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## Wholesale turnover of food products in Ukraine: Assessment and managerial decision-making

**Abstract.** The decline in Ukraine's wholesale food turnover caused by the occupation of fertile land in the South and East, the destruction of agricultural enterprises, logistical problems, and mass emigration have become a serious issue that not only threatens food shortages and price increases, but also poses a threat to the food security of the population. Therefore, investigation into the causes and consequences of this phenomenon is extremely relevant. The purpose of this study was to identify the factors that determine the dynamics of wholesale turnover of food products in Ukraine, with further formulation of proposals to improve the efficiency of wholesale enterprises through managerial decision-making. The study was based on the comprehensive use of such methods as empirical data collection and analysis, bibliographic analysis of scientific literature, economic and statistical methods, including regression analysis, as well as the method of logical generalisation to systematise the results and formulate conclusions. The study identified the key factors that influence the volume of wholesale food turnover and are critical for ensuring the country's food security. Economic analysis helped identify patterns and trends in the dynamics of turnover, while regression analysis helped quantify the impact of the identified factors and develop recommendations for managing this process. It was proposed to intensify the state regulation aimed at creating favourable conditions for the development of wholesale trade, combined with the modernisation of management processes at the level of wholesale

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enterprises. It was found that innovative approaches to cooperation with retail chains, such as in-depth analysis of their needs, optimisation of the assortment, building long-term relationships, and introduction of modern technologies, are valuable factors that influence the efficiency of management of wholesale enterprises. To ensure their sustainable development in the future, it is necessary to apply effective marketing strategies. The findings obtained in this study are of high practical significance for business entities engaged in wholesale trade in food products, as they allow making effective managerial decisions to increase the volume of wholesale turnover

**Keywords:** wholesale trade; products; marketing strategies; innovative approaches; competitiveness

## INTRODUCTION

The turnover of food products is not only an internal indicator of an enterprise's efficiency, but also a prominent social indicator that directly affects the standard of living of the population. A decline in this indicator could lead to a shortage of goods, rising prices, and, as a result, a threat to the country's food security. The war caused irreparable damage to the Ukrainian agricultural sector. The occupation, destruction of agricultural enterprises, logistical problems, and mass emigration of the population have led to a considerable reduction in food production and a decrease in wholesale food turnover. In the context of a full-scale war, there was an urgent need to develop original approaches to the organisation of trade and trade relations, which stimulated relevant research.

M. Rahman & D. Prus (2020) noted the significance of increasing wholesale turnover to stimulate the country's economic growth in a crisis. According to researchers, the fact that Ukrainian products are in greater demand during the crisis is helping to boost the economy. Since trade is a powerful lever of economic development and an essential tool for ensuring food security, many studies by Ukrainian and foreign researchers are devoted to public administration in this area, as well as food security management. S. Kvasha et al. (2024) predicted the threat of a decline in food security in Ukraine in the medium term, which highlights the need to take urgent measures to address this trend and ensure a stable food situation in the country, especially in the context of military aggression.

According to S. Sirenko (2023), the problems and imbalances in trade development have arisen as a result of inadequate state attention to this area. O. Skydan et al. (2020) believe that the current model of food security regulation in Ukraine

is fragmented, as it does not consider the interconnections between the various components of this problem, which leads to its inefficiency and inability to ensure the country's long-term food security. To ensure food security, it is necessary to integrate various government policies into a single system, such as the development of agriculture, the food industry, foreign food trade, and the internal market, as well as ensuring food quality and safety. V. Franchuk et al. (2022), based on the calculation of the Pearson correlation coefficient, identified the principal problems in ensuring food security in Ukraine, namely: the unsatisfactory level of research in agriculture; imperfect infrastructure in supply chains and the presence of political and social barriers to entry into the agricultural market. Insufficient food security and imperfect market access policies.

O. Kovalenko & A. Kyrychenko (2023) proposed to use digital technologies as a key tool to address the problem of global food security, which is exacerbated by changes in the logistics of food supply. O. Bokii (2023) believed that to overcome the adverse effects of Russian aggression on the food market, it is necessary to implement an effective state food policy aimed at eliminating the consequences, restoring production capacity and ensuring food security of the population, as statutory regulation should be focused on creating favourable conditions for doing business and protecting socially vulnerable groups of the population. A comprehensive approach to restoring the agricultural sector of the economy should be based on the implementation of a state programme that will cover all aspects of food production and consumption. V. Boiko et al. (2019), based on the positive experience of wholesale food markets in Poland, substantiated the feasibility of building them in

Ukraine. The primary benefits of such wholesale markets include improved food quality, price control, more efficient budgeting, increased competition in the consumer market, faster promotion of products to consumers, creation of new jobs, economic security of producers, and satisfaction of consumer demand for quality food. In their study of food security, Y. Mishenin *et al.* (2023) focused on public health. The researchers proposed that the organisational and economic mechanism for regulating sustainable food security should be developed with due regard for the harmonisation of the socio-ecological and economic needs and interests of business entities, society, and citizens involved in the production and consumption of food.

While conventional food security research has largely focused on agricultural production, food availability, and accessibility, and factors related to nutrition and health, B. Alkunain *et al.* (2024) takes a fresh look at this issue, emphasising the link between overall expenditure and food security. The researchers examined the impact of investment on food security in Saudi Arabia and concluded that consumption and government spending do not directly affect food availability in this country but have an indirect impact on it. Despite the numerous scientific publications related to trade, food security, and public administration, the issues of wholesale food turnover and effective management of the process require further scientific understanding. The purpose of this study was to identify factors influencing the volume of wholesale turnover of food products in Ukraine to develop recommendations for optimising management decisions at wholesale enterprises.

