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Lidiia Kostyrko

D.Sc. in Economics, Professor of the Department of Finance and Banking, Volodymyr Dahl East Ukrainian National University, Kyiv, Ukraine;
ORCID: [0000-0002-3447-2343](https://orcid.org/0000-0002-3447-2343)

Tatyana Solomatina

D.Sc. in Economics, Professor of the Department of Finance and Banking, Volodymyr Dahl East Ukrainian National University, Kyiv, Ukraine;
ORCID: [0000-0002-1949-3277](https://orcid.org/0000-0002-1949-3277)

Ruslan Kostyrko

D.Sc. in Economics, Professor of the Department of Accounting, Auditing and Taxation, National Academy of Statistics, Accounting and Auditing, Kyiv, Ukraine;
ORCID: [0000-0001-9247-3363](https://orcid.org/0000-0001-9247-3363)

Liudmyla Zaitseva

Candidate of Economy Sciences, Associate Professor of the Department of Management, Taras Shevchenko Luhansk National University, Poltava, Ukraine;
ORCID: [0000-0002-9388-5500](https://orcid.org/0000-0002-9388-5500)

Elieonora Chernodubova

Candidate of Economy Sciences, Associate Professor of the Department of Finance and Banking, Volodymyr Dahl East Ukrainian National University, Poltava, Ukraine;
e-mail: ella.cher.lg@gmail.com
ORCID: [0000-0001-7696-3215](https://orcid.org/0000-0001-7696-3215)
(Corresponding author)

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FINANCIAL STRATEGY OF AGRICULTURAL ENTERPRISES IN CONDITIONS OF UNCERTAINTY: METHODS, ASSESSMENT, AUDIT

ABSTRACT

In modern conditions of the unpredictability of changes in the economic environment, ensuring the continuity of management of agrarian enterprises requires adequate awareness of the need to choose strategic vectors of their development based on the application of analytical tools for risk assessment. The article discloses the prerequisites for the development of methodological support for comprehensive risk analysis and substantiates the scenarios for choosing the financial strategy of agrarian enterprises in conditions of uncertainty of changes in the economic environment.

The purpose of the study is to substantiate the theoretical and methodological principles of comprehensive risk analysis as a tool for choosing a financial strategy for the development of agricultural enterprises in conditions of uncertainty, which is solved through the study of the prerequisites for assessing the risks of the activities of agricultural enterprises in conditions of uncertainty, etc.

In order to form an information platform, regarding the assessment of the consequences of risk events, for the selection of financial strategy vectors, a coordinated system of risk indicators has been built. The impact of internal and external environmental factors on the risks of agricultural enterprises has been identified. For the ranking of strategic alternatives for the development of enterprises, a sequence of assessing the risk of reducing the profitability of enterprises is proposed. Procedures for scenario analysis of trends in expected financial indicators are substantiated. As a generalizing indicator of choosing a financial strategy for the development of enterprises, an indicator of market value, adjusted for risk factors and financial stability potential reserves, is proposed.

The practice of using analytical methods of risk assessment when choosing a financial strategy is demonstrated in the example of the activities of domestic agricultural holdings LLC "Kernel-Trade", PJSC "MHP", JSC "Astarta-Kyiv" for the years 2018-2022.

Keywords: agricultural enterprises, analysis, audit, uncertainty, continuity, integrated approach, risk assessment, financial stability, choice of financial strategy

JEL Classification: M41, O13, Q14

INTRODUCTION

Operational risks are objectively present at any stage of the life cycle of enterprises, therefore there is a need for an analytical assessment of the strategic vector of development, which is a key task in the activity of the subject, as a guarantee of sustainable continuous development. The need for business risk analysis and assessment is reinforced by the military aggression of the Russian Federation against Ukraine, which became the dominant negative factor in the bankruptcy and even liquidation of many agricultural enterprises. According to the calculations of analysts of the KSE Agrocenter and the Ministry of Agrarian Policy, the total direct and indirect losses in agriculture exceeded USD 40 billion (Neyter, 2022). In addition, it should be noted that the agricultural sector is one of the riskiest sectors of the economy, since its activity depends on many factors, such as weather, climate changes, market prices, the level of competition, availability of loans. Therefore, ensuring the continuous functioning of economic

entities of the agrarian sector requires finding approaches to assessing the ability to adapt to changes in the conditions of the modern economic environment and choosing the vectors of a financial strategy taking into account risk. A qualitatively constructed risk assessment system of enterprise activity allows you to make effective decisions regarding the choice of financial strategy based on informative and analytical support. Under such circumstances, the formation of a comprehensive system of analysis of the impact of risks on the continuity of the activities of agricultural enterprises in order to choose a financial strategy in conditions of instability requires further justification and development.

LITERATURE REVIEW

A large number of scientific works by foreign and domestic scientists are devoted to the problems of risk management and the peculiarities of the application of certain methods and tools for assessing the risk of business entities. In the context of the discussion on this topic, there are different views of scientists on approaches to risk studies as a tool for choosing a strategy for the development of subjects in certain industries.

A separate group of scientists focused on the study of risks in the context of forming a strategy for the development of agrarian enterprises. Thus, according to the results of the study of the influence of market risks on the development strategy of enterprises, two approaches are distinguished: "offers" - when state and social agents intervene to help farmers overcome the main problems of development and "demand". Therefore, it was established that the demand-side approach is the most important for the development of an enterprise development strategy taking into account market risks, since private agents create incentives for farmers to modernize, through the conclusion of contracts and vertical coordination in value chains (Alain and Sadoulet, 2020). The authors (Chen et al., 2023) proved that the financing of material supply chains, which are characterized by high risks, can affect their management, with the help of functional and structural innovations throughout the supply chain, and solve the problems of capital limitation in the process of implementing the strategy of enterprises. The work (Vasylchak et al., 2022) defines the main aspects of the formation of business finances and proposes the integration of a system of indicators to determine the integral assessment of the activities of business entities. According to the results of software (MILP) modelling of the optimal operational strategy, not prone to risk, scientists found that in the absence of risk, the expected income can be increased almost three times (Wang et al., 2023).

Some authors link the risks and development strategy of agricultural enterprises with the impact of climate change. At the same time, the decarbonization strategies of agricultural enterprises can potentially provide a climate risk premium in the future (Icon et al., 2022). Accordingly, in relation to risk assessment, there are recommendations, relevant today, of a strategy for the development of climate-optimized agriculture, focused on reducing greenhouse gas emissions and ensuring food security. As the main directions of the development strategy, the authors believe that the use of advanced Internet technologies will ensure the security of agricultural information, improve the structure of crops and management methods, provide the "Internet + weather" service and improve the quality of agricultural services, as well as insurance based on agricultural weather indices (Zhao et al., 2023). Modelling of the complex assessment of the level of innovation security is closely related to the complex analysis of risk (Zolkover and Ovcharenko, 2024), since innovations are an important factor in increasing the competitiveness of agricultural enterprises and can be both a source of opportunities and risks. Innovative security includes protection against technological, legal and financial threats that arise during the introduction of new technologies. In turn, comprehensive risk analysis helps agricultural enterprises choose financial strategies that reduce the negative consequences of potential threats related to innovations and take into account the uncertainty of market conditions. Scientists (Ovcharenko et al., 2022) proposed modelling methods for reducing the impact of uncertainty in the context of globalization, the main recommendations for the use of such methods are applied in our scientific research.

