

UDC 338.43  
JEL Classification G01, D22, O13

*Shevchuk O. A., Dadachko V. S.*

## IMPACT OF CRISIS FACTORS ON THE PROFITABILITY OF DAIRY INDUSTRY IN UKRAINE

National Technical University of Ukraine “Igor Sikorsky Kyiv Polytechnic Institute”, Kyiv, Ukraine

The special contribution of this research lies in the thorough examination of the Ukrainian dairy industry’s response to crisis factors, with a particular emphasis on unprecedented challenges brought about by the Russian invasion in 2022, offering a comprehensive analysis of previously unexplored long-term implications for the sector’s profitability. The authors of the study highlight that the Ukrainian dairy industry demonstrated exceptional resilience and growth until the beginning of the war in February 2022 with a help of proactive state support and innovative agricultural methods. However, the Russian invasion posed unprecedented challenges that disrupted traditional trade channels, economic connections, and significantly limited the dairy sector’s access to critical resources. In addition to security risks, the conflict in Ukraine resulted in supply chain disruptions, electricity shortages, rising inflation, trade restrictions, and hindered the country’s capacity to attract foreign investments, all of which significantly worsened the economic situation in the country. The authors identify crisis factors contributing to the decline in dairy farm profitability, including reduced milk production, limited export opportunities, increased production costs, a shrinking domestic consumer base, higher imports of dairy products, losses in occupied territories, and insufficient financial support during the conflict. It is noted that strategies such as export diversification, stimulating domestic demand through reduced VAT and enhanced resilience, are of paramount importance in overcoming these crisis-inducing factors. The authors emphasize that collaborative efforts among stakeholders, alignment with international initiatives and sustainable development goals, as well as proactive implementation of comprehensive strategies, are critical steps toward addressing the current crisis and shaping a sustainable future for the Ukrainian dairy industry.

**Keywords:** dairy industry, crisis factors, profitability, economic challenges, domestic demand, stakeholder collaboration, comprehensive strategies, resilience.

**DOI:** 10.32434/2415-3974-2023-18-2-167-175

### *Introduction*

Ukraine, endowed with fertile land and a developed dairy production system, has long maintained the potential to play a key role in global food security while contributing to its own economic growth. The dairy industry, an integral part of the agricultural sector, significantly influences the achievement of Sustainable Development Goals (SDGs) set by the United Nations, particularly Goals 2 (Zero Hunger) and 8 (Decent Work and Economic Growth) [1].

These goals emphasize promoting sustainable, inclusive, and sustainable economic growth, full and productive employment, and decent work for all. In this context, the profitability of dairy enterprises is a critical determinant of economic growth and job creation in Ukraine.

However, due to the large-scale Russian military aggression against Ukraine, the country has found itself on a challenging and perilous path toward economic stability and independence. The annexation

© Shevchuk O. A., Dadachko V. S., 2023



This article is licensed under Creative Commons Attribution 4.0 International License (CC-BY)

**Impact of crisis factors on the profitability of dairy industry in Ukraine**

of Crimea, the conflict in the Eastern Ukraine, and the hostilities during the Russian invasion disrupted traditional trade routes and severed economic ties, affecting the export potential of the dairy sector and access to critical resources. Besides immediate security concerns, the conflict disrupted supply chains, escalated inflation, imposed trade restrictions, and limited the country's ability to attract foreign investments, placing significant pressure on the Ukrainian economy. These challenges have impacted all sectors of the economy, including the dairy industry.

#### ***Formulation of the problem***

Based on the previously described background, the study of the complex interplay between crisis factors and the profitability of dairy enterprises in Ukraine requires a comprehensive analysis, encompassing economic, ecological, and geopolitical aspects. Such an analysis not only identifies vulnerabilities but also facilitates the development of adaptive strategies that enhance resilience to crisis events.

#### ***Analysis of recent research and publications***

The devastating impact of the Russian-Ukrainian war is so extensive that many researchers, including O. Shevchuk, O. Ilyash, N. Semenchuk, N. Roshchina, S. Hrynkevych, S. Kozlovsky, and G. Mazhara, find it challenging to enumerate all the consequences for Ukraine and the world [2]. A study of the impact of the Russian-Ukrainian war on global food security conducted by Ben Hassen T. and El Bilali H. has shown that the war has immediate and far-reaching consequences, posing a significant threat to global food security [3]. As noted by Glauber J. W. and Laborde D. D., the Russian-Ukrainian war has shown a profound impact on the agricultural sector, resulting in significant implications for global food security. The conflict's impact on food systems includes disruptions in grain and vegetable oil trade, interruptions in fertilizer exports, and rising energy prices [4]. This has exacerbated food shortages among millions of people and hindered the delivery of humanitarian aid to those experiencing severe food shortages [5].

According to an analysis by the Kyiv School of Economics (KSE) as of March 24 of the current year, the losses inflicted on Ukrainian infrastructure during the war have exceeded \$63 billion, which is equivalent to more than UAH 1.8 trillion. Based on the latest estimates by the Ministry of Economy and KSE, Ukraine's total economic losses due to the war, including both direct losses and indirect ones (GDP contraction, decrease in investment rate, workforce outflow, additional defense and social support expenses, etc.), exceed \$600 billion [6].

