda, O. (2023). Meat consumption in Ukraine: Realities and problems of development. *Municipal Economy of Cities*, 5(179), 20-26. doi: 10.33042/2522-1809-2023-5-179-20-26.
[13] Ijaz, M., *et al.* (2021). Meat production and supply chain under COVID-19 scenario: Current trends and future prospects. *Frontiers in Veterinary Science*, 8, article number 660736. doi: 10.3389/fvets.2021.660736.
[14] Mateos, G.G., Corrales, N.L., Talegón, G., & Aguirre, L. (2024). Pig meat production in the European Union-27: Current status, challenges, and future trends. *Animal Bioscience*, 37(4), 755-774.doi: 10.5713/ab.23.0496.
[15] Matviichuk, L., Korsak, V., & Knysh, S. (2024). Development of partnership relations between hospitality industry entities amid Ukraine's European integration process. *Economic Forum*, 14(2), 17-26. doi: 10.62763/cb/2.2024.17.
[16] Melembe, T., Senyolo, G.M., & Mmbengwa, V.M. (2021). Factors influencing value-addition agricultural choice within smallholder farming agribusinesses of Gauteng Province in South Africa. *Journal of Agribusiness and Rural Development*, 60(2), 183-191. doi: 10.17306/J.JARD.2021.01374.
[17] Nechyporenko, O., Kryvenko, N., Liudvenko, D., Rud, V., & Nosenko, Yu. (2024). Status and prospects of beef and veal production in Ukraine in the context of international economic integration. *Scientific Horizons*, 27(2), 154-169. doi: 10.48077/scihor2.2024.154.
[18] Official Website of the State Statistics Service of Ukraine. (n.d.). Retrieved from https://stat.gov.ua/uk.
[19] Order of the State Statistics Committee of Ukraine No. 18 "On Approval of Methodological Recommendations for Calculating Feed Costs for Livestock and Poultry in Farms of All Categories". (2008, January). Retrieved from https://ips.ligazakon.net/document/FIN36817.
[20] Pobochenko, L., Tatarenko, N., & Prokopieva, A. (2023). Current trends in the development of the world grain market in the conditions of war in Ukraine. *Economy and Society*, 48. doi: 10.32782/2524-0072/2023-48-29.
[21] Resolution of the Cabinet of Ministers of Ukraine No. 76-p "On Approval of the Concept of the State Targeted Economic Programme for the Development of Livestock Farming for the Period until 2033". (2025, January). Retrieved from https://zakon.rada.gov.ua/laws/show/76-2025-%D1%80#Text.
[22] Sakhno, A., & Salkova, I. (2021). Study of sustainable development of meat product subcomplex and meat market in Ukraine. *Bulletin of the Khmelnytsky National University*, 3, 256-261. doi: 10.31891/2307-5740-2021-294-3-41.
[23] Sansika, N., Sandumini, R., Kariyawasam, C., Bandara, T., Wisenthige, K., & Jayathilaka, R. (2023). Impact of economic globalisation on value-added agriculture, globally. *PLoS One*, 18(7), article number e0289128. doi: 10.1371/journal.pone.0289128.
[24] Sedikov, D., & Sedikova, I. (2023). Strategic guidelines of the development of Ukrainian grain market in the post-war period. *Food Industry Economics*, 15(4), 31-37. doi: 10.15673/fie.v15i4.2797.
[25] Skydan, O., Bugaychuk, V., Grabchuk, I., Sych, K., & Kubrak, S. (2024). Growth of value added as a factor in the development of Ukrainian agriculture in the context of accelerated integration into the EU. *Scientific Horizons*, 27(5), 143-158. doi: 10.48077/scihor5.2024.143.
[26] State Statistics Service of Ukraine. (n.d.a). *Areas, gross harvests and yields of agricultural crops by species and by region*. Retrieved from https://stat.gov.ua/uk/datasets/ploshchi-valovi-zbory-ta-urozhaynist-silskohospodarskykh-kultur-0.
[27] State Statistics Service of Ukraine. (n.d.b). *Livestock production, number of farm animals and feed supply*. Retrieved from https://stat.gov.ua/uk/datasets/vyrobnytstvo-produktsiyi-tvarynnytstva-kilkist-silskohospodarskykh-tvaryn-i-zabezpechenist.
[28] State Statistics Service of Ukraine. (n.d.c). *Foreign trade in goods*. Retrieved from https://stat.gov.ua/uk/datasets/zovnishnya-torhivlya-tovaramy.
[29] Svitovyi, O. (2021). Management of production and sale of grain and products of its processing in the context of maximising value added. *Socio-Economic Research Bulletin*, 3-4, 66-80. doi: 10.33987/vsed.3-4(78-79).2021.66-80.
[30] Voloshchuk, Y., & Shedlovska, O. (2024). Strategic guidelines for grain market development. *Podilian Bulletin: Agriculture, Engineering, Economics*, 1, 74-81. doi: 10.37406/2706-9052-2024-1.11.
[31] Yurchenko, O., Bondarska, O., Lykhach, V., Kalitaev, K., & Kovalenko, O. (2024). The state of domestic pig production. Problems and prospects. *Podilian Bulletin: Agriculture, Engineering, Economics*, 42, 55-63. doi: 10.37406/2706-9052-2024-1.8.

