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THE IMPORTANCE OF THE FINANCIAL AND CREDIT MECHANISM IN ENSURING THE SUSTAINABLE DEVELOPMENT OF ENTERPRISES

ABSTRACT

The purpose of the study is to determine the features of financial and credit support for the sustainable development of enterprises under the challenges of war and crisis and to develop proposals for improving the financial and credit mechanism of enterprises (FCME) in conditions of dynamic threats. The research methodology included the following methods. The method of critical analysis is used to study the cross-dynamics of statistical data of the period before and after the start of full-scale aggression. The method of analysis and synthesis made it possible to propose approaches to the reconstruction of the FCME architecture. A method of comparative research of trends is proposed.

The tasks of the financial and credit mechanism are defined. It is indicated that FCME should be considered as a dynamic adaptive system that can acquire architectural features of a network structure. It is indicated that the uncertainty of the market environment and the risks of war reduce the level of determinism in achieving a strategic goal. Therefore, the path to the specified goal should be adaptive. Deviations from the planned goal must be corrected by operational management tools. It is indicated that it is expedient for any FCME architecture to assess the level of stability not only by absolute or relative indicators but by their time derivatives. This will make it possible to quickly adjust the company's financial policy. An approach that made it possible to substantiate the choice of measures of operational regulation of economic activity based on deviations from the defined path of development was proposed. This approach also makes it possible to assess the rate of change in the effects of dynamic war risks.

Keywords: financial and credit mechanism, sustainable development, structure of financial resources, war and crisis risks, uncertainty, operational management, deviation regulation

JEL Classification: G30, G33, G39, H56, O10

INTRODUCTION

In conditions of uncertainty and significant external challenges, one of the most difficult problems of management is to ensure the stability of management as the main prerequisite for the sustainable development of the enterprise. The effective use of financial and credit instruments can ensure the stability of the enterprise as a result of the sustainable process of extended reproduction, which depends, first of all, on the appropriate use of the financial and credit mechanism and its ability to ensure the stability of the financial condition of the subject of economic activity. An ineffective financial and credit mechanism, as well as inappropriate use of its tools and levers, can lead to the destabilization of the enterprise. The financial and credit mechanism is one of the basic components of ensuring the functioning of the enterprise since, without proper financial management, it is impossible to ensure the entire cycle of production - from resource provision to the sale of products or the provision of services. The harsh and dynamic challenges of the war, the economic crisis cause a lack of financial resources of the subjects of economic activity, complications with the return of received loans, as evidenced by the volume of current accounts payable, a decrease in the level of capitalization and a lack of long-term lending resources. This requires increased management

attention to reforming and functioning of the enterprise's financial and credit mechanism.

At the same time, even the understanding of the financial stability of the enterprise, as a prerequisite for its sustainable development, will be different in peacetime and under threats of war. The task of ensuring the sustainable development of an enterprise in conditions of economic crisis and war relegates to the background the problems of efficient use of resources or even achieving the best financial results, and the main problem of the functioning of the financial and credit mechanism becomes achieving a balance between the goals of the subject of economic activity and the effects of the external environment.

The significant dynamism of war threats makes it difficult to implement financial and credit relations established during peacetime between subjects of economic activity and necessitates rapid adaptive changes in the financial and credit mechanism. Such permanent changes can ensure the sustainable development of the enterprise. However, this, in turn, requires a review of the methods of achieving the defined goals of the enterprise since the external environment in conditions of war and crisis constantly makes significant changes to strategic and even tactical plans. Therefore, the achievement of the strategic goal and the acquisition of the functioning of the enterprise of a sustainable nature requires not the peacetime observance of strategic and tactical development plans but the operational regulation of economic activity conditioned by deviations from the determined path of development (Chowdhury et al., 2022). This requires the clarification of theoretical studies on the indicated issues.