According to the conclusions of the FAO, active

military operations, high prices, and the lack of access to essential agricultural resources, along with increased production costs and economic disruptions, significantly affect farmers' production and incomes, as well as the availability of food for consumers. In combination with consumers' income loss, these disruptions in the agri-food value chain have a substantial impact on domestic food security [7].

According to research conducted by the Kyivstar Business Hub team, it is very difficult for businesses in Ukraine to reduce expenses during the war, as they tend to increase instead. In one-third of the surveyed companies, costs increased by 20-50% during the research process. Sales have also seen a decline, and taxes and salaries in 2022 were paid from company financial reserves. A minority managed to reduce expenses, roughly 7-10%, while those who did not feel the consequences of the war spent only 3-8%. Almost all Ukrainian businesses have experienced a decline in profits due to the war. Micro-enterprises are particularly vulnerable to crisis difficulties, as more than 40% of companies experienced a 50% decrease in profits. The same situation applies to one-third of small companies and a quarter of medium-sized companies. One-third of companies suffered profit losses in the range of 20-50% from pre-war levels. However, 1% to 4% of companies managed to more than double their profits during the war [8].

#### ***Purpose of the research***

The purpose of this research is to conduct a comprehensive analysis of the interplay between crisis factors, particularly the impact of the large-scale Russian invasion in 2022, and the profitability of dairy enterprises in Ukraine, with an emphasis on identifying risks and developing adaptive strategies to enhance resilience in the face of crisis phenomena. The formulated objective includes the following research tasks:

Within the framework of the outlined purpose, the following research tasks have been identified:

– firstly, analyze the dynamics of milk production volumes;

– secondly, evaluate the dynamics of profit, expenses, and revenues of dairy industry enterprises, as well as their profitability;

– thirdly, determine the negative factors that contribute to the losses of dairy industry enterprises.

#### ***Presentation of the main material***

The dairy industry in Ukraine, with its high potential, has been developing under challenging conditions for the past decade. Ongoing military conflict since 2014, annexation and occupation of parts of the territory, currency devaluation, and difficulties in securing credit resources have all contributed to a

pool of negative factors. Furthermore, in 2019-2020, the Ukrainian dairy sector felt the overall adverse impact of the COVID-19 pandemic. Starting from 2022, the industry suffered devastating disruption due to Russia's large-scale invasion, leading to the sector surviving in a state of long-term crisis in 2023.

Overall, the dairy industry is a vital part of the global food system, playing a crucial role in rural sustainability. The dairy sector actively contributes to the development of communities, regions, and countries. Currently, there is a noticeable increase in demand for dairy products worldwide, and the industry is becoming more globalized, thus increasing the scale and intensity of global dairy trade.

It is worth noting that our country has enormous potential in creating a closed cycle, allowing us to offer value-added products on international markets. This, in turn, creates a modern need for the development of the dairy industry to move away from a raw materials-based economic model. Additionally, the domestic market requires the development of animal husbandry in the agricultural sector, as an increasing number of dairy products are exported due to the conflict with Poland, indicating issues in the development of domestic producers. This poses threats to Ukraine's food security and dependency on foreign partners.

Today, the Ukrainian dairy sector is facing a challenging situation with a reduction in livestock, decreased productivity, and economic efficiency. Moreover, constant Russian rocket attacks, potential power shortages and outages, lack of funds, absence of accessible credit resources, logistical disruptions, and rising feed prices further complicate the business environment.

Therefore, it is now pertinent to identify and differentiate crisis-inducing factors affecting the profitability of dairy industry enterprises to understand their needs and support directions in the future.

According to the definition by V. Rikhlytsky, during the war, Ukrainian businesses incurred significant costs, with agrarian enterprises being the hardest hit [9]. As for the dairy industry, before the full-scale war began in February 2022, the industry was actively developing and was a profitable sector. According to V. Hubarieva's opinion [10], the growth of this industry was gradual and could be explained by several measures taken by the Ukrainian government after 2014, such as the ban on meat imports or the provision of financial and infrastructural support for the development of local agricultural production. In addition to government support, farmers found new solutions: they grew local animal breeds better adapted to Ukraine's climate and soil conditions, cooperated,

and adopted modern technologies. The livestock industry also faced problems familiar to farmers worldwide, such as declining animal populations, rising feed and resource prices, and climate change. However, despite these challenges, growth was still possible. Everything changed with the start of the war on February 24, 2022, which posed new obstacles to farmers: shelling, the need for evacuation, material and technical problems, and power outages that threatened to halt the production of any food or feed. As of November 2022, the losses from the death of animals and damage to farms were estimated at approximately \$51 million. There is no comprehensive data on the number of livestock farms destroyed because of military actions in Ukraine, as the war is ongoing, and losses from the destruction of agriculture or any other sector of the economy are increasing daily [10].

According to the State Statistics Committee [11], the dairy industry has undergone significant transformations amid the ongoing military conflict. In 2022, there was a noticeable reduction in the supply of raw materials intended for further processing, with a decrease of almost 17%. At the same time, due to labor migration and the economic recession of the previous year, domestic market demand decreased by 27%. However, it is expected to grow by 10% in 2023 compared to previous years.

Despite the forecasted increase in consumption, it is expected that exports will remain high in 2023, estimated at approximately 650,000 tons of milk equivalent. This will contribute to maintaining a balanced trade balance. Conversely, import volumes decreased in the previous year and are not expected to increase this year. Instead, revenue has increased due to record-high prices observed during this period.