## MATERIALS AND METHODS

The following methods were employed to conduct the study: data collection and analysis (desk research), bibliographic method, economic analysis, regression analysis, and logical generalisation method. The desk research method involved the use of data from the State Statistics Service of Ukraine for 2010-2022, which concerned the volume of sales and stocks of goods (products) at wholesale trade enterprises (Official website of the State Statistics of Ukraine, 2023), the volume of products (goods,

services) sold by business entities by type of economic activity, wholesale and retail turnover of enterprises – wholesale and retail trade (Official website of the State Statistics of Ukraine, 2024), the number of operating business entities by type of economic activity (Official website of the State Statistics of Ukraine, 2023a). The number of employees (Official website of the State Statistics of Ukraine, 2023b), non-current assets of enterprises with a breakdown into large, medium, small, and micro enterprises (Non-current assets, n.d.). The study was conducted using the Instruction of the State Statistics Committee of Ukraine on filling in the state statistical observation form No. 1-opt “Report on sales and stocks of goods (products) in wholesale trade” (Report of the State Statistics Committee of Ukraine..., 2013) and the Order “Classification of economic activities: DK 009:2010” of the State Committee of Ukraine on Technical Regulation and Consumer Policy (Order of the State Committee of Ukraine on Technical Regulation..., 2010). The data obtained during the desk research served as the basis for economic and regression analysis, which helped to formulate scientific hypotheses and conclusions.

The bibliographic method was used to collect and analyse data, as it involves the systematic study of various types of documents (scientific articles, regulations, statistical collections, Internet resources) to obtain information about a particular phenomenon, process, or object. This method was employed to draft the introduction and discussion section of this study, to identify promising areas for further research, to demonstrate the originality of the interpretation of the findings in the context of existing scientific knowledge. The method of economic analysis was employed to identify patterns and trends in the development of wholesale food turnover in Ukraine. It helped to analyse the competitive environment in the wholesale trade, the availability of employees and non-current assets of wholesale enterprises. The following key indicators were used to assess the wholesale turnover: total wholesale turnover; chain coefficient of goods distribution. The percentage of wholesale and warehouse turnover to retail turnover, the level of centralised delivery of goods by suppliers and at their expense.

The indicator of wholesale trade turnover in the context of the country and its regions was compiled by the main groups and types of goods defined by the State Statistics Service of Ukraine (Official website of the State Statistics of Ukraine, n.d.). Using the regression analysis method, the study determined the impact on the wholesale turnover of food products at the macro level of such factors as the number of

operating food businesses, retail turnover, the value of non-current assets of operating businesses, and the number of employees. The regression analysis was performed using built-in Microsoft Excel functions. The significance of the linear regression models was assessed using the Fisher's test. The level of correlation between the factors under study was determined using the Chaddock scale, which is presented below (Table 1).

**Table 1.** Chaddock scale

Closeness value of the connection indicator in absolute terms	0.1-0.3	0.3-0.5	0.5-0.7	0.7-0.9	0.9-0.99
Communication characteristics	Weak	Moderate	Noticeable	High	Very high

**Source:** developed by the authors of this study based on the Chaddock Scale (n.d.)

To estimate the average percentage change in the resultant attribute (Y) with a 1% change in the factor attribute (X), the elasticity coefficient calculated using formula 1 was used:

$$E = f'(x) \cdot \frac{x}{y}, \quad (1)$$

where  $E$  is the elasticity coefficient;  $X$  is the factor attribute;  $Y$  is the outcome attribute.

Using the coefficient of determination ( $R^2$ ), the study assessed the extent to which the developed regression models were adequate to describe the real data. The closer  $R^2$  is to 1, the more confident the model is in making predictions. The method of logical generalisation was employed to formulate conclusions and proposals, which helped to explain the reasons for the decline in the wholesale turnover of food prod-

ucts in Ukraine, identify the key factors of its increase, and formulate management decisions on optimising the wholesale turnover.

## RESULTS AND DISCUSSION

The elevated level of wholesale turnover demonstrates the efficient operation of the company, its ability to meet customer needs and compete in the market. Wholesale trade is a valuable element of commodity circulation, as it ensures the efficient distribution of goods between producers and retailers. The results of the analysis of the dynamics of wholesale trade turnover in Ukraine showed that the turnover of wholesale trade enterprises in 2010-2021 increased from UAH 993.7 billion to UAH 3,153.2 billion, i.e., more than 3 times, due to inflationary processes in the economy (Table 2).

**Table 2.** Dynamics of wholesale turnover in Ukraine

Year	Wholesale turnover, UAH billion			Share of food products in the wholesale turnover, %	Share of sales of food products produced in Ukraine, %
	Wholesale trade enterprises – legal entities	food products	non-food products		
2010	993.7	193.8	799.8	19.5	75.1
2011	1,107.3	194.5	912.8	17.6	75.5
2012	1,093.3	215.2	878.1	19.7	73.7
2013	1,074.8	199.7	875.1	18.6	71.7
2014	988.0	194.7	793.3	19.7	71.4
2015	1,244.2	224.3	1,020.0	18.0	75.2
2016	1,556.0	252.8	1,303.2	16.2	76.4
2017	1,908.7	314.0	1,594.7	16.5	76.8
2018	2,215.4	356.1	1,859.3	16.1	77.2
2019	2,322.2	392.1	1,930.1	16.9	75.1

Table 2, Continued

Year	Wholesale turnover, UAH billion			Share of food products in the wholesale turnover, %	Share of sales of food products produced in Ukraine, %
	Wholesale trade enterprises – legal entities	food products	non-food product		
2020	2,462.6	437.6	2,025.0	17.8	72.6
2021	3,153.2	490.6	2,662.6	15.6	71.6
2022	2,768.3	*n/a	n/a	n/a	n/a