LITERATURE REVIEW

A significant number of scientific works are devoted to various aspects of the use of the financial and credit mechanism, in particular, to ensure the sustainable development of the enterprise. There are certain disagreements in scientific approaches to solving this problem. For example, scientists of developed countries do not single out the financial mechanism as a subject of research and focus their attention on financial instruments, methods, and methods of influencing subjects of economic activity, as well as their relations with state institutions, commercial structures, and society. Domestic scientists also have certain disagreements, in particular in the interpretation of the concepts of "financial mechanism" and "credit mechanism". For example, in the article by Horobets (2021), the financial mechanism is interpreted as a system of methods, management structures and levers that should contribute to the sustainable growth of added value. At the same time, according to the text of the Horobets (2021) article, the financial mechanism is understood as the financial and credit mechanism since the author includes the regulation of "banking and commercial lending" among its main functions. The thesis of the article by Horobets (2021) about the continuity of the process of rebuilding the architecture of the financial mechanism is expanded in the presented study. In the article by Strapchuk (2020), the credit mechanism is considered a component of the mechanism for ensuring sustainable development, which is refuted in many scientific works. In particular, Kudriavtsev (2024) points out that the mechanisms are only components of the system of ensuring the sustainable development of subjects of economic activity. Some authors consider the financial and credit mechanism only as a function of the organizational and economic mechanism aimed at the management of financial support of production and management processes (Yepifanova, 2019; Khakhaliev, 2024). Individual scientists (Liga zakon, 2006), even mentioning in their writings the need for a financial mechanism to perform the function of credit management, do not indicate the need to define this mechanism as a financial and credit one. At the same time, Bluzniuk et al. (2019) point out that in the conditions of the enterprise, financial and credit relations, due to the common monetary nature, interact one after another and form a complete financial and credit mechanism. The requirements for the effective functioning of the financial and credit mechanism specified in the article by Bluzniuk et al. (2019) are necessary not only in peacetime but also in wartime.

In the scientific literature, there are also disagreements regarding the interpretation of the concepts of "financial stability" and "sustainable development" of the enterprise. In particular, Chowdhury et al. (2022) and Khakhaliev (2024) point to the "permanent nature" of economic activity as a necessary and sufficient sign of the financial stability of an enterprise. However, Netudyhata (2020) defines financial stability as the ability of the subject of economic activity to financially ensure its continuous and extended functioning. That is, the study's focus (But & Netudyhata, 2020) is on optimizing resources and ensuring their sufficiency. This does not reflect the dynamic impact of war risks when a sudden and significant threat can interfere with the continuous functioning of the enterprise, and therefore, financial support for the neutralization of the effects of such threats becomes one of the main tasks of the financial and credit mechanism. The importance of anti-crisis management for ensuring the sustainable development of enterprises and the conditions of war for neutralizing threats is indicated in the article by Sharapov (2023).

Solodovnik (2023) proposed a comprehensive approach to the definition of the concept of "financial support for sustainable development", which combines different views of scientists on this issue. Also, in the conditions of a chronic lack of financial

and credit resources, a public-private partnership is proposed as a rational direction to reduce lending risks. Investigating the dynamics of financial and economic indicators, Sereda and Kushal (2021) points out that unlike macroeconomic indicators such as GDP, the indicators of enterprises undergo much greater fluctuations, which creates a certain blurring in the interpretation of the concept of "financial support for sustainable development". Marusiak (2021) also points out that even the use of traditional peacetime performance indicators of the financial mechanism under dynamic changes in external influences to determine its effectiveness is difficult. In particular, it is indicated that the indicators that take into account the level of repayment of credit debt in the conditions of a lack of operational, financial resources for production activities, and, accordingly, making a profit contradict the indicator of the rate of profit.

In Rohov's (2018) work, which has already become a classic, the theoretical basis of financial mechanisms for the sustainable development of enterprises and corporations was introduced. It is indicated that the specified mechanisms form a complex interrelated system, which includes tax, investment, credit and other mechanisms, and only their systematic consideration will reveal the multiplicity of their factors. At the same time, the economic crisis and the war changed the importance of the elements of the specified system. Given the realities of today, the main theses of Rohov's article (2018) are used in the presented study.

In a thorough study by Perevozova et al. (2023) it is stated that the process of attracting financial resources of the enterprise increases the level of financial risks and the crisis significantly deepens the danger of lending. An unstable external environment reduces the financial stability of enterprises and, accordingly, reduces the possibility of their sustainable development. This is taken into account in the presented article.

Often, researchers do not pay attention to the need to take into account dynamic external influences when developing proposals to increase the efficiency of management of financial resources of subjects of economic activity and the importance of operational management as a method of adapting the financial strategy to the challenges of the external environment (Kuznyetsova et al., 2024; Karpova, 2020; Perederii, 2023).

Even pointing out the dynamism of external influences and, as a result, the inability to reconcile the tasks of financial provision of current needs and the goals of long-term planning, Moiseiev (2024), researching strategies for optimizing financial resources, does not take into account the rapid changes in the main financial indicators of the enterprise.

In some scientific works that were published before the start of a full-scale war, it is rightly indicated that dynamic changes in the economy are a prerequisite for the transformation of the financial and credit mechanism of enterprises Vdovenko (2020), but at the same time, the need to take into account the pace of these transformations, the importance of which increased war, was not indicated.