In response to the demands of the time, driven by the armed conflict and disruptions in established logistics in 2022, there was an urgent need to significantly reorient the geographical structure of exports. In particular, exports to the European Union, which were previously limited, expanded significantly in 2022 due to positive measures taken by the EU. Additionally, it is worth noting that a significant portion of the export consisted of butter and related products, such as casein and cheese products. Conversely, the category of inexpensive dairy products, including fermented dairy products and spreads, experienced the most pronounced decline in exports in 2022, primarily due to logistics-related issues, making them less competitive in traditional markets [11]. It is important to mention that this trend was observed even before the war (Fig. 1).



Fig. 1. The Dynamics of milk production volumes

Source [10]

In 2022, Ukraine’s dairy industry suffered significant destruction, especially in the eastern and southern regions. As a result, milk production last year decreased by 1 million tons to 7.7 million tons, the lowest level in its history.

Analyzing the impact of the war on milk production volumes, we will calculate trend lines for the pre-war period of 2010-2021.

$$y = -231.45x + 11947 \quad (1)$$

According to the established dependency in 2022, milk production volumes were expected to be:

$$y(2022) = -231.45 \cdot 13 + 11947 = 8938.15 \text{ thousands of tones.} \quad (2)$$

Therefore, the approximate losses in milk

production volumes due to the war amounted to:

$$7768 - 8938.15 = -1170.157768 - 8938.15 = -1170.15 \text{ thousands of tones.} \quad (3)$$

In other words, the dairy industry lost significant raw material potential (-13%) as a result of the war.

According to the State Statistics Service [10], the sales volumes of the dairy industry during 2010-2021 (the latest published data) are presented in Fig. 2.

Before the war, the sales volumes of the dairy industry were increasing, while profit volumes [11] showed significant volatility (Fig. 3).

As we can see, the profit of the industry is affected by crisis factors that lead to increased expenses and decreased profitability in these years.

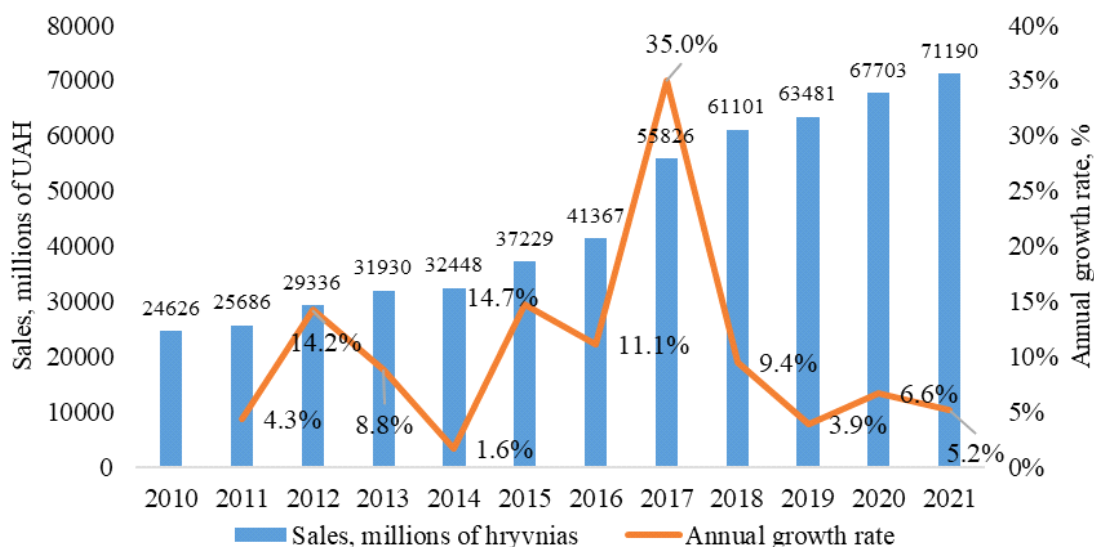


Fig. 2. The dynamics of dairy industry sales volumes, millions of UAH

Source [10]