**Note:** \*n/a – no information available

**Source:** developed by the authors of this study based on data from the Official website of the State Statistics of Ukraine (2024), the Official website of the State Statistics of Ukraine (2021b), and the Official website of the State Statistics of Ukraine (2021a)

In 2022, due to negative factors caused by martial law, this indicator decreased by 13.9% compared to the previous year. In 2021, the share of food products in wholesale turnover also decreased by 2.2%, which was the result of a change in the ratio of growth rates of food and non-food product groups. Domestic products prevailed in the structure of food products sold in the wholesale trade during the study period, but in 2021 there was a 1% decrease in their share compared to the previous year. Due to the

lack of information on the wholesale turnover of food and non-food products in 2022, no assessment of this market segment was made, but considering the major destruction and suspension of many businesses as a result of hostilities, an increase in the share of imported goods in the Ukrainian market can be predicted. An analysis of the dynamics of the physical volume of turnover of wholesale trade enterprises in 2010-2022 suggests considerable fluctuations during the study period, as presented in Table 3.

**Table 3.** Indices of the physical volume of wholesale turnover of wholesale trade enterprises in Ukraine (in comparable prices) by the previous year, %

Year	Physical volume index		
	wholesale turnover	wholesale turnover of food products	wholesale turnover of non-food products
2010	100.0	100.0	100.0
2011	100.7	99.4	100.8
2012	96.9	110.6	96.7
2013	97.4	92.8	99.6
2014	82.1	97.5	92.4
2015	87.8	115.2	120.3
2016	104.7	112.7	136.5
2017	102.8	124.2	122.4
2018	103.6	113.4	116.6
2019	99.5	110.1	103.8
2020	104.2	111.6	104.9
2021	94.4	112.1	131.5
2022	64.1	n/a	n/a

**Source:** developed by the authors of this study based on data from the Official website of the State Statistics Service of Ukraine (2024)

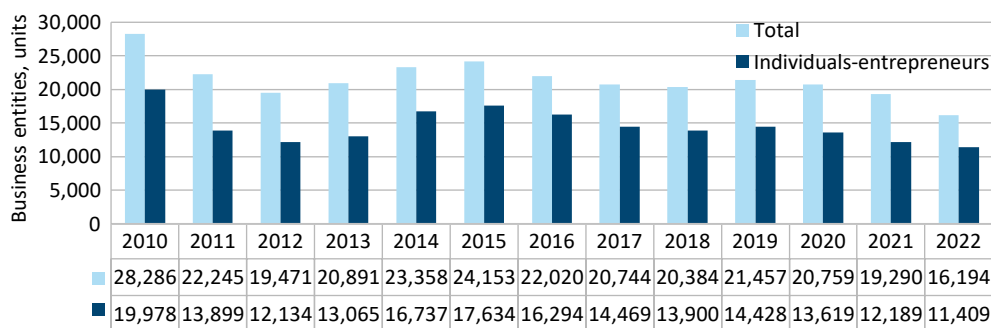
The lowest growth rate for this indicator was recorded in 2017 (+2.8%), while the highest – in 2016 (+4.7%). In 2022, there was a considerable decline in the index of physical volume of wholesale trade turnover of wholesale trade

enterprises (-30.3%), which was the result of the impact of the war on the Ukrainian economy, including trade. Having analysed the dynamics of the physical volume of wholesale turnover of food and non-food product groups, the

largest growth of this indicator was found in 2017 (+24.2%) in the food group and in 2016 (+36.5%) in the non-food group. The minimum growth in the physical volume of wholesale turnover of these product groups was observed in 2019, with the food group growing by +10.1% and the non-food group – by +3.8%. Differences in the dynamics of the indices of the physical volume of wholesale turnover of food and non-food products can be caused by a series of factors, both economic and social. The indices may be affected by different elasticities of demand, its seasonality, political events, epidemics or pandemics, changes in climate conditions, structural changes in the economy, inflation and deflation, and government regulation.

Factors influencing the wholesale turnover of food products are divided into external and internal. External environmental factors include the state of the economy, competition, legislation, seasonality, and socio-cultural factors. Internal factors include the range and quality of goods, pricing policy, delivery terms, marketing and advertising, customer service, financial stability, provision of non-current assets, management efficiency, etc. Competition

is a powerful driver of food market development. It forces businesses to constantly improve and adapt to new conditions. To operate successfully in a competitive environment, it is necessary to develop effective strategies, invest in development and be ready for change (Chikov, 2019). The competitive environment in food wholesale is complex and dynamic. The modern Ukrainian wholesale market is represented by a wide range of trade intermediaries, which differ in scale, organisational structure, functional responsibilities, and specialisation. According to the State Statistics Service of Ukraine (Official website of the State Statistics of Ukraine, 2023a), 16,194 business entities were involved in the wholesale trade in food products in 2022, of which 70.5% were individual entrepreneurs (IEs). According to the study, the number of companies engaged in the wholesale trade in food products almost halved between 2010 and 2022. The full-scale war and occupation of the territories were the main reason for the 19.1% decline in the number of business entities in this sector in 2022, but the number of individual entrepreneurs decreased by only 6.8% (Fig. 1).