Some authors, based on the use of a scenario approach, have proposed a structure (MORDMAgro) based on the methodology of multi-objective reliable decision-making, which allows to help in situations where it is impossible to present uncertain critical parameters that affect the result, i.e., crop prices or weather conditions. The advantage of the proposed approach lies in the formation of reliable strategies that include the optimal allocation of land to crops increasing the variety of outcomes for as many scenarios as possible, rather than the search for an "optimal" strategy that optimizes one or more objectives (González et al., 2020). The results of the research of agricultural crops in regions with high variability of weather conditions based on the application of the PCA and SS analysis method, in particular the financial risk assessment methodology and recommendations for the use of risk assessment results in the model of index insurance for hedging the income of agricultural enterprises, are of great importance (Ricardianto et al., 2023).

Some scientists considered the threats of risks through the prism of financial support of enterprises, planning of production needs in financial resources (Abrego-Perez et al., 2023); cash flow forecasting for project sites. The authors believe that risks arise from projects with vague cash flow forecasts for project sites with low or ambiguous threat status and simplified

impact indicators that are a consequence of performance. Therefore, the risk reduction strategy should be based on the use of basic income assessment indicators, as well as guarantees of investor protection in case of insufficient income (Thompson, 2023). Important for our research is the article by the authors (Zhyvko et al., 2022), where the conceptual foundations of management accounting and economic finance are proposed.

The results of a subsequent study (King et al., 2021) showed that the diversification of enterprise income is associated with better credit quality and credit risk management. Market risk increases with the level of income diversification of enterprises. The existing high profitability of enterprises is a consequence of quality credit risk management, which is confirmed by the experience of developed countries. Based on the results of an econometric analysis of financial support for agricultural enterprises, scientists have identified a relationship between indicators of financial support and GDP growth rates, inflation and interest rates on loans. It is these factors that affect the availability and value of financial resources, credit programs and risks. The authors believe that institutional factors have a key impact on risk and financial support of activities, so they should be taken into account in the company's strategy (Lubenchenko et al., 2023). A rather non-standard system of indicators is used in the work (Kyryliuk et al., 2021), where the basics of security and finance of agricultural enterprises are determined in conditions of uncertainty and rapid changes in the external environment. In scientific research (Khodakivska et al., 2022), innovative means of economic management are proposed, which can be implemented in conditions of uncertainty of the work of agricultural enterprises. Scientists (Ishchejkin et al., 2023) proposed directions for financial design and accounting of agribusiness in conditions of change. The authors proposed important institutional conditions for the development of agrarian enterprises in the conditions of change (Korobenko et al., 2021), we note that without infrastructural support, risk management in the agricultural sector is not possible at all. Extremely important within our research are proposals for the application of hedge technologies to minimize price risks in agriculture, which are proposed (Abuselidze et al., 2022).

In a scientific study (Mostenska et al., 2021), attention is focused on the restructuring processes of enterprises, which can serve as help in reducing risks. Scientists (Lutsiak et al., 2023) proposed directions for innovative strategizing of agricultural enterprises in conditions of uncertainty, which significantly reduces risks in the agricultural sector. Scientists (Alekseieva et al., 2024) proposed directions for the management of agricultural enterprises in the conditions of post-war recovery, which serves as an important direction for the strategizing of business entities. In the work (Varaksina et al., 2022), the positioning of business systems for the production of organic products in the conditions of globalization and innovative economy is proposed, which can be used to hedge risks in the agricultural sector. From the standpoint of an interdisciplinary approach, the scope of our research may include the work of scientists (Saienko et al., 2023).

Polymorphism analysis and development of a molecular genetic genotyping system for the telomerase reverse transcriptase gene can be integrated into a comprehensive approach to risk management in agricultural enterprises. Molecular genetic studies allow a better understanding of the biological factors that affect the yield and resistance of plants to stresses, which is an important element of strategic planning in the agricultural sector. For its part, a comprehensive analysis of risks in the financial strategies of agricultural enterprises takes into account the uncertainty associated with natural and market conditions. The use of genetic information can help reduce risks by more precisely selecting crops and varieties that optimize productivity and sustainability. This creates an opportunity to integrate genetic innovation into financial models that help businesses shape strategies in the face of uncertainty, taking into account both biological and economic risks. A scientific article (Mostenska et al., 2024) is useful, in particular, the agri-food sector is key to ensuring the economic security of Ukraine, as stable production and supply of agricultural products ensures food independence and a significant contribution to the national economy. At the same time, agricultural enterprises face numerous risks related to climatic, market and legal factors that can significantly affect their efficiency and ability to maintain economic stability. Comprehensive risk analysis, covering assessment and audit methods, allows agricultural enterprises to adapt their financial strategies to conditions of uncertainty.

The paper (Markina et al., 2022) also has interesting aspects that are necessary for our paper. Thus, the management aspect of the formation of competitive advantages of agro-food enterprises is closely related to effective risk management in conditions of uncertainty. Competitive advantages in the agricultural sector are based on the optimization of resources, innovations and strategies that minimize the negative impact of external factors. Comprehensive risk analysis is an important tool in choosing the financial strategy of enterprises, allowing them to adapt to market fluctuations, climate changes and legal risks. Identification and assessment of risks help enterprises to create more flexible strategies, which helps not only to preserve, but also to strengthen competitive positions. Management decisions based on audit data and risk management allow agri-food enterprises to achieve stability and long-term success in the market.

A group of scientists (Mihus and Zaiets, 2024) raises an important question related to our scientific research. Forecasting current assets is an important element in supporting the financial and economic security of enterprises, as it ensures their

liquidity and ability to avoid bankruptcy. In agricultural enterprises, where external risks, such as changes in market conditions or climatic fluctuations, have a significant impact, comprehensive risk analysis becomes a necessary tool for the formation of financial strategies. Effective working capital management helps businesses better prepare for potential threats and adapt their financial strategies, reducing the risks associated with a lack of working capital or unexpected costs. The combination of asset forecasting and risk management allows enterprises to maintain stability and avoid critical financial situations, which reduces the probability of bankruptcy and increases economic stability.

The following group includes researchers who focused on the development of theory and applied aspects of the use of mathematical methods of risk assessment, differing in subject matter and fields of application:

1. Simulation modelling methods are used in the study of management strategy, financial policy selection, and bankruptcy risk forecasting (Mayovets et al., 2021; Kostyrko and Solomatina, 2019).
2. Simulation of the risks of growth of energy carriers in the cost of agricultural products, through the application of the vector dynamic model TVP-VAR- in the process of implementing the management strategy of profit maximization with minimal risks. The results of the empirical data of the study indicate that. For the successful implementation of the strategy, investors need a low share of energy-dependent agricultural goods (Furuoka et al., 2023).
3. Prioritization of potential risks for a smart and sustainable agro-logistics industry and strategies to reduce them - using the Bayesian Best-Worst Method (BBWM). According to the results of the study, it was found that technological (0.351), social (0.187) and individual (0.169) risks are dominant in the agro-logistics sector. In addition, a combination of several strategies is more effective than any one strategy alone in reducing identified risks (Gupta et al., 2023).
4. Methods of regression analysis in the process of researching the influence of factors on the quality of risk management of banking organizations (Zouari-Hadiji, 2021). It should be noted that the specified methods of risk assessment are of the greatest importance for assessing the consequences of risk threats related to activities, risk management, and strategy. At the same time, the use of mathematical methods is of the greatest importance precisely for the assessment of the threats of risks associated with activities, risk management, risk strategy and their consequences, in particular the impact of losses from risks on the expected market value of the enterprise, as well as the choice of a financial strategy, which in this way related to the topic of our research.

Important are the studies (Zubro and Serhienko, 2023), where the scenario forecasting of the development of enterprises in conditions of uncertainty is determined, the scenario modelling itself is part of our research. Separately, researchers who focused exclusively on the study of risks in the system of entrepreneurial activity, through the prism of audit evidence, are distinguished in order to form an audit opinion on compliance with the principle of continuity by business entities in conditions of uncertainty (Lubenchenko et al., 2023).