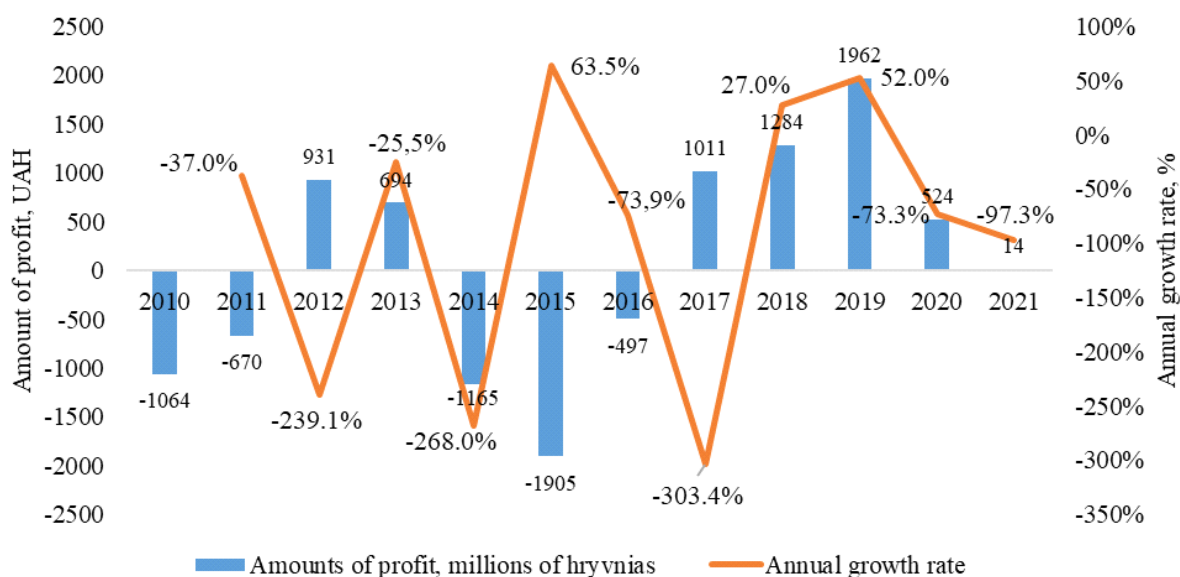


Fig. 3. The dynamics of profits for dairy industry enterprises, millions of UAH

Source [11]

Analyzing the dynamics of profits in the dairy industry, it's important to note that peaks of profitability decline in Ukraine were observed in 2010-2011, 2014-2016, and 2020-2021. This can be attributed to a combination of economic, geopolitical, global, and industry-specific factors, including:

- economic challenges: In 2010-2011, the global economy was recovering from the 2008 financial crisis. The dairy industry, like other sectors, faced issues related to economic instability, fluctuations in currency exchange rates, and inflation;

- geopolitical tension: From 2014 to 2016, significant geopolitical changes occurred in Ukraine, including the annexation of Crimea and the conflict in eastern Ukraine. This led to disruptions in trade routes, loss of access to key markets, and overall instability. The dairy – industry, dependent on international trade, became particularly vulnerable;

- global pandemic: Throughout 2020-2021, the world dealt with the COVID-19 pandemic. Lockdowns, supply chain disruptions, and changes in consumer behavior impacted various industries, including dairy. Restaurants and foodservice establishments, major consumers of dairy products, were closed due to quarantine measures, negatively affecting dairy product sales;

- market dynamics: The dairy industry is also influenced by market dynamics, including fluctuations in supply and demand, changes in consumer preferences, and competitive pressures;

- production costs: The increase in production costs, such as feed prices, labor costs, and energy expenses, significantly contributed to the formation of profitability in the dairy sector.

According to data from the State Statistics Service [12,13], the dynamics of profitability in dairy enterprises for the period of 2010-2022 is presented in Fig. 4.

In recent years, a decline in profitability of dairy enterprises can be observed, especially during 2020–2021. The intensification of the war led to losses in the sector's activities.

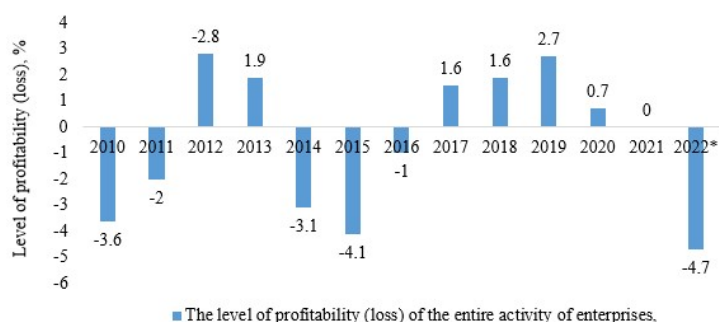
Table presents calculated linear trends for the analyzed indicators along with correlation coefficients.

The research conducted allows us to determine that the profitability of dairy enterprises is shaped by the balance of income and expenses, significantly influenced by the war. This is because income is reduced due to several factors, including the emigration of millions of Ukrainians.

The main factors leading to the reduction in milk production include:

- deterioration of the cattle population during the wartime;
- disruption of logistical chains;
- decreased production volumes in occupied and war-damaged regions [14].

Meanwhile, expenses are increasing primarily due to logistic disruptions, rising feed prices, and other factors. Most of the issues in the dairy sector existed



Note: \*average indicator by industry

Fig. 4. Dynamics of profitability of dairy enterprises, %

Source [12,13]

#### The calculation of correlation coefficients

	The level of profitability (loss) of the entire activity of enterprises, %	Revenues in millions of hryvnias	Profit in millions of hryvnias	Loss in millions of hryvnias
2010	-3.6	24626	-1064	25690
2011	-2	25686	-670	26356
2012	2.8	29336	931	28405
2013	1.9	31930	694	31236
2014	-3.1	32448	-1165	33613
2015	-4.1	37229	-1905	39134
2016	-1	41367	-497	41864
2017	1.6	55826	1011	54815
2018	1.9	61101	1284	59817
2019	2.7	63481	1962	61519
2020	0.7	67703	524	67179
2021	0	71190	14	71176
2022	-4.7			
Linear trend		$y=4718.53x-14489.82$	$y=142.33x-831,91$	$y=4576.20x+15321.73$
Correlation coefficient		0.480385	0.963876	0.431258

before the war but have been exacerbated by the conflict. In contemporary conditions, the Ukrainian dairy sector faces a multitude of adverse factors contributing to its losses. These determinants encompass various economic and structural aspects:

A significant reduction in milk production, connected to a simultaneous decrease in the cattle population, limiting the sector's ability to produce the necessary raw materials for dairy processing.