**Figure 1.** Number of operating business entities in the wholesale trade of food products, units

Source: developed by the authors of this study based on data from the Official website of the State Statistics Service of Ukraine (2023a)

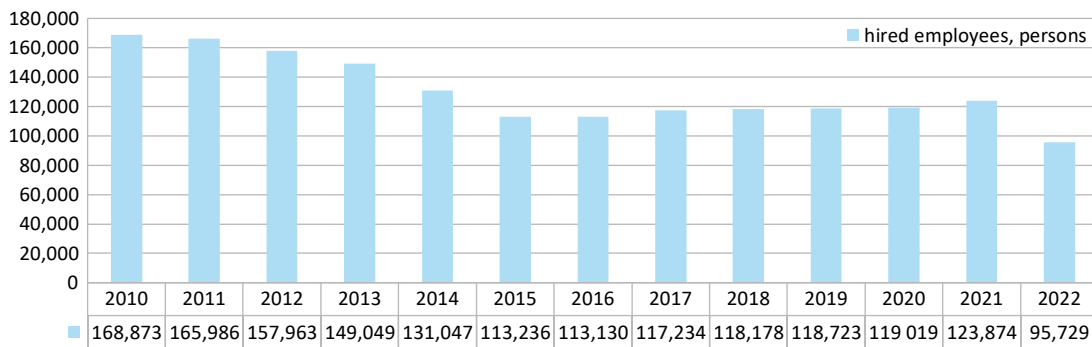
As presented in Figure 1, legal entities have certain advantages in terms of scale and access to resources, but individual entrepreneurs are more resilient in a crisis due to their flexibility, adaptability, and lower financial liabilities. Sole proprietorships, unlike large companies, have a smaller bureaucratic structure, which allows them to respond quickly to market changes,

promptly change the range of goods, prices, sales channels, and other business parameters. Remote technologies allowed them to continue their operations despite martial law, and by cutting staff and rental costs, they managed to adapt to the new economic reality. However, the predominance of individual entrepreneurs in the wholesale food trade negatively affects the

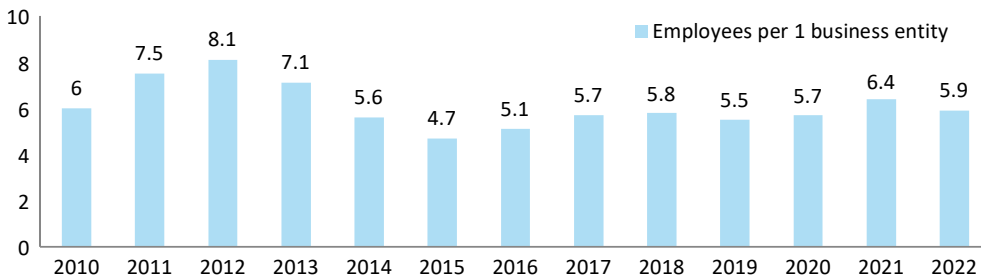
quality of customer service and the overall functioning of the market. To ensure a stable supply of goods and meet the needs of producers and retailers, it is necessary to consolidate wholesale structures and create a more civilised consumer market.

The data on the number of employees at wholesale enterprises indicate the need for government intervention in regulating this sector, as staffing is a key factor contributing to its development and the competitiveness of

enterprises in the market. The analysis of the dynamics of the number of employees in the food wholesale trade in Ukraine over the period from 2010 to 2022 showed a steady downward trend in their number. During this period, the number of employees in the sector decreased by 56.7%. The largest job losses were observed in 2022, amounting to 29.4% compared to the previous year (Fig. 2). A prominent indicator that characterises the activities of food wholesale enterprises is the number of employees per enterprise (Fig. 3).



**Figure 2.** Dynamics of the number of employees in the food wholesale trade in Ukraine, persons  
**Source:** developed by the authors of this study based on data from the Official website of the State Statistics Service of Ukraine (2023a)



**Figure 3.** Dynamics of the number of employees per 1 business entity in the wholesale food trade in Ukraine, persons

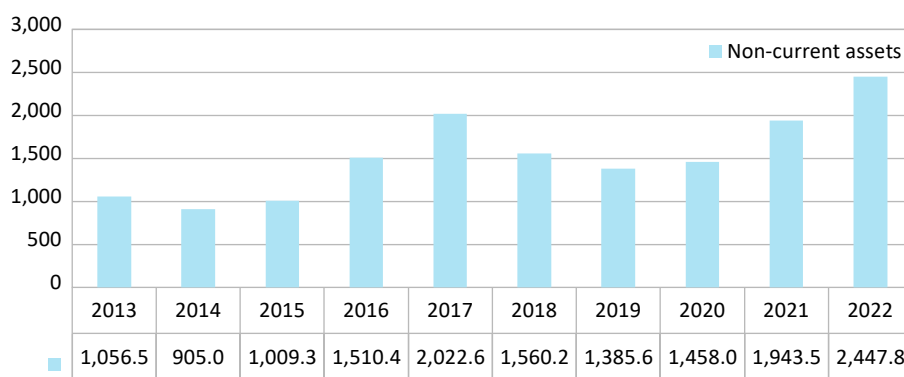
**Source:** developed by the authors of this study based on data from the Official website of the State Statistics Service of Ukraine (2023a)

A direct correlation was found between the number of employees and the size of the enterprise. The analysis of the data shows a negative trend in the number of employees in the food wholesale trade per wholesale trade entity since 2014, which is explained by the predominance of individual entrepreneurs in the structure of op-

erating business entities, as well as the outbreak of armed aggression, the presence of annexed territories and the slowdown in the development of the industry in this regard. Specifically, in 2014, the analysed indicator decreased to 5.6 persons per business entity from 7.1 persons in 2013, i.e., by 26.8%.

The competitiveness of business entities in the wholesale food trade and their ability to meet consumer needs is also determined by the condition, efficiency of use, and compliance with current requirements of existing non-current assets. According to the State Statistics Service of Ukraine, non-current assets of food wholesalers include investment property, long-term biological assets, capital investments in progress, and long-term financial investments. The majority of non-current assets of wholesale trade enterprises are fixed assets (Non-current assets..., n.d.).