We emphasize that this provided such developments with a certain depth of research into issues of business riskiness from the standpoint of ensuring the continuity of business entities in conditions of uncertainty in the economic environment. International GAAP standards mostly recommend using a statistical method of risk assessment. In modern economic literature, there is no single methodical approach to risk assessment when choosing a financial strategy in conditions of instability. Common to most of the existing methodological recommendations are proposals for the technology of risk identification and assessment, as well as the main methods of their processing. Risk identification is proposed to be carried out on the basis of a survey of experts. The above approaches are not scientifically conclusive and require further research. This, in particular, concerns the development of the theoretical and methodological foundations of the comprehensive risk analysis of agricultural enterprises, as a tool for substantiating and choosing a financial strategy in conditions of uncertainty, which, unlike the existing ones, is based on a comprehensive approach that takes into account all aspects of the problem under study.

AIMS AND OBJECTIVES

The purpose of the article is to develop a methodology for risk analysis as a tool for choosing the financial strategy of agrarian enterprises in conditions of uncertainty.

According to the goal, the following tasks are defined:

1. To determine the peculiarities of the unstable environment and the factors that influence the activity of agricultural enterprises.

2. Existing methods of risk analysis and assessment were considered, and their shortcomings and ways to solve them were determined.
3. The author's method of risk assessment is proposed, taking into account the identification of the external influence of factors on the continuity of enterprise activity.
4. The author's methodology was tested on the example of individual subjects of entrepreneurial activity in the agricultural sector.
5. The matrix of priority actions regarding the areas of implementation of the financial strategy of agrarian enterprises is specified.
6. The main priorities for the implementation of directions for improving the analytical toolkit for assessing the risks of impact on the financial ability to ensure the continuous activity of agrarian enterprises and the choice of alternatives for their financial strategy in conditions of instability have been determined.

METHODS

The unstable economic environment of enterprises indicates significant uncertainty in the economic and financial conditions of operations. This can be caused by various external factors, including changes in macroeconomic policy, a decrease in market demand, increased competition, changes in exchange rates, increased inflation, changes in tax policy and other factors that can affect the financial results of enterprises. An unstable economic environment leads to uncertainty in the internal business planning of enterprises, limited access to financing, increased costs and reduced profits, deterioration of financial stability indicators, deterioration of relations with customers and reduced competitiveness in the market.

There are many factors that can lead businesses to an unstable economic environment. "Business continuity" defines operational, financial and other factors affecting continuity, but the standard does not provide for the assessment of continuity during military operations [36]. All these factors must be considered through the prism of events related to martial law, and clarification of the risk factors of cessation of activity, which makes it possible to plan appropriate audit procedures for gathering audit evidence and forming the auditor's opinion about continuity.

Identification and research of the economically unstable economic environment of enterprises based on analytical information is important for assessing business risks under the following circumstances:

First, there is a need to choose a method of regulating business risk when forming a financial strategy for the development of an enterprise in conditions of instability. The choice of risk management method depends on the object of management, the results of probability assessment and permissible losses to ensure the continuous operation of the enterprise. The most suitable method of risk acceptance (compensation of losses at the expense of one's own funds) is the creation of reserves to cover it. When choosing and using risk management tools, it is necessary to optimize the allocation of funds between measures:

- in order to prevent the risk of bankruptcy, it is advisable to choose a share form of capital, in case of conflicting interests of investors or low efficiency of invested capital;
- to minimize business risks at the stage of strategic planning due to the selection of an effective credit policy, appropriate forms of restructuring of receivables;
- to compensate for the loss of economic benefits (consequences) of risks at the expense of the formed reserves.

Secondly, the imperfection of the methodology for analyzing the compliance of enterprise risks and the sources of their coverage leads to errors in the calculation of reserves for covering losses from risks, due to the use of indicators obtained on the basis of expert evaluation. In addition, the system of indicators of risk analysis for the purposes of forming non-normative reserves to cover losses from risk is imperfect. The majority of risk analysis methods are focused on assessing the risk of loss of profitability and insolvency using traditional methods of ratio analysis. The issue of developing a methodology for the analysis and assessment of reserves to cover the risks of entrepreneurial activity for the selection of financial strategy vectors needs to be resolved.

In order to obtain sufficient and reliable information about risks, as part of the analysis of the adequacy of reserves, a complete and coordinated system of risk indicators, subject to audit, should be built in order to form an information platform for assessing the consequences of risk events for the selection of financial strategy vectors. IFRS 7 "Financial Instruments: Disclosure" and ISA 570 focus on the disclosure of information in corporate reporting on risks, since "uncertainty" is associated with the risk of planning, making decisions and taking actions at all levels of the economic system

[36, 37]. Conducting an audit will contribute to the formation of confidence in the reliability of information regarding the quality of reporting, understanding of systems, adequacy of reserves, and the choice of financial strategy vectors to minimize the level of risks, as the audit contributes to the formation of integrated thinking of information users, as well as combined confidence in how the organization's risks are managed and achieved its goals (Kostyrko et al., 2021).

According to paragraph 33 of IFRS 7, for each type of risk arising from financial instruments, the business entity discloses the risks and their occurrence; the purpose, policy, management processes and methods used by the enterprise to assess risk; any changes compared to the previous period. Therefore, it is necessary to identify, assess and audit external and internal business risks, including risks of reduced financial stability, insolvency or bankruptcy.

All these studies testify to the need to identify the influence of factors on the potential of business continuity and assess business risks. From the point of view of the system approach, risk assessment is a quantitative or qualitative measurement of the loss of economic benefits of the enterprise, which is a consequence of the influence of risk factors. We emphasize that due to the instability of the economic environment and the multifacetedness of the economic category "risk", two types of problems arise: the choice of risk assessment methods and the justification of financial strategy alternatives based on the results of risk assessment. These tasks are weighed in each specific case depending on the objectives of the research, the adopted system of hypotheses, the availability of relevant information and the justification of risk assessment methods.

Generalization of existing methods and models of business risk assessment shows that the breadth of their application depends on specific goals, objects and tasks. Classical methods of quantitative and qualitative risk assessment remain the most common, but there is a need, first, to assess the relationship between asset and capital indicators in order to determine expected indicators of financial stability; secondly, a comprehensive risk assessment focused on the formation of an information platform for choosing a financial strategy based on the market value, adjusted for risk factors and financial stability reserves of enterprises. In this study, the main attention will be paid to the methods of risk assessment of the potential reduction of financial stability, and the forecast of its changes according to indicators. The emphasis of the research is on methods of identification, assessment and ways of responding to or preventing risk. The task of such an analysis is to determine the changes in indicators that characterize the potential of the financial stability of the enterprise for the assessment of internal reserves to cover losses in the future and the choice of financial strategy alternatives.

Depending on the subject of research, risk analysis and assessment techniques can be classified as follows (Kostyrko and Solomatina, 2019):

1. A technique focused on the sensitivity analysis of activity performance indicators, which allows you to calculate the range of variation based on pessimistic, most likely and optimistic scenarios.
2. A technique based on the analysis of the probable distribution of profitability.
3. A technique focused on assessing the risk of insolvency.
4. A technique focused on assessing the risk of financial investment instruments.
5. A technique aimed at assessing the risk of a decrease in financial stability when choosing a strategy for the development of enterprises.