Constraints on Ukrainian dairy product exports to European markets, complicating access to crucial external revenue sources.

An increase in the overall cost structure for dairy

product production, leading to worsening financial conditions for dairy processing enterprises. The rise in production costs can be attributed to various factors such as sharp increases in feed prices, logistical disruptions, and increased energy costs due to the large-scale military aggression against Ukraine.

A substantial decline in the domestic consumer market for dairy products due to a range of factors, including migration processes and economic recession.

Increased imports of dairy products from European sources, including cheeses, which have crowded out the domestic market, further worsening the profitability of the sector.

Significant losses of dairy products originating from regions affected by occupation and armed conflict, exacerbated by logistical problems and infrastructure damage.

Serious issues with the solvency of retail enterprises, resulting in financial uncertainty and instability within the sector.

The absence of effective financial instruments for lending to dairy processing enterprises during wartime, intensifying the sector's fiscal vulnerability.

In conclusion, the combination of these determinants has led to the financial losses in Ukraine's dairy sector, necessitating strategic interventions and policy initiatives to restore its competitiveness and financial stability [14].

### **Conclusion**

Within the scope of the study, the response of the Ukrainian dairy industry to crisis factors was analyzed, with a particular emphasis on the consequences stemming from the Russian invasion in 2022. Furthermore, this approach provides a comprehensive analysis of previously unexamined long-term impacts on the sector's profitability.

Given the significant decrease in profitability in the Ukrainian dairy industry, there is a high likelihood of an increase in milk product prices. This particularly applies to the energy-intensive segment, where the necessity of ensuring a minimum level of profitability for the sustainable development of the industry and the survival of dairy enterprises becomes evident.

One of the key strategies for the Ukrainian dairy industry in 2023 is diversifying the export of dairy products. Expanding access to international markets for dairy products can compensate for some of the economic difficulties that have arisen in the domestic market. At the same time, efforts should be made to stimulate domestic demand. This may include measures such as reducing VAT rates, which can stimulate consumer activity and promote stability in the domestic market for dairy products.

However, the trajectory of the Ukrainian dairy industry's long-term development remains uncertain due to the ongoing armed conflicts. Today, many milk producers face financial difficulties, and the protracted nature of the military actions exacerbates the industry's problems.

Therefore, considering the numerous challenges, all stakeholders need to actively cooperate in anticipating and addressing these issues. Such cooperation should focus on the development and implementation of comprehensive strategies capable of mitigating the negative effects of crisis phenomena on the dairy industry. These strategies should encompass not only short-term financial support but also long-

term sustainable development measures. Additionally, they should align with broader goals of international initiatives and sustainable development.

In summary, the Ukrainian dairy industry faces a significant combination of economic and geopolitical challenges. The potential increase in milk product prices, driven by the need to ensure industry profitability, underscores the urgent need for proactive and adaptive measures. Diversification of exports, support for domestic demand, and strengthening resilience are crucial steps for surviving these turbulent times.

### **REFERENCES**

1. UNDP. (2015). Transforming Our World: The 2030 Agenda for Sustainable Development. *Department of Economic and Social Affairs of United Nations*. Retrieved from <https://sdgs.un.org/goals> [in English].
2. Shevchuk O., Ilyash O., Semenchuk N., Roshchyna N., Hrynevych S., Kozlovskiy S., Mazhara G. (2023). The Impact of the War in Ukraine on the Food Security of Low-Income Countries. *Problems of Sustainable Development*, 2, 6–41. DOI: 10.35784/preko.3927 [in English].
3. Ben Hassen, T., & El Bilali, H. (2022). The impact of the Russian-Ukrainian war on global food security: Towards more sustainable and resilient food systems? *Foods*. *MDPI* 11(15), 2301. DOI: <https://doi.org/10.3390/foods11152301> [in English].
4. Glauber, Joseph W., & Laborde Debucquet, David, eds. (2023). *The Russia-Ukraine conflict and global food security*. Washington, DC: International Food Policy Research Institute (IFPRI). DOI: <https://doi.org/10.2499/9780896294394> [in English].
5. CSIS. (2023). Russia, Ukraine, and Global Food Security: A One-Year Assessment. *CSIS*. Retrieved from <https://www.csis.org/analysis/russia-ukraine-and-global-food-security-one-year-assessment> [in English].
6. KSE School of Economics. (2023). Direct damage caused to Ukraine's infrastructure during the war has already reached almost \$63 billion. *KSE School of Economics*. Retrieved from <https://kse.ua/about-the-school/news/zbitki-naneseni-infrastrukturi-ukrayini-v-hodi-viyni-skladayut-mayzhe-63-mlrd/> [in English].
7. FAO. (2023). Ukraine: Impact of the war on agricultural enterprises – Findings of a nationwide survey of agricultural enterprises with land up to 250 hectares, January–February 2023. Rome. *FAO*. Retrieved from <https://www.fao.org/3/cc5755en/cc5755en.pdf> [in English].
8. Kyivstar Business Hub. (2023). Doslidzhennia stanu ukraïnskogo biznesu pid chas vijny: yak sebe pochuvaiut seredni, mali ta veliki kompanii. [Research of the state of Ukrainian business during the war: How medium, small, and large companies are existing]. *Kyivstar Business Hub*. Retrieved from <https://>

hub.kyivstar.ua/news/doslidzhennya-stanu-ukrayinskogo-biznesu-pid-chas-vijny-yak-sebe-pochuvayut-seredni-mali-ta-velyki-kompaniyi/ [in Ukrainian].