In 2022, the share of fixed assets in the non-current assets of food wholesalers was 77.4%, while in 2013 it was 62.9%. Depreciation of fixed assets as of the end of 2022 was lower than in other sectors of the economy and amounted to 43.4%. As of the end of 2022, the value of non-current assets of food wholesale companies increased by 1.8 times compared to 2013 and amounted to UAH 2,447.8 thousand per business entity, which can be explained by a considerable reduction in the number of legal entities in this sector and an uneven distribution of investments (Fig. 4).



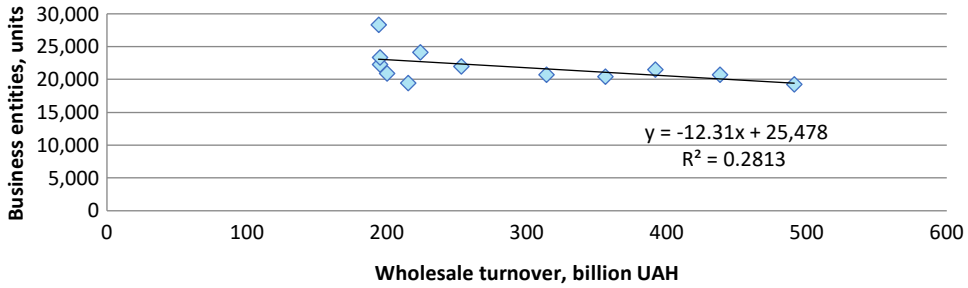
**Figure 4.** Dynamics of non-current assets per 1 business entity in the wholesale food trade in Ukraine, UAH thsd

**Source:** developed by the authors of this study based on data from non-current assets of enterprises by type of economic activity with distribution into large, medium, small, and micro enterprises in 2013-2023 (n.d.)

As presented in Figure 4, the competitive environment in the wholesale trade sector is distorted by regional disparities, as some regions have a much more developed wholesale trade network than others. This situation can lead to a series of negative consequences for the economy as a whole and for individual regions specifically. For instance, according to the State Statistics Service of Ukraine, the city of Kyiv, as well as Kyiv and Odesa regions accounted for the largest share of the wholesale food turnover in 2017-2021 (State Statistics Service of Ukraine, 2023). Regional disparities were caused by geographical, economic, and social factors. Specifically, Odesa Oblast is a region with access to the sea, while the city of Kyiv and Kyiv Oblast have conventionally been the economic centres

of Ukraine, which considerably affects the development of wholesale trade in this region. It is important to understand that addressing regional disparities is a long-term process that requires a comprehensive approach and coordination of efforts between various government agencies and businesses. To develop proposals for increasing the wholesale turnover of food products in Ukraine, the factors that influence the volume of wholesale turnover of food products were identified based on the regression analysis.

Having built a regression dependence of the wholesale turnover of food products on the number of operating business entities in this area, it was found that it is inverse, i.e., an increase in the number of business entities does not lead to an increase in wholesale turnover (Fig. 5).



**Figure 5.** Regression dependence of the wholesale turnover of food products on the number of operating business entities in the wholesale trade of food products in Ukraine

Source: developed by the authors of this study

The linear regression equation is as follows:

$$y = -12.31x + 25,478. \quad (2)$$

The relationship is inverse, meaning that an increase in wholesale turnover by UAH 1 billion leads to a reduction in the number of business entities by 12.31 units.

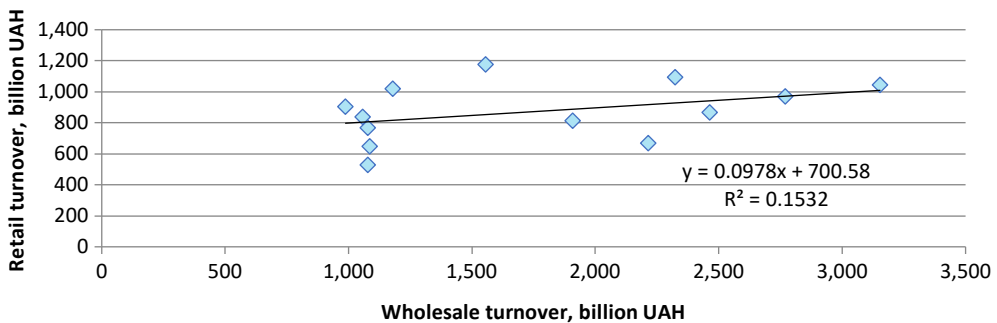
According to Fisher's criterion, the equation is statistically significant because the tabulated F value of 4.9646 is higher than the factual F value of 3.9149. The level of the relationship between the studied attributes is noticeable (according to the Chaddock scale), since the independent variable  $R = 0.5304$ . It is indicated that, according to the coefficient of determination ( $R^2 = 0.2813$ ), the variation of Y is 28.13% due

to the variation of X. Additionally, the elasticity coefficient (3) shows how much the average change in the resultant attribute (Y) will change if the factor attribute (X) changes by 1%:

$$E = -12.31 \cdot \frac{288.9167}{21,921.5} = 0.1622.$$

Thus, a 1% increase in the wholesale turnover of food products leads to a 16.22% decrease in the number of business entities relative to the average values in the sample.

Having built a regression dependence of wholesale turnover on retail turnover in Ukraine, it was found that an increase in retail turnover by UAH 1 billion leads to an increase in wholesale turnover by UAH 97.8 million (Fig. 6).