With regard to the choice of strategy in conditions of instability, the most suitable is the assessment of the risk of a decrease in profitability. The choice of the dominant sign of risk for the ranking of strategic alternatives for the development of the enterprise is established on the basis of the definition of the optimization criterion "profitability - risk", which is a measure of expected profitability. In order to solve these problems, a sequence of risk analysis of enterprise activity is proposed according to the following stages. The first stage of comprehensive risk assessment involves the identification of the impact of external factors on the continuity of business operations. The second stage involves a scenario analysis to assess the trends of the expected indicators characterizing the financial ability to ensure the continuity of the enterprises' activities under various scenarios. The results of SWOT and PEST analyses. The third stage. Risk assessment and determination of its profile depend on the identified risk factors and the probability of losses from risks. The fourth stage. Choice of financial strategy alternatives taking into account risk.

RESULTS

The first stage of comprehensive risk assessment involves the identification of the impact of external factors on the continuity of business operations.

The following methods are used to identify the influence of external factors on the activities of enterprises:

1. SWOT analysis (analysis of strengths and weaknesses, opportunities and threats) allows you to identify internal and external factors that can affect the enterprise.
2. PEST analysis (analysis of political, economic, social and technological factors) allows to assess the impact of market factors (competitors, consumers, potential partners and suppliers, as well as changes in the market).
3. Scenario analysis provides an opportunity to predict possible development scenarios and assess the probability of their implementation.
4. Monitoring of news and events allows you to monitor news and events that may affect the work of the enterprise as a whole. However, it is very important to identify possible causes of instability within the enterprise itself. Today, the most common of such methods are:
 - analysis of data from various sources, such as monitoring and control systems. The use of modern methods of data analysis, such as machine learning and artificial intelligence, allows enterprises to detect instability and forecast production processes. Analysis of large volumes of data (Big Data) allows to reveal hidden patterns and connections that may indicate instability within the enterprise;
 - time series analysis is used to identify trends and cyclicity in production process data, which can help detect instability;
 - analysis of factors and forecasting is used to identify factors affecting production processes and possible sources of instability. Forecasting is used to assess future trends and changes in production processes, enabling businesses to make decisions;
 - Exploratory Data Analysis allows you to conduct data research and identify hidden patterns and anomalies that may indicate instability within the enterprise.

These methods can be used in combination with each other for the maximum effect and detection of the instability of the enterprise, which will allow:

- to assess the level of risks and opportunities. Analysis of the economic environment helps to determine what changes can affect the business processes of the enterprise, its financial situation, and its reputation. This allows you to assess the level of risks and opportunities associated with economic instability and develop strategies for managing risks and taking advantage of opportunities;
- to develop flexible management strategies. Analyzing the economic environment also helps to develop flexible management strategies that can be changed depending on changing market conditions and the economic environment;
- to plan the budget and investments. Analyzing the economic environment also allows businesses to plan budgets and investments in light of potential risks and opportunities associated with economic volatility.

To analyze the impact of external factors on economic instability, we will combine SWOT and PEST analyses. With the help of the first, we will assess the strengths/weaknesses, opportunities and threats, and the second will help to reveal the degree of influence of external factors on the activities of agricultural enterprises.

The conducted SWOT analysis (Table 1) showed that, despite the very difficult situation in the sector, enterprises now have a unique opportunity to attract inexpensive financial resources to overcome problems that have been accumulating for years, it can be the improvement of product quality, its standardization, work on soil regeneration, the introduction of digital technologies and a bet on technologies for growing not only ecological products but also those loyal to the climate, with low greenhouse gas emissions.

Table 1. SWOT analysis of agricultural enterprises of Ukraine. (Source: compiled by the authors based on data [39, 40, 41])

| Strengths | Weaknesses |
|---|--|
| <ol style="list-style-type: none"> 1. Fertile agricultural lands and their area 2. Favorable climatic conditions. The presence of several climatic zones 2. Cheap labour force 3. Inexpensive financial resources 4. Loyal taxation of activity 5. High export capacity | <ol style="list-style-type: none"> 1. Non-compliance with modern standards of production of ecological products 2. Soil degradation 3. Technologies that have a negative impact on the climate and environment 4. Unstable productivity 5. High energy and material consumption of production |
| Opportunities | Threats |
| <ol style="list-style-type: none"> 1. Use of international grants to improve soil conditions and new production technologies 2. Digitization of the industry: logistics, control, security 3. New sales markets: Asia, Africa 4. Differentiation of export sales markets with simultaneous homologation 5. Production of high-quality GMO products | <ol style="list-style-type: none"> 1. Continuation of hostilities: loss of land, means of production, disruption of infrastructure and logistics, failure of harvest 2. Changes in the priorities of state support for the agricultural sector 3. Rising prices for fuel, fuel, fertilizers 4. Reduction of export potential due to non-compliance with environmental standards 5. Climatic changes |

The results of the PEST analysis showed that the political (25 points) and social (24 points) factors were rated the highest, which may indicate significant uncertainty in the political and social environment, as well as changes in interaction with consumers and society as a whole (Table 2). Therefore, it is suggested to develop an adaptive development strategy using scenario analysis, risk assessment, and improving the quality of communication with interested parties.

Table 2. PEST-analysis of agricultural enterprises of Ukraine. (Source: compiled by the authors on the basis of a questionnaire of top management workers of the studied agricultural enterprises)

| Factors of influence | Number of points | Factors of influence | Number of points |
|---|------------------|---|------------------|
| Political factor | | Economic factor | |
| Martial law | 8 | Inflation rate and exchange rate to the hryvnia | 5 |
| Legislative changes regarding the land market | 3 | World prices for agricultural products | 2 |
| Corruption, lobbying interests of interested parties | 7 | Prices for fuel, fuel, fertilizers | 4 |
| Artificial restraint of export of products | 4 | Financial and credit instruments, their cost | 5 |
| Tax policy | 3 | State regulation of prices for agricultural products | 2 |
| Total: | 25 | Total: | 18 |
| Social factor | | Technological factor | |
| Demographic situation: martial law, migration | 8 | IT technologies in the agricultural sector: automation, robotics | 2 |
| Qualitative characteristics of labour resources | 7 | New technologies of ecological production: standards, certification | 3 |
| Trends in the labour market: professions, salary level, preferences of the population | 6 | Intellectual property rights: protection and distribution | 3 |
| Social responsibility of business | 2 | New communication technologies: business clients | 4 |
| Changing attitudes towards the environment and ecological production | 1 | Limitations in the use of technologies. For example, GMOs | 2 |
| Total: | 24 | Total: | 14 |

According to forecasts of the Council of the EU, as a result of the war and depending on its duration, the population of Ukraine may decrease by 24-33%. Confirmation of this threat is the decrease in the number of those who live and work in Ukraine already: since the beginning of the Russian aggression, the population has decreased by 6.7 million. In addition, the sex-age structure of Ukrainian society is changing - the share of youth under 20 and the share of person's productive age. Over time, this will lead to a narrowing of the demographic base of population reproduction in Ukraine. Also, the prolonged nature of the war, the destruction of the economic structure of Ukraine, and the difficult period of social and economic post-war recovery of the state increase the risks of not returning home for a significant part of this population

category. Meanwhile, the number of young people is also decreasing - all this threatens the deterioration of the quality of the country's demographic potential in the medium and long term and the critical importance of the social factor for the development of the country's economy [42]. Enterprises, in turn, understanding this factor of influence, are already recommended to develop their own social policy.

According to the obtained results, enterprises should focus on the economic factor, which ranks second (18 points). This may indicate the presence of external economic factors that can affect the profitability of agricultural enterprises. In order to minimize the impact of the unstable economic environment of enterprises, the most expedient is scenario analysis with trigger financial indicators, which allows to form an information platform for assessing the financial capacity for business continuity and choosing financial strategy alternatives. In general, the choice of specific financial indicators depends on the goals of the enterprise and its business model.