9. Rihlitskij, V. (2022). *Biznes v umovah viiny: hto zaznav naibilshyh vtrat ta yak vidnovliuutsia pidpriemstva*. [Business in wartime: Who suffered the greatest losses and how enterprises are recovering]. *Ekonomichna pravda – Economic Truth*. Retrieved from <https://www.epravda.com.ua/publications/2022/03/23/684549/> [in Ukrainian].

10. Derzhavna sluzhba statystyky Ukrainy. (2023). *Obsiah realizovanoi produktsii (tovariv, posluh) pidpriemstv za vydamy ekonomichnoi diialnosti z rozpodilom na velyki, seredni, mali ta mikropidpriemstva (2010-2021)* [The volume of sold products (goods, services) of enterprises by types of economic activity with a breakdown into large, medium, small and micro enterprises (2010-2021)]. [www.ukrstat.gov.ua](http://www.ukrstat.gov.ua). Retrieved from [https://www.ukrstat.gov.ua/operativ/operativ2022/fin/fin\\_new/Orp\\_kvod\\_10\\_21.xlsx](https://www.ukrstat.gov.ua/operativ/operativ2022/fin/fin_new/Orp_kvod_10_21.xlsx) [in Ukrainian].

11. Derzhavna sluzhba statystyky Ukrainy. (2023). *Obsiah realizovanoi produktsii (tovariv, posluh) pidpriemstv za vydamy ekonomichnoi diialnosti z rozpodilom na velyki, seredni, mali ta mikropidpriemstva (2010-2021)*. [Net profit (loss) of enterprises by types of economic activity, classified by large, medium, small, and microenterprises (2010-2021)]. [www.ukrstat.gov.ua](http://www.ukrstat.gov.ua). Retrieved from [https://www.ukrstat.gov.ua/operativ/operativ2021/fin/fin\\_new/chpr\\_ek\\_vsamm\\_2010\\_2020\\_ue.xlsx](https://www.ukrstat.gov.ua/operativ/operativ2021/fin/fin_new/chpr_ek_vsamm_2010_2020_ue.xlsx) [in Ukrainian].

12. Derzhavna sluzhba statystyky Ukrainy. (2023). *Rentabelnist operatsiinoi ta usiiei diialnosti pidpriemstv za vidami ekonomichnoi diialnosti u 2022 rotsi*. [Profitability of Operational and Overall Activities of Enterprises by Types of Economic Activity in 2022]. [www.ukrstat.gov.ua](http://www.ukrstat.gov.ua). Retrieved from [https://www.ukrstat.gov.ua/operativ/operativ2021/fin/rodp/rodp\\_ed/rodp\\_ed\\_u/rodp\\_ed\\_22ue.xlsx](https://www.ukrstat.gov.ua/operativ/operativ2021/fin/rodp/rodp_ed/rodp_ed_u/rodp_ed_22ue.xlsx) [in Ukrainian].

13. Derzhavna sluzhba statystyky Ukrainy. (2023). *Rentabelnist operatsiinoi ta usiiei diialnosti pidpriemstv za vidami ekonomichnoi diialnosti z rozpodilom na velyki, seredni, mali ta mikropidpriemstva (2010-2021)* [Profitability of operational and overall activities of enterprises by types of economic activity, broken down by large, medium, small, and microenterprises (2010-2021)]. [www.ukrstat.gov.ua](http://www.ukrstat.gov.ua). Retrieved from [https://www.ukrstat.gov.ua/operativ/operativ2021/fin/fin\\_new/rodp\\_ek\\_vsamm\\_2010\\_2020\\_ue.xlsx](https://www.ukrstat.gov.ua/operativ/operativ2021/fin/fin_new/rodp_ek_vsamm_2010_2020_ue.xlsx) [in Ukrainian].

14. Diia. (2023). *Zminy u molochnii galuzi za rik viiny: rezultaty pershoi ekspertnoi zustrichi*. [Changes in the Dairy Industry During One Year of War: Results of the First Expert Meeting]. [export.gov.ua](http://export.gov.ua). Retrieved from [https://export.gov.ua/news/4644-zmini\\_u\\_molochnii\\_galuzi\\_za\\_rik\\_viini\\_rezultati\\_pershoi\\_ekspertnoi\\_zustrichi](https://export.gov.ua/news/4644-zmini_u_molochnii_galuzi_za_rik_viini_rezultati_pershoi_ekspertnoi_zustrichi) [in Ukrainian].

Received 09.10.2023.

Revised 19.10.2023.

Accepted 17.11.2023.

Published 25.12.2023.