**Figure 6.** Regression dependence of wholesale turnover on retail turnover in Ukraine

Source: developed by the authors of this study based on data from the Official website of the State Statistics Service of Ukraine (2023)

The following linear regression equation was obtained:

$$y = 0.0978x + 700.58.$$

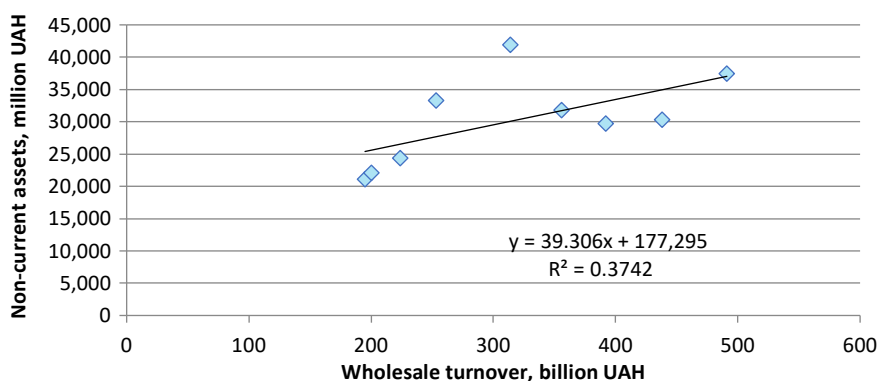
According to Fisher's criterion, the equation is statistically significant, as the tabulated F value of 4.8443 is higher than the factual F value of 1.9963. The level of density of the relationship between the studied attributes is moderate (according to the Chaddock scale) since the independent variable  $R = 0.3919$ . The coefficient of determination ( $R^2 = 0.1532$ ) suggests that the variation in Y is 15.3% due to the variation in X. Additionally, the elasticity coefficient (5) showed how much the average change in the resultant

attribute (Y) would be if the factor attribute (X) changed by 1%.

$$E = 0.0978 \cdot \frac{1,757,7692}{872,3846} = 0.1970.$$

Thus, a 1% increase in wholesale turnover leads to a 19.7% increase in retail turnover relative to the sample average.

Having built a regression dependence of the wholesale turnover of food products on the value of non-current assets of operating business entities in the wholesale trade of food products, it was found that an increase in the value of non-current assets by UAH 1 million would lead to an increase in wholesale turnover by UAH 39.3 billion (Fig. 7).



**Figure 7.** Regression dependence (linear trend line) of the wholesale turnover of food products on the value of non-current assets of operating business entities in the wholesale trade of food products in Ukraine

**Source:** calculated by the authors of this study

The equation is statistically significant because the tabulated F value of 5.5914 is higher than the factual F value of 4.177. The level of the relationship between the studied attributes is moderate (according to the Chaddock scale) since the independent variable  $R = 0.3737$ . Additionally, the elasticity coefficient (6), determined according to the linear trend line, shows how much the average change in the resultant attribute (Y) will change if the factor attribute (X) changes by 1%.

$$E = 39.306 \cdot \frac{318.2}{30,232.89} = 0.4137.$$

Thus, a 1% increase in wholesale trade turnover would require a 41.3% increase in the value of

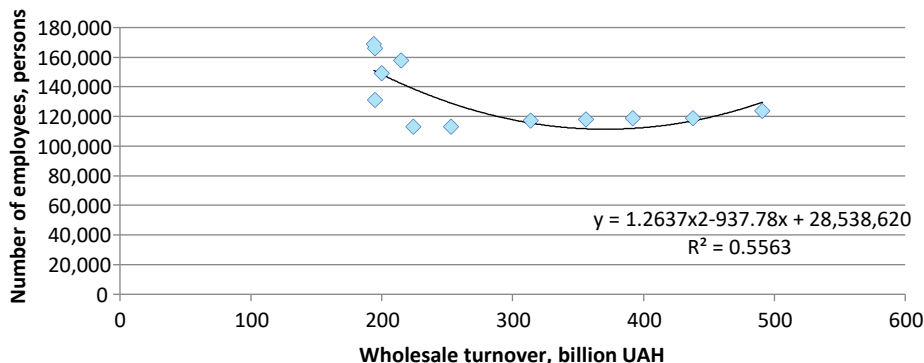
non-current assets of operating food wholesale businesses relative to the average values in the sample. To determine the regression dependence of wholesale food turnover on the number of employees in the wholesale food trade in Ukraine, a polynomial trend line was used, the model of which has the highest level of reliability compared to the analysed trend lines (Fig. 8).

It is calculated that the variation of Y is 55.6% due to the variation of X according to the value of the coefficient of determination ( $R^2 = 0.5563$ ). The level of correlation between the studied attributes is high (according to the Chaddock scale) since the independent variable  $R = 0.7484$ . Additionally, the elasticity coefficient determined

according to the linear trend line (7) shows how much the average change in the resultant attribute (Y) will change if the factor attribute (X) changes by 1%:

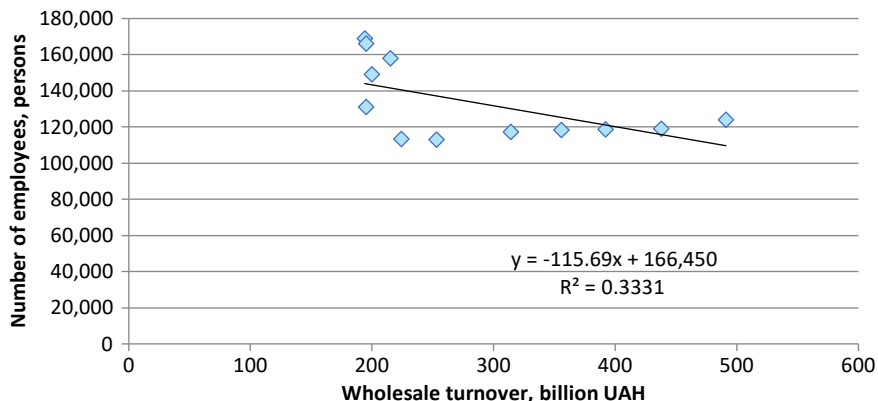
$$E = 115.69 \frac{289}{133.026} = 0.2513.$$

A linear trend line was used for this purpose (Fig. 9).