Finally, the technological factor (14 points) was rated the least highly, but it should not be ignored. Agricultural enterprises can use the information obtained to evaluate the opportunities that new technologies may provide, as well as to analyze how these technologies may affect competition in the industry.

The second stage involves a scenario analysis to assess the trends of the expected indicators characterizing the financial ability to ensure the continuity of the enterprises' activities under various scenarios. Based on the high dependence of the continuity of the activity of agricultural enterprises on the risky external environment, the study focused on the analytical assessment of the key indicators of the enterprise's performance: net profit, return on equity and assets, net working capital based on the data of agricultural holdings of Ukraine, Crenel-Trade LLC, PrJSC " MHP" and "Astarta-Kyiv" JSC over the last 5 years [43, 44, 45] according to the method of scenario analysis, a possible decrease in income is predicted by 5%, and according to the second scenario - by 8%. In view of the fact that financial risks associated with changes in the structure of assets, capital and liabilities of the enterprise lead to a decrease in financial stability, the scenarios of changes in profitability and the corresponding items of assets and capital are determined using the closeness of the correlation and the corresponding coefficients of elasticity (Table 3).

Table 3. Scenarios of changes in indicators of profitability, assets and capital of agricultural enterprises according to the coefficient of elasticity of obligations.

| Ratio of indicators | "Kernel-Trade" LLC | | PJSC "MHP" | | JSC "Astarta-Kyiv" | |
|---------------------|--------------------|-------------|-------------|-------------|--------------------|-------------|
| | Scenario 5% | Scenario 8% | Scenario 5% | Scenario 8% | Scenario 5% | Scenario 8% |
| Revenue/Equity | 0.044 | 0.071 | 0.028 | 0.046 | 0.081 | 0.130 |
| Revenue/Assets | 0.026 | 0.042 | 0.030 | 0.049 | 0.097 | 0.155 |
| Revenue/Expenses | 0.016 | 0.025 | 0.021 | 0.034 | 0.058 | 0.092 |
| Revenue/Cost | 0.022 | 0.035 | 0.034 | 0.055 | 0.061 | 0.098 |

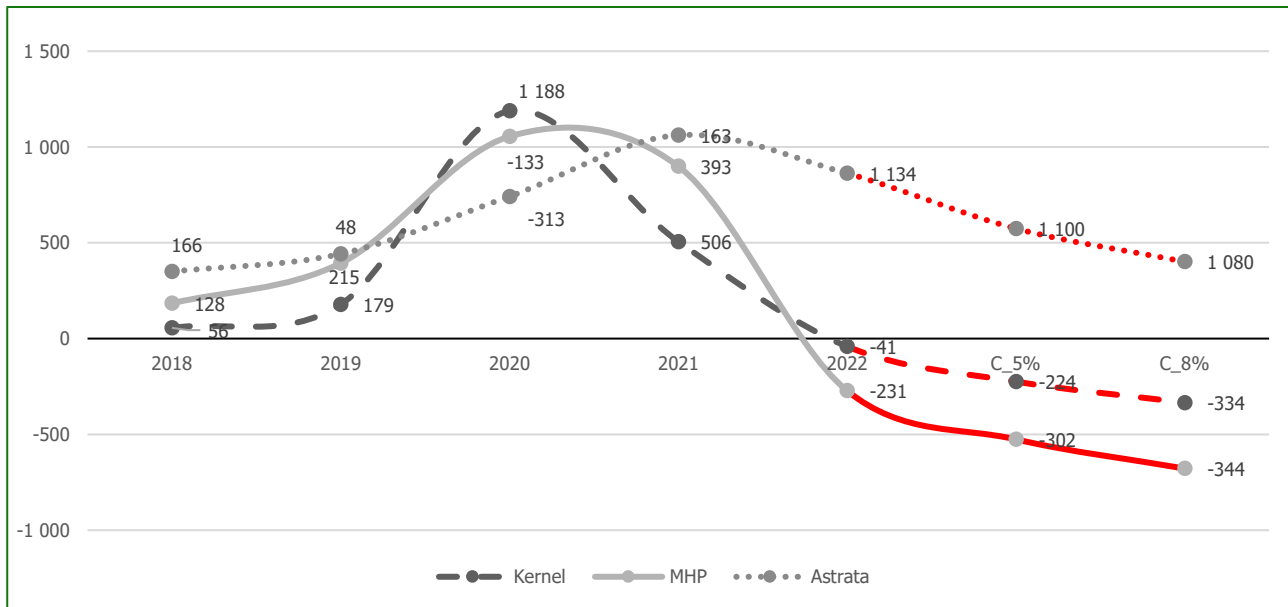
The conducted calculations proved the existence of a risk of reduction of assets and capital with a decrease in the profitability indicator of enterprises, especially this applies to AH "Astrata-Kyiv". As a rule, when budgeting, enterprises adopt an alternative version of the budget, taking into account the underperformance of the revenue part, and evaluating its ability to support the adopted development strategy by reducing certain items of expenses.

Compilation of the scenario analysis with the analysis of time series to identify trends, allowed to determine the specific weight of current assets and current liabilities, allowed to determine the main expected indicators characterizing the financial ability to ensure the continuity of business activities (Table 4). The results showed that at the enterprises of "Kernel-Trade" LLC and "MHP" PJSC, a 5% reduction in revenue will lead to losses (Figure 1), and "Astarta-Kyiv" JSC, despite its profitability, will face problems in financing its activities. The reduction in income and the possible unprofitability of the activity affected all indicators of profitability (Table 4). The risk of a lack of financing is hedged using strategic approaches to financial management with a mandatory assessment of the overall strategy of the enterprise's development, the creation of financial reserves, obtaining a credit line, diversification of sources of financing, financial planning during budgeting, and liquidity management.

Table 4. Results of the scenario analysis of agricultural holdings of Ukraine (fragment), USD million.

| Indicators | "Kernel-Trade" LLC | | PJSC "MHP" | | JSC "Astarta-Kyiv" | |
|---------------------------|--------------------|-------------|-------------|-------------|--------------------|-------------|
| | Scenario 5% | Scenario 8% | Scenario 5% | Scenario 8% | Scenario 5% | Scenario 8% |
| Receipts | 5 065 | 4 905 | 2 510 | 2 431 | 3 859 | 3 737 |
| Cost | 4 589 | 4 528 | 1 841 | 1 802 | 2 645 | 2 541 |
| Costs | 5 290 | 5 240 | 2 812 | 2 775 | 2 759 | 2 657 |
| Net profit | -224 | -334 | -302 | -344 | 1 100 | 1 080 |
| Own capital | 1 459 | 1 349 | 1 125 | 1 083 | 17 419 | 17 398 |
| Assets | 4 076 | 4 011 | 3 693 | 3 624 | 22 890 | 21 413 |
| Current assets | 2828 | 3 540 | 1963 | 2576 | 16531 | 16699 |
| Current liabilities | 762 | 741 | 466 | 471 | 21958 | 22644 |
| Profitability, % | -4.4% | -6.8% | -12.0% | -14.2% | 28.5% | 28.9% |
| Profitability of sales, % | 9.4% | 7.7% | 26.6% | 25.9% | 31.5% | 32.0% |
| ROE | -15.4% | -24.8% | -26.8% | -31.8% | 6.3% | 6.2% |
| ROA | -5.5% | -8.3% | -8.2% | -9.5% | 4.8% | 5.0% |
| CHOK | 2 066 | 2 799 | 1 496 | 2 105 | -5 427 | -5 945 |

Of course, this will be reflected in the size of equity capital, assets and financial capacity of the enterprise as a whole. Thus, enterprises will be forced to increase their net working capital (Figure 1) due to a reduction in investments, an adaptive credit policy, the involvement of short-term financing instruments, an increase in payables, and optimization of the cost of financing.