Перспективи трансформації зернового експорту у розвиток тваринництва як сценарій економічного зростання аграрного сектору України в повоєнний період

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▸ **Анотація.** Метою дослідження було обґрунтування сценарію трансформації зернового експорту у розвиток м'ясного скотарства та свинарства, як продукції з високою доданою вартістю із відповідним визначенням індикативного позитивного впливу на економіку України. Було використано такі методи: порівняльного аналізу, статистичний, табличний, розрахунково-конструктивний, абстрактно-логічний, а також інструментарій екстраполяції тренду. Встановлено тенденцію зростання концентрації сировини в аграрному експорті України – 85 %. Частка зерна в загальному експорті продукції склало майже 25 %. Подальше нарощування зернового експорту стало проблемою для внутрішнього та зовнішнього ринку. Разом з тим експортні надходження від продажу м'яса залишилися незначними – 3-4 %, а виробництво яловичини та свинини стійко скорочується. Фактичне споживання населенням м'яса яловичини та телятини майже в 6 разів нижче за раціональну норму, свинини – в 1,5 раза. Визначено, що висока концентрація сировини в українському експорті аграрної продукції призводить до значних щорічних втрат експортної виручки, потенційних робочих місць та зменшення ВВП країни. Прогнозними орієнтирами параметрів збільшення виробництва яловичини до 1 млн т, свинини – до 2 млн т на рік. Визначено загальну прогнозну потребу в зерні для виробництва визначених обсягів яловичини та свинини – 12,94 млн т на рік (пшениці – 5,51 млн т, кукурудзи – 5,59 млн т, ячменю – 1,84 млн т). Розрахунками доведено, що спрямування визначених обсягів пшениці, кукурудзи та ячменю не на експорт, а на відгодівлю тварин для виробництва м'ясної продукції, сприятиме збільшенню експортних надходжень в Україну на 12,6 % (або на 1,23 млрд дол США на рік). Визначено, що ВВП України може зрости на 525,6 млрд грн. або 12,5 млрд дол США. Практичні результати дослідження дозволяють об'єктивно оцінити сценарій трансформації структури зернового ринку із відповідним визначенням прогнозних параметрів збільшення експортних надходжень та доданої вартості для економіки України, що може бути корисним для урядових органів при прогнозуванні напрямів повоєнного відновлення аграрного сектору країни

▸ **Ключові слова:** зерновий ринок; сировиний експорт; імпортозалежність; продукція м'ясного скотарства та свинарства; додана вартість; економічний ефект