**Figure 8.** Regression dependence (polynomial trend line) of wholesale food turnover on the number of employees in the wholesale food trade in Ukraine

Source: created by the authors of this study



**Figure 9.** Regression dependence (linear trend line) of wholesale food turnover on the number of employees in the wholesale food trade in Ukraine

Source: developed by the authors of this study

Thus, according to Figure 9, a 1% increase in wholesale turnover would lead to a 25.1% reduction in the number of employees relative to the sample average. The regression analysis revealed that the following factors have the greatest impact on the volume of wholesale trade turnover: retail trade turnover of food products, as a 1% increase in wholesale trade turnover leads to its growth by 19.7%; value of non-current assets, as a 1% increase in wholesale trade

turnover requires a 41.3% increase in their value, which requires considerable investments from business entities.

A 1% increase in wholesale trade turnover causes the following phenomena: a 25.1% reduction in the number of employees; a 16.22% reduction in the number of business entities in the food wholesale sector. The key factors explaining the trend towards a reduction in the number of employees as a result of an increase

in wholesale food turnover include automation and mechanisation of trade processes, optimisation of logistics and the growing popularity of online trading, as well as market concentration and increased workload on existing staff. Since the fastest way to reduce labour costs is to reduce staff or increase the workload per employee, this method is often used by businesses in times of economic crisis. The study found that the decrease in the number of business entities in the field of wholesale trade in food products with an increase in turnover is due to the influence of such factors as market concentration and the emergence of large players; technological changes and automation; changes in consumer preferences; economic factors leading to bankruptcy of small business entities.

It was found that strengthening the state influence on the wholesale food market and implementing effective management decisions at enterprises in this sector are key factors in the growth of wholesale turnover. Considering the significance of wholesale trade to the economy, the state should implement regulatory measures that include stimulating the development of logistics and infrastructure through comprehensive renovation of warehouses to improve storage quality and extend product shelf life; restoring and expanding the road network to ensure fast and safe delivery of goods to consumers; developing rail and river transport to improve the efficiency of long-distance cargo transportation; introducing state support for Ukrainian producers by reducing tax burden, simplifying customs procedures, expanding bank lending, implementing state programmes to modernise food production and new technologies to improve food quality; maintaining protectionist measures against imports to protect Ukrainian producers from unfair competition; stimulating the development of e-commerce; improving the quality of food production through the introduction of certification according to international standards to increase confidence in them.

Systems such as food safety management (ISO 22000:2018, 2018) and other food safety systems, such as BRC – British Retail Consortium Global Standards (Food safety, n.d.), can confirm compliance with international standards. Among the factors that can affect the effectiveness

of management decisions at wholesale enterprises, it is worth noting cooperation with retail chains, namely, research and deep understanding of the needs of retail chains; optimising the range and terms of supply; building long-term relationships; implementing innovative solutions for inventory management, order processing, and data analysis; and systematically analysing the effectiveness of cooperation.

To achieve the desired results, the following marketing strategies should be implemented: creating strong brands to win the market and build customer loyalty; intensification of advertising campaigns in traditional and digital media; regular monitoring of changes in the structure of the population, consumer preferences, and migration flows; expansion of the range of products to meet the needs of different groups of people; building an efficient logistics system (situation assessment, planning, cooperation with other companies and government agencies to create a joint logistics network of centres and warehouses), and allocation of responsibilities and resources; the use of modern technologies (GPS navigation systems and drones to deliver small loads to hard-to-reach places; software for route optimisation and inventory management), as well as the use of security measures for employees and vehicles. It was emphasised that an equally significant factor is the creation of cooperatives and associations, which will allow small and medium-sized enterprises to pool resources to reduce costs and increase their competitiveness.

The study identified the key factors affecting the volume of wholesale food turnover, which is critical for ensuring the country's food security. Using economic analysis, the study revealed regularities and trends in the development of wholesale food turnover, while the method of regression analysis highlighted the factors that influence this indicator and helped develop recommendations for its management. I. Lobachova (2020) also emphasised the significance of managing the turnover of wholesale trade enterprises based on economic analysis. Investigating economic analysis as a prerequisite for developing a strategy for managing the turnover of an enterprise, the researcher noted that the management system at a trade enterprise

should be built considering the purpose, tasks, and principles of management.

The findings of the study confirm the conclusions drawn by other researchers regarding the significance of wholesale trade for the quality satisfaction of consumer needs. According to M. Bagorka *et al.* (2021), for the effective functioning of modern Ukrainian wholesale trade enterprises and the economy as a whole, it is necessary to apply a fundamentally new approach to solving economic problems based on modern principles, concepts, and marketing tools, so that wholesale trade becomes a lever to stimulate the development of domestic production, increase its efficiency, and better meet consumer needs.

It is indicated that the value of non-current assets available to business entities considerably affects the volume of wholesale turnover of food products. O. Bassova & K. Kogan (2020) also substantiated the need to form elements of market infrastructure for the development of wholesale trade and noted a critical shortage of warehouse and retail space for business entities in this area. It was found that an increase in wholesale turnover leads to a reduction in the number of employees in the wholesale food trade and the number of business entities in this area. K. Pugachevska *et al.* (2021) considered structural changes in internal trade to be an essential vector for improving the efficiency of the national economy. To improve the state regulation of internal trade, P. Kutsyk *et al.* (2024) propose to introduce a state policy of modernisation of the internal trade system, factoring in a set of basic elements such as mechanisms, instruments, objects of regulation, tasks, and functions. M. Deich *et al.* (2023) propose to improve the efficiency of wholesale trade in Ukraine by improving state legislation, while the objects of such regulation should be the processes taking place in the consumer market.