Figure 1. Net profit of enterprises according to the results of the scenario analysis, USD million.

The results of the analysis shown in Table 4 indicate that the agroholdings LLC "Kernel-Trade" and PJSC "MHP" gradually increased net working capital (NWC), acting according to the principle "long liabilities finance capital assets", therefore, even a drop in income under the two scenarios did not will lead to critical debt repayment problems. The situation looks more pessimistic for JSC Astarta-Kyiv because during 2021-2022 the company actively increased current assets due to an increase in accounts payable. We consider it expedient for enterprises to focus on development strategies taking into account previous results (Table 1, 2) which will in the future ensure the increase of profits, the development or expansion of a product niche, to concentrate on assessing the feasibility of costs and the search for low-cost financing. Pay special

attention to the income and expenses that form the operating profit, because it is the main indicator in the assessment and forecasts of many financial indicators of the strategic development and stability of the enterprise, it is oriented by banking institutions when assessing creditworthiness, and it is oriented by investors who will be ready to invest funds, regardless of certain risks.

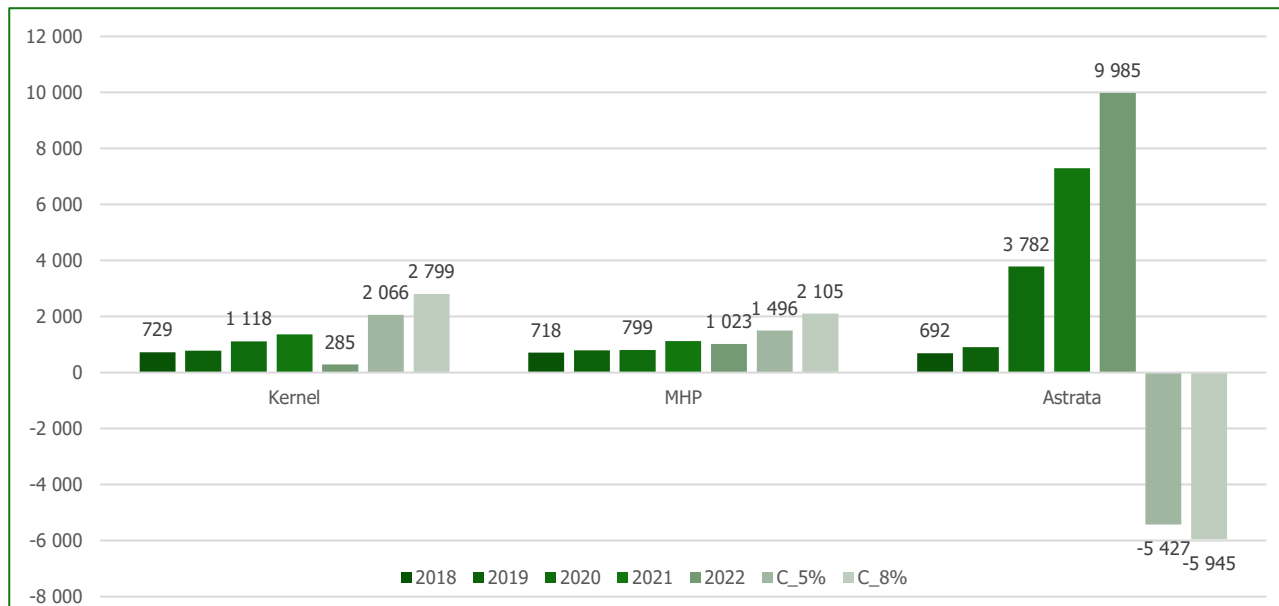


Figure 2. Graphical interpretation of changes in net working capital based on the results of the scenario analysis, USD million.

Research data show that the influence of the internal and external environment leads to changes in the economic environment of the enterprise, negatively affecting income, profitability, and solvency crisis due to dependence on external risks. The risk analysis based on the results of SWOT and PEST analyses also confirms the negative trends of influence on the financial strategy of development in the agricultural sector of Ukraine.

The third stage. Risk assessment and determination of its profile depend on the identified risk factors and the probability of losses from risks. The risk assessment was carried out using a statistical method, the main tools of which are the mathematical expected value of the studied quantity; dispersion, root mean square deviation, coefficient of variation, and probability distribution of the investigated random variable. The logic of forming a risk assessment has the following parameters: a risk profile formed as a result of a qualitative analysis based on SWOT and PEST methods (Tables 1, 2, 5), probabilities and expected losses (Table 5): $Q_k = \{A_i\}$ - possible risk events A_i dispersion.

The risk criterion is determined taking into account the company's strategic position regarding risk. The most appropriate is the use of the derived Bayes-Savage criterion, which is based on the position of relative pessimism and is aimed at minimizing the mathematical expectation of risk, which for each alternative is defined as the sum of the products of the probability of the realization of the scenarios by the corresponding amount of losses.

The weighted average level of risk of the development of enterprises in the agricultural sector of Ukraine is determined using dispersion analysis on the basis of a weighted average indicator, where the level of probability of occurrence of the risk will be weighted:

$$D_i = P(A_i) \cdot M(A_i), i = 1, m \tag{1}$$

where $P(A_i)$ - the probability of occurrence of risk events A_i ; $M(A_i)$ - the mathematical expectation of income (losses) upon occurrence of risk events A_i ; m - the number of types of risk.

Table 5. Assessment of the main risks of agricultural enterprises based on the results of SWOT and PEST analyses.

| Indicators | Risks | | | | | Average weighted level of development risk |
|-------------------------------|---------------------------------|---------------------------|---------------------|-------------------------|------------------------------|--|
| | Reduction of production volumes | Deterioration of solvency | Reduction of profit | Risk of hopeless losses | Risk of loss of sales market | |
| "Kernel-Trade" LLC | | | | | | |
| Expected losses, UAH thousand | 65.05 | 9.33 | 26.99 | 18.67 | 42.15 | 0.36 |
| Probability | 0.25 | 0.12 | 0.25 | 0.25 | 0.23 | |
| Dispersion | 16.26 | 1.12 | 4.05 | 4.67 | 9.69 | |
| PJSC "MHP" | | | | | | |
| Expected losses, UAH thousand | 21.81 | 6.78 | 11.78 | 8.22 | 15.64 | 0.13 |
| Probability | 0.24 | 0.08 | 0.27 | 0.26 | 0.15 | |
| Dispersion | 5.23 | 0.54 | 3.18 | 2.14 | 2.35 | |
| JSC "Astarta-Kyiv" | | | | | | |
| Expected losses, UAH thousand | 30.50 | 10.20 | 32.08 | 19.41 | 22.50 | 0.23 |
| Probability | 0.20 | 0.25 | 0.27 | 0.17 | 0.11 | |
| Dispersion | 6.10 | 2.55 | 8.66 | 3.30 | 2.48 | |

The definition of risk limits is caused by the need to form an acceptable set of alternatives for justifying the strategy: alternatives are chosen that fall within the acceptable limits in terms of risk, that is, a set of alternatives is formed from which an acceptable alternative is selected. To identify areas of risk, the overall risk factor is determined, which is expressed as the ratio of the loss of net assets to total assets. Summarizing the results of the analysis of the studied enterprises allowed us to highlight:

- the area of minimal (acceptable) risk - the risk factor is in the range of 0-0.3, characterized by a level of losses that does not exceed the amount of net profit, the minimum estimated profit is guaranteed;
- the area of increased (acceptable) risk - the risk coefficient is in the interval 0.3-0.6, the level of losses does not exceed the size of the estimated profit, the lower limit of this zone is the break-even point;
- area of high risk - the risk coefficient is in the range of 0.6-0.8, possible losses exceed the amount of estimated profit but do not exceed the amount of expected income;
- the area of unacceptable (catastrophic) risk - the risk coefficient is in the range of 0.8-1. Losses of assets exceed the amount of expected income and can reach a value equal to the entire property status. The lower limit is the point of bankruptcy.