## ВПЛИВ КРИЗОУТВОРЮЮЧИХ ЧИННИКІВ НА ПРИБУТКОВІСТЬ ПІДПРИЄМСТВ МОЛОЧНОЇ ГАЛУЗІ УКРАЇНИ

*Шевчук О. А., Дадачко В. С.*

Особливий внесок цього дослідження полягає у ретельному вивченні реакції української молочної галузі на кризові фактори, з особливим акцентом на безпрецедентні виклики, спричинені російським вторгненням у 2022 році, пропонуючи комплексний аналіз раніше недосліджених довгострокових наслідків для прибутковості сектора. Автори дослідження підкреслюють, що молочна промисловість України демонструвала надзвичайну стійкість і зростання до початку війни в лютому 2022 року завдяки проактивній державній підтримці та інноваційним методам ведення сільського господарства. Разом з тим, через російське вторгнення виникли безпрецедентні виклики, які порушили традиційні торговельні канали, розірвали економічні зв'язки та суттєво обмежили доступ молочної галузі до критично важливих ресурсів. Поряд із безпосередніми безпековими ризиками, бойові дії на території України спричинили перебої в ланцюгах постачання, дефіцит електроенергії, ескалацію інфляції, торговельні обмеження та підірвали спроможність країни залучати іноземні інвестиції, що значно погіршило економічну ситуацію в державі. Авторами визначено кризові фактори, які сприяли зниженню рентабельності молочної промисловості, включаючи скорочення виробництва молока, обмежені можливості експорту, зростання витрат на виробництво, скорочення внутрішньої споживчої бази, збільшення імпорту молочної продукції, втрати на окупованих територіях, а також недостатню фінансову підтримку під час війни. Зазначено, що такі стратегії, як диверсифікація експорту, стимулювання внутрішнього попиту за рахунок зниження ПДВ і посилення стійкості, мають першочергове значення для подолання зазначених кризоутворюючих чинників. Автори наголошують, що спільні зусилля між зацікавленими сторонами, узгодження з міжнародними ініціативами та цілями сталого розвитку, а також проактивна реалізація комплексних стратегій є критично важливими кроками на шляху подолання поточної кризи та формування сталого майбутнього для молочної промисловості України.

**Ключові слова:** молочна промисловість, кризові фактори, прибутковість, економічні виклики, внутрішній попит, співпраця зацікавлених сторін, комплексні стратегії, стійкість.

## IMPACT OF CRISIS FACTORS ON THE PROFITABILITY OF DAIRY INDUSTRY IN UKRAINE

*Shevchuk O. A., Dadachko V. S.\**

National Technical University of Ukraine “Igor Sikorsky Kyiv Polytechnic Institute”, Kyiv, Ukraine

\*e-mail: [valeriidadachko@gmail.com](mailto:valeriidadachko@gmail.com)

Shevchuk O. A. ORCID: <https://orcid.org/0000-0003-4117-1474>

Dadachko V. S. ORCID: <https://orcid.org/0009-0001-7327-4008>

*The special contribution of this research lies in the thorough examination of the Ukrainian dairy industry's response to crisis factors, with a particular emphasis on unprecedented challenges brought about by the Russian invasion in 2022, offering a comprehensive analysis of previously unexplored long-term implications for the sector's profitability. The authors of the study highlight that the Ukrainian dairy industry demonstrated exceptional*



resilience and growth until the beginning of the war in February 2022 with a help of proactive state support and innovative agricultural methods. However, the Russian invasion posed unprecedented challenges that disrupted traditional trade channels, economic connections, and significantly limited the dairy sector's access to critical resources. In addition to security risks, the conflict in Ukraine resulted in supply chain disruptions, electricity shortages, rising inflation, trade restrictions, and hindered the country's capacity to attract foreign investments, all of which significantly worsened the economic situation in the country. The authors identify crisis factors contributing to the decline in dairy farm profitability, including reduced milk production, limited export opportunities, increased production costs, a shrinking domestic consumer base, higher imports of dairy products, losses in occupied territories, and insufficient financial support during the conflict. It is noted that strategies such as export diversification, stimulating domestic demand through reduced VAT and enhanced resilience, are of paramount importance in overcoming these crisis-inducing factors. The authors emphasize that collaborative efforts among stakeholders, alignment with international initiatives and sustainable development goals, as well as proactive implementation of comprehensive strategies, are critical steps toward addressing the current crisis and shaping a sustainable future for the Ukrainian dairy industry.

**Keywords:** dairy industry, crisis factors, profitability, economic challenges, domestic demand, stakeholder collaboration, comprehensive strategies, resilience.