T. Fedotova *et al.* (2024) identify the main factors contributing to the development of food trade as economic growth of the region; volume of demand; interaction of supply and demand; national and regional governments; and indirect factors. The factors that ensure the turnover of food products include pricing policy; market conditions; market infrastructure; supply and

demand for food products, institutional support, budgetary constraints of consumers and factors of cyclical and economic growth.

The proposals of this study to improve the efficiency of management at the level of individual wholesale enterprises are in line with the opinions of other researchers. T. Perederii (2024) proposed to introduce crisis management to increase the sustainability and competitiveness of trade enterprises in a crisis provoked by war. O. Prodius *et al.* (2024), in studying the strategic vectors of improving the efficiency of a trading enterprise under martial law, described the development of a strategy for improving the efficiency of a wholesale trade company at enterprises to ensure their sustainable development. M. Ilchuk & L. Pankratova (2020) noted that the development of wholesale trade is influenced by shadow schemes that distort its real volumes, especially in the agricultural sector, where trade in grain and oilseeds without proper registration is widespread.

It was decided that to comprehensively address the above problems, it is necessary to introduce transparent management mechanisms, which include detailed accounting of agricultural land and effective taxation, and the introduction of yield monitoring systems. Elimination of the practice of falsifying agricultural production data, switch to electronic trading platforms, and introduction of transfer pricing for holding companies. Thus, it was confirmed that the findings of the present study complement the existing scientific knowledge base on food wholesale trade and provide valuable information for improving the efficiency of management in this area.

## CONCLUSIONS

The analysis of the dynamics of wholesale trade turnover in Ukraine for 2010-2022 showed a steady upward trend. Inflationary processes substantially affect this indicator, while the war led to a considerable decline in trade turnover and changes in its structure. There was a slight decline in the share of Ukrainian food products in total wholesale sales. The dynamics of the physical volume of wholesale turnover in Ukraine in 2010-2022 was characterised by pronounced fluctuations.

According to the physical volume indices, the largest growth was observed in 2016, while the largest decline was observed in 2022. The current Ukrainian food wholesale market is characterised by the prevalence of individual entrepreneurs, which allowed it to maintain a certain resilience during the war. However, to further develop and ensure the stability of the supply of goods, it is necessary to move towards market consolidation and the creation of larger wholesale structures. An analysis of the dynamics of the number of employees in the food wholesale trade over 2010-2022 showed a rapid reduction in jobs, especially in 2022. This suggests the need for government support for the industry, as staff shortages can adversely affect the efficiency of wholesale companies and the stability of supply to the market. The predominance of individual entrepreneurs in the food wholesale market is one of the reasons for the reduction in the number of employees per enterprise.

The fixed assets of food wholesalers are characterised by lower depreciation compared to other sectors of the economy. However, an

increase in the value of non-current assets per business entity indicates an uneven distribution of investments. Geographical location, economic development, and historical factors contribute to regional disparities in food wholesale trade. The concentration of wholesale turnover in certain regions, such as the city of Kyiv, as well as Kyiv and Odesa regions, is a consequence of these reasons and requires a systemic solution. To increase the volume of food wholesale trade in Ukraine, it is necessary to intensify state regulation of this industry and introduce modern management methods at wholesale trade enterprises. Prospects for further research are to identify other factors influencing the wholesale food turnover in Ukraine, such as the volume of production in the country and the world, population migration, etc.

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## CONFLICT OF INTEREST

None.

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## **Оптовий товарообіг продовольчих товарів в Україні: оцінка та прийняття управлінських рішень**

**Анотація.** Зниження оптового товарообігу продовольства в Україні через окупацію родючих земель на Півдні та Сході, руйнування агропідприємств, логістичні проблеми, масову еміграцію населення стало серйозною проблемою, яка не лише загрожує дефіцитом продуктів та зростанням цін, але й становить загрозу харчовій безпеці населення. Тому дослідження причин та наслідків цього явища є надзвичайно актуальними. Метою наукової роботи було виявлення факторів, що обумовлюють динаміку оптового товарообігу продовольчих товарів в Україні, з подальшим формулюванням пропозицій щодо підвищення ефективності

діяльності оптових підприємств на основі прийняття управлінських рішень. Дослідження базувалося на комплексному використанні таких методів, як збір та аналіз емпіричних даних, бібліографічний аналіз наукової літератури, економіко-статистичні методи, включаючи регресійний аналіз, а також метод логічного узагальнення для систематизації отриманих результатів та формулювання висновків. В результаті дослідження виявлено основні чинники, що впливають на обсяг оптового товарообігу продовольчих товарів, та які є критичними для забезпечення продовольчої безпеки країни. Економічний аналіз дозволив ідентифікувати закономірності та тенденції в динаміці товарообігу, а регресійний – кількісно оцінити вплив виявлених факторів та розробити рекомендації щодо управління цим процесом. Запропоновано активізувати державне регулювання, спрямоване на створення сприятливих умов для розвитку оптової торгівлі, в поєднанні з модернізацією управлінських процесів на рівні оптових підприємств. Виявлено, що інноваційні підходи до співпраці з роздрібними мережами, такі як глибокий аналіз їхніх потреб, оптимізація асортименту, побудова довгострокових відносин та впровадження сучасних технологій, є важливими чинниками, що впливають на ефективність управління оптовими підприємствами. Для забезпечення їх стабільного розвитку в майбутньому необхідно застосовувати ефективні маркетингові стратегії. Отримані в ході дослідження результати мають високу практичну значимість для суб'єктів господарювання, що здійснюють оптову торгівлю продовольчими товарами, оскільки вони дозволяють прийняти ефективні управлінські рішення щодо збільшення обсягів оптового товарообігу

**Ключові слова:** гуртова торгівля; продукти; маркетингові стратегії; інноваційні підходи; конкурентоспроможність