According to the results of risk modelling, the weighted average level of development risk of each agricultural holding is different: "Kernel-Trade" LLC has an "average" level of risk (0.36), "MHP" PJSC (0.13) and AH "are included in the "insignificant" group. Astrata-Kyiv" (0.23). We consider the absence of high, maximum and critical risks of industry-forming enterprises in Ukraine to be a positive result. Accordingly, the financial strategies of agricultural holdings will differ. Based on the fact that the activity of the enterprise in the conditions of market relations is risky and creates a possible situation of danger, it is necessary to calculate the losses from the risk, that is, the negative deviation from the expected profit. The determination of the mathematical expectation of losses from risk is based on the study of cash flows, the identification of their inherent uncertainties and the forecasting of possible losses. These losses can be established in various ways - from informal judgments to a complex economic and statistical study with a retrospective analysis of losses associated with risky situations that create a risk profile of the enterprise's development.

The fourth stage. Choice of financial strategy alternatives taking into account risk. Based on the fact that the risk indicators reflect the results of assessing the adequacy of management decisions to the adopted goals, the risk indicator is defined as an indicator of an appropriate financial strategy alternative. The high degree of risk at the stage of choosing a financial strategy in the conditions of instability in the management of agrarian enterprises determines the need for its assessment at all stages of its development and implementation. The process of choosing a financial strategy alternative is based on a scenario approach, the use of which allows you to justify the optimal choice. After studying the threats and opportunities, assessing the level of risks, and conducting a scenario analysis, it will be advisable to decide on a financial development

strategy that will ensure the continuous operation of the enterprise in the future. When choosing an enterprise's development strategy, it is advisable to assess the enterprise's financial potential in accordance with the implementation of the overall development strategy. The choice of an appropriate option of a strategic alternative involves an assessment of the situational behaviour of the indicators, which reflects, on the one hand, the behaviour of the business entity, and on the other hand, the state of the elements that determine the value of the business entity, namely net assets and net liabilities (Kostyrko et al., 2022). A quantitative assessment of the risk of choosing financial strategy alternatives is proposed to be carried out on the basis of the "profitability - risk" optimization criterion, which is a measure of expected profitability and cost.

Based on the concepts of value and continuity, the market value indicator, adjusted for risk factors and financial stability reserves by combining two-factor systems, is recommended as an indicator of choosing a financial strategy $R_{K_{t+i}}$ and K_t (coefficients of return on equity and certainty of expected net cash flow) and K_t (coefficients of return on equity and certainty of expected net cash flow) and (Kostyrko, 2010):

$$Vr_t = Vo_t + \sum_{i=1}^t \frac{E_t[(R_{K_{t+i}} - W) * Vo_{t+i-1}] * K_i - R_i^{ep} * P_i^{er}}{(1 + S_{br})^i} + \frac{E_t[(R_{K_{t+T+1}} - W) * Vo_{t+T}] * K_{t+T+1} - R_{t+T+1}^{ep} * P_{t+T+1}^{er}}{W * (1 + W)^T} \quad (2)$$

where Vo_t – the book value of the company's net assets at the moment of time t ; $E_t[\]$ – expected values based on what is available at the time t information; $R_{K_{t+i}}$ – return on equity of the enterprise for the period $t + i$; $R_{K_{t+T+1}}$ – return on equity for the period after the forecast period; Vo_{t+i} – the book value of the enterprise's net assets at the end of the forecast period; W – the risk-free interest rate; S_i – coefficients of certainty of the expected net cash flow; R_i – the size of the formed reserves of financial stability; P_i – specific cost of reserve coverage.

The second component of this model represents the difference between the market and book value of the enterprise at the end of the forecast period. The proposed model differs from the traditional model in the following ways:

- the expected net cash flow is adjusted for the degree of its certainty;
- the amount of net cash flow is reduced by the value of the formed reserves;
- the risk-free rate is used for discounting, as opposed to the industry average (or the weighted average cost of capital, which includes a risk premium).

The risk assessment of a strategic alternative involves the determination of such risk parameters as the risk profile (a set of risky events) formed on the basis of the results of a qualitative analysis, expected costs and the probability of occurrence of risky events. When choosing a financial strategy, or making a decision regarding their combination, preference is given to a strategy with minimal risk. The main criterion is profitability, so it is important to control the ratio of profitability - risk of each strategic alternative. Making decisions with a high level of risk is possible provided that the implementation of a strategic alternative does not lead to the bankruptcy of the enterprise. The risk assessment of agricultural enterprises is shown in (Table 5). At this stage, it is important to analyze the sensitivity of financial strategy alternatives, which is proposed to be carried out on the basis of the net income indicator, since it is a key factor affecting the market value of the enterprise. The sensitivity analysis allows the assessment of future changes and the nature of the behaviour of significant financial indicators, as well as their sensitivity to changes in the parameters of the financial strategy depending on the stage of the enterprise's development. On the basis of the matrix (Figure 2), the selection of priority actions regarding the implementation of the financial strategy is carried out, taking into account the risk.

| Strategy | Goal | Actions | Scope of application |
|----------------------------|--|---|---|
| Financial stability | Ensuring financial stability and sufficient liquidity | Issue of bonds, increase in reserves, decrease in long-term liabilities | Use in a period of economic instability |
| Growth | Business expansion, increase in revenue and profit | Investment in new projects, purchase of assets, attraction of investments | Are used by companies seeking active development |
| Risk management | Minimizing financial risks and ensuring stability | Investment diversification | Important for companies operating in volatile markets |
| Debt management | Effective management of long-term and short-term liabilities | Refinancing, debt consolidation. lower interest rates | Companies that have significant debts |
| Profit maximization | Increase in profit | Cost reduction, tax optimization, revenue maximization | Used in business to increase profitability |

Figure 2. Matrix of priority actions regarding the areas of implementation of the financial strategy of agrarian enterprises.

Summarizing the results of the research and calculations regarding the expected benefits of the decisions made, the following conclusions were drawn regarding the choice of strategy: for "Kernel-Trade" LLC, the "financial stability" strategy is appropriate, since the integral indicator of financial stability is greater than one, and the integral risk assessment is approaching high (0,36), provided that attention is focused on the use of effective risk management methods; PJSC "MHP" - the strategy of "maximizing profits", JSC "Astarta-Kyiv" - the strategy of "debt management" with the compilation of the "financial stability" strategy.

DISCUSSION

In a scientific study (Neyter, 2022) an in-depth analysis of direct losses and indirect losses in agriculture was proposed, but the tools for choosing the financial strategy of agrarian enterprises in conditions of uncertainty were not noted at a sufficient level. Scientists (Alain and Sadoulet, 2020) offer the main concepts of the enterprise development strategy taking into account market risks, but the minimization of risks in the conditions of military operations and conflicts is not fully detailed. Scientists (Chen and Wang, 2023) proposed a powerful system of integrating indicators for modelling the integral assessment of business but did not suggest ways to improve the performance of agribusiness in the conditions of an unstable external environment. Scientific intelligence (Vasylchak et al., 2022) details a set of indicators for financial and economic analysis but does not offer ways to improve the quality of agricultural sector management. In the scientific work (Icon et al., 2022), strategies for the decarbonization of agricultural enterprises are proposed, which is undoubtedly very important for agribusiness. Indeed, the decarbonization strategies of agricultural enterprises are focused on reducing greenhouse gas emissions through the optimization of technological processes, changes in production methods, and the introduction of the latest environmental practices. Important aspects are increasing the efficiency of resource use, reducing energy consumption, transitioning to organic farming, and implementing carbon conservation technologies in soils. However, the implementation of decarbonization strategies may require significant initial investment in new technologies and equipment, which is a financial burden for small and medium-sized enterprises, especially in the current conditions in which modern Ukraine is located.