#### REFERENCES

1. UNDP. (2015). Transforming Our World: The 2030 Agenda for Sustainable Development. *Department of Economic and Social Affairs of United Nations*. Retrieved from <https://sdgs.un.org/goals> [in English].
2. Shevchuk O, Ilyash O., Semenchenko N., Roshchyna N., Hrynkevych S., Kozlovskiy S., Mazhara G. (2023). The Impact of the War in Ukraine on the Food Security of Low-Income Countries. *Problems of Sustainable Development*, 2, 6–41. DOI: 10.35784/preko.3927 [in English].
3. Ben Hassen, T., & El Bilali, H. (2022). The impact of the Russian-Ukrainian war on global food security: Towards more sustainable and resilient food systems? *Foods*. *MDPI* 11(15), 2301. DOI: <https://doi.org/10.3390/foods11152301> [in English].
4. Glauber, Joseph W., & Laborde Debucquet, David, eds. (2023). *The Russia-Ukraine conflict and global food security*. Washington, DC: International Food Policy Research Institute (IFPRI). DOI: <https://doi.org/10.2499/9780896294394> [in English].
5. CSIS. (2023). Russia, Ukraine, and Global Food Security: A One-Year Assessment. *CSIS*. Retrieved from <https://www.csis.org/analysis/russia-ukraine-and-global-food-security-one-year-assessment> [in English].
6. KSE School of Economics. (2023). Direct damage caused to Ukraine's infrastructure during the war has already reached almost \$63 billion. *KSE School of Economics*. Retrieved from <https://kse.ua/about-the-school/news/zbitki-naneseni-infrastukturi-ukrayini-v-hodi-viyni-skladayut-mayzhe-63-mlrd/> [in English].
7. FAO. (2023). Ukraine: Impact of the war on agricultural enterprises – Findings of a nationwide survey of agricultural enterprises with land up to 250 hectares, January–February 2023. Rome. *FAO*. Retrieved from <https://www.fao.org/3/cc5755en/cc5755en.pdf> [in English].
8. Kyivstar Business Hub. (2023). Doslidzhennia stanu ukraïnskogo biznesu pid chas viyny: yak sebe pochuvaiut seredni, mali ta veliki kompanii. [Research of the state of Ukrainian business during the war: How medium, small, and large companies are existing]. *Kyivstar Business Hub*. Retrieved from <https://hub.kyivstar.ua/news/doslidzhennya-stanu-ukrayinskogo-biznesu-pid-chas-viyny-yak-sebe-pochuvayut-seredni-mali-ta-velyki-kompaniyi/> [in Ukrainian].
9. Rihlitskij, V. (2022). Biznes v umovah viiny: hto zaznav naibilshyh vtrat ta yak vidnovliuutsia pidpriemstva. [Business in wartime: Who suffered the greatest losses and how enterprises are recovering]. *Ekonomichna pravda – Economic Truth*. Retrieved from <https://www.epravda.com.ua/publications/2022/03/23/684549/> [in Ukrainian].
10. Derzhavna sluzhba statystyky Ukrainy. (2023). Obsiah realizovanoi produktsii (tovariv, posluh) pidpriemstv za vydamy ekonomichnoi diialnosti z rozpodilom na velyki, seredni, mali ta mikropidpriemstva (2010-2021) [The volume of sold products (goods, services) of enterprises by types of economic activity with a breakdown into large, medium, small and micro enterprises (2010-2021)]. *www.ukrstat.gov.ua*. Retrieved from [https://www.ukrstat.gov.ua/operativ/operativ2022/fin/fin\\_new/Orp\\_kved\\_10\\_21.xlsx](https://www.ukrstat.gov.ua/operativ/operativ2022/fin/fin_new/Orp_kved_10_21.xlsx) [in Ukrainian].
11. Derzhavna sluzhba statystyky Ukrainy. (2023). Obsiah realizovanoi produktsii (tovariv, posluh) pidpriemstv za vydamy ekonomichnoi diialnosti z rozpodilom na velyki, seredni, mali ta mikropidpriemstva (2010-2021). [Net profit (loss) of enterprises by types of economic activity, classified by large, medium, small, and microenterprises (2010-2021)]. *www.ukrstat.gov.ua*. Retrieved from [https://www.ukrstat.gov.ua/operativ/operativ2021/fin/fin\\_new/chpr\\_ek\\_vsmm\\_2010\\_2020\\_ue.xlsx](https://www.ukrstat.gov.ua/operativ/operativ2021/fin/fin_new/chpr_ek_vsmm_2010_2020_ue.xlsx) [in Ukrainian].
12. Derzhavna sluzhba statystyky Ukrainy. (2023). Rentabelnist operatsiinoi ta usiiei diialnosti pidpriemstv za vidami ekonomichnoi diialnosti u 2022 rotsi. [Profitability of Operational and Overall Activities of Enterprises by Types of Economic Activity in 2022]. *www.ukrstat.gov.ua*. Retrieved from [https://www.ukrstat.gov.ua/operativ/operativ2021/fin/rodp/rodp\\_ed/rodp\\_ed\\_u/rodp\\_ed\\_22ue.xlsx](https://www.ukrstat.gov.ua/operativ/operativ2021/fin/rodp/rodp_ed/rodp_ed_u/rodp_ed_22ue.xlsx) [in Ukrainian].
13. Derzhavna sluzhba statystyky Ukrainy. (2023). Rentabelnist operatsiinoi ta usiiei diialnosti pidpriemstv za vidami ekonomichnoi diialnosti z rozpodilom na velyki, seredni, mali ta mikropidpriemstva (2010-2021) [Profitability of operational and overall activities of enterprises by types of economic activity, broken down by large, medium, small, and microenterprises (2010-2021)]. *www.ukrstat.gov.ua*. Retrieved from [https://www.ukrstat.gov.ua/operativ/operativ2021/fin/fin\\_new/rodp\\_ek\\_vsmm\\_2010\\_2020\\_ue.xlsx](https://www.ukrstat.gov.ua/operativ/operativ2021/fin/fin_new/rodp_ek_vsmm_2010_2020_ue.xlsx) [in Ukrainian].
14. Diia. (2023). Zminy u molochonii galuzi za rik viiny: rezultaty pershoi ekspertnoi zustrichi. [Changes in the Dairy Industry During One Year of War: Results of the First Expert Meeting]. *export.gov.ua*. Retrieved from [https://export.gov.ua/news/4644-zmini\\_u\\_molochonii\\_galuzi\\_za\\_rik\\_viini\\_rezultati\\_pershoi\\_ekspertnoi\\_zustrichi](https://export.gov.ua/news/4644-zmini_u_molochonii_galuzi_za_rik_viini_rezultati_pershoi_ekspertnoi_zustrichi) [in Ukrainian].