Scientists (Abrego-Perez et al., 2023) identified the threats of risks in the context of financial support of enterprises and planning their needs in financial resources, which is one of the key problems in the modern business environment. Effective financial planning allows enterprises to develop stably, invest in production processes and maintain competitiveness. However, the authors did not take into account that there are also certain disadvantages and risks that arise due to improper planning or instability in the market. For example, inaccurate forecasts can lead to a shortage of financial resources, which will complicate production processes, as well as affect the timeliness of fulfilling obligations to suppliers and creditors. Scientists (King et al., 2021) have suggested that the diversification of the income of enterprises is undeniably useful, which contributes to the improvement of credit quality and effective management of credit risks, as it provides more stable financial flows and reduces dependence on a single source of income. However, the authors did not take into account that diversification can also have its disadvantages. Involvement in new markets or areas of activity may require significant investments, which increases the financial burden on the enterprise and increases risks. If the new areas are not sufficiently profitable or require specialized knowledge, the enterprise may face difficulties in managing these assets, which will negatively affect the overall financial stability and may increase credit risks. That is why our comprehensive study on risk analysis as a tool for choosing the financial strategy of agricultural enterprises in the context of uncertainty in the context of methods, evaluation, and audit is important and eliminates those gaps and fragmentation in the scientific studies we considered above.

CONCLUSIONS

The study revealed the priority directions for improving the analytical toolkit for assessing the risks of impact on the financial ability to ensure the continuous activity of agricultural enterprises and the choice of alternatives to their financial strategy in conditions of instability. The use of a comprehensive approach to analytical risk assessment based on a combination of scenario analysis methods and sensitivity analysis of profitability indicators to risk factors provides an opportunity to generate information on trends in expected indicators of financial stability and justify the choice of a financial strategy for the development of agricultural enterprises depending on the risk. In contrast to traditional methods of assessing the risk of enterprise activity, based on quantitative analysis, in the proposed approach the emphasis is placed on the assessment of expected losses from risky events based on the study of cash flows, the identification of uncertainties inherent in them and the forecasting of possible losses in various ways - from informal judgments to economic and a

statistical study with a retrospective analysis of losses associated with risky situations, which are the basis of the risk profile of the enterprise's development.

The emphasis of the research is on methods of identification, assessment and ways of responding to or preventing risk. The indicator of the optimal choice of the financial strategy for the development of enterprises is determined by the indicator of market value, adjusted for risk factors and potential reserves of financial ability, in order to ensure continuous activity in conditions of instability, while controlling the ratio of profitability - risk, as a measure of expected profitability and value, in relation to each strategic alternative, taking into account multiple risk events. The study of a separate strategic alternative makes it possible to predict the level of activity risk by analyzing the sensitivity of financial strategy alternatives, based on the net income indicator, as a key factor affecting the market value of the enterprise, while obtaining the most optimal version of the financial strategy of the enterprise's sustainable development.

Prospects for further research on the topic of comprehensive risk analysis as a tool for choosing the financial strategy of agrarian enterprises in conditions of uncertainty open wide opportunities for the development of new approaches and methods that will help agrarian companies adapt more effectively to the changing economic environment. Given the specificity of the agricultural sector, where risks are not only related to financial aspects but also to natural, climatic and market factors, the study of risk assessment methods becomes key to the further development of this industry. Comprehensive risk analysis involves taking into account various aspects of the activities of agricultural enterprises, starting from financial risks associated with fluctuations in the prices of raw materials and products, to weather conditions that can affect productivity. Further research in this direction may focus on the development of risk assessment models that include a multivariate approach. This means that the analysis must take into account various factors at the same time, allowing enterprises not only to determine the probability of a certain risk but also to predict its potential impact on the financial result. In this context, there is a need to use modern analytical tools, such as artificial intelligence, big data and machine learning, which will allow more accurate assessment of risks and predict their development scenarios. The methods of comprehensive risk analysis in the agricultural sector need further improvement, as traditional approaches, as a rule, do not take into account the specific risks of this sector. For example, agricultural enterprises often face long-term risks that are difficult to predict due to the high level of uncertainty. Therefore, a promising direction of research is the development of models capable of integrating not only economic data but also information about natural disasters, climate change or new technological trends. This will allow agricultural companies to more reasonably choose financial strategies that will not only protect them from potential losses but also ensure sustainable growth. Another important research perspective is the development of risk audit tools that will allow agricultural enterprises to regularly monitor their activities in order to identify potential threats. In crisis conditions and with a high level of uncertainty, the risk audit acquires special importance, as it allows timely identification of weak points in financial strategies and prompt response to changes. Further research in this direction can focus on the development of automated audit systems that will be based on analytical algorithms and help farmers assess risks in real-time.

ADDITIONAL INFORMATION

AUTHOR CONTRIBUTIONS

All authors have contributed equally.

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CONFLICT OF INTEREST

The Authors declare that there is no conflict of interest.

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Костирко Л., Соломатіна Т., Костирко Р., Зайцева Л., Чернодубова Е.

КОМПЛЕКСНИЙ АНАЛІЗ РИЗИКУ ЯК ІНСТРУМЕНТ ВИБОРУ ФІНАНСОВОЇ СТРАТЕГІЇ АГРАРНИХ ПІДПРИЄМСТВ В УМОВАХ НЕВИЗНАЧЕНОСТІ: МЕТОДИ, ОЦІНКА, АУДИТ

У сучасних умовах непередбачуваності змін економічного середовища забезпечення безперервності господарювання аграрних підприємств вимагає адекватного усвідомлення необхідності вибору стратегічних векторів їхнього розвитку на основі застосування аналітичного інструментарію оцінки ризику. У статті розкрито передумови розвитку методичного забезпечення комплексного аналізу ризику та обґрунтовано сценарії вибору фінансової стратегії аграрних підприємств в умовах невизначеності змін економічного середовища.

Мета дослідження полягає в обґрунтуванні теоретико-методичних засад щодо комплексного аналізу ризику як інструменту вибору фінансової стратегії розвитку аграрних підприємств в умовах невизначеності, яка вирішується через дослідження передумов оцінки ризиків діяльності аграрних підприємств в умовах невизначеності тощо.

З метою формування інформаційної платформи щодо оцінки наслідків ризикових подій для вибору векторів фінансової стратегії побудовано узгоджену систему індикаторів ризику. Ідентифіковано вплив факторів внутрішнього та зовнішнього середовища на ризики діяльності аграрних підприємств. Для ранжування стратегічних альтернатив розвитку підприємств запропоновано послідовність оцінки ризику зниження прибутковості підприємств. Обґрунтовано процедури сценарного аналізу тенденцій очікуваних фінансових показників. Як узагальнюючий індикатор вибору фінансової стратегії розвитку підприємств запропоновано показник ринкової вартості, скоригований на чинники ризику та резервів потенціалу фінансової стійкості.

Практику використання аналітичних методів оцінки ризиків при виборі фінансової стратегії продемонстровано на прикладі діяльності вітчизняних агрохолдингів ТОВ «Кернел-Трейд», ПрАТ «МХП», АХ «Астарта-Київ» за 2018-2022 роки.

Ключові слова: аграрні підприємства, аналіз, аудит, невизначеність, безперервність, комплексний підхід, оцінка ризику, фінансова стійкість, вибір фінансової стратегії

JEL Класифікація: M41, O13, Q14