Stepanenko (2021), proposing as a method of ensuring sustainable development a cross-functional approach capable of identifying potential threats and predicting their impact on the functioning of the financial and credit mechanism in a strategic perspective, also ignores the dynamic nature of war risks, their mutual influence, which reduces the relevance of forecasts. This problem was studied in detail in the presented article.

Zolkover et al. (2023) and Kostyrko and Koniev (2024) indicate that the relevance of the financial strategy of sustainable development, the implementation of which should be aimed at the financial and credit mechanism of enterprises, is significantly reduced in the absence of relevant market forecasting approaches in war conditions. It is also noted that there is a lack of research on world experience in this direction. This substantiates the importance of developing directions for increasing the level of relevance of the specified strategy.

In the articles by Nosyriev et al. (2020) and Shtantsel et al. (2024), the strategic perspective of ensuring sustainable development is defined as a probabilistic characteristic that depends on the level of efficiency of the financial and credit mechanism and external threats. This is also a reason for developing approaches to determining the specified characteristic.

In Calinescu's article (2020), the problem of achieving strategic goals in an unstable external environment is revealed. The importance of defining, monitoring and recording financial and economic indicators, which are used to evaluate the development of the enterprise not only with regard to the achievement of strategic goals but also during operational activities, is also emphasized (Calinescu, 2020; Chichulina et al., 2024). This thesis is developed in the presented article. The importance of the adaptive function of the financial mechanism during the instability of the market environment during the war, as a necessary factor for ensuring the continuous development of the enterprise in these conditions, is also noted in the article by Chunytska and Pozdnyakova (2022).

Vdovenko (2020) notes that the financial and credit mechanism of enterprises must change, and, at the same time, among the factors of external influence, the crisis factors are not indicated as a factor that determines the need for changes.

Studying the functioning of the financial and credit mechanism of the agrarian industry, Vdovenko (2020) notes its peculiarity in acquiring financial stability - state support, which allows agricultural enterprises to reduce the risks of external lending. This causes a decrease in the share of bank loans in agrarian businesses relative to the total volume of enterprise lending. The sectoral differences in the functioning of the financial and credit mechanism are indicated in the presented article.

Sectoral differences in financial credit mechanism are indicated in the articles Sukhostavets (2020), where the peculiarity of the agricultural sector, which relies to a greater extent on state financial support, is indicated; in the study of Vdovenko and Vdovenko (2022), where it was noted that small agricultural enterprises, the majority of which are in the agricultural sector, are actually left out of the attention of systemic lenders. Demianenko's article (2023), which is devoted to industrial enterprises, points out the inappropriate rates of renovation of long-term assets due to the insufficient level of providing industrial enterprises with financial resources. Zhytar and Yaroshchuk (2020) note that the adaptive capacity of the financial and credit mechanism of industrial enterprises is significantly reduced due to their low investment attractiveness and the increase in average interest rates of banks, which complicates the management of creditworthiness. The specified direction is considered in the presented article.

The given review of literary sources indicates significant scientific developments on the specified issues. At the same time, the importance of the tasks, the fulfilment of which is provided by the financial and credit mechanism, and the peculiarities of its formation and application in the conditions of war and economic crisis require the clarification of both the theoretical provisions of the specified scientific direction and the development of practical recommendations regarding the functioning of the specified mechanism. This mechanism in the conditions of dynamic challenges should not be unchanged over time and needs immediate improvement.

AIMS AND OBJECTIVES

The purpose of the study is to determine the financial and credit support for the sustainable development of enterprises under the challenges of war and crisis and to develop proposals for improving the financial and credit mechanism of enterprises in conditions of dynamic threats. To achieve the goal, the following tasks are solved:

- changes in the structure of sources of financial and credit support are investigated;
- trends in the financial indicators of enterprises are studied;
- directions for the integration of strategic and operational approaches to the functioning of the financial and economic mechanism under dynamic threats are determined;
- approaches to rebuilding the architecture of the financial and economic mechanism of the enterprise are offered.

METHODS

When conducting the research, general and special methods of scientific knowledge were used. The method of critical analysis was applied to study the cross-dynamics of statistical data of the period before and after the start of full-scale aggression, which indicated a significant change in the functioning of the financial and credit mechanism of enterprises. The method of analysis and synthesis made it possible to propose approaches to restructuring the architecture of the financial and economic mechanism of the enterprise. Using the method of logical analysis, it is proposed to assess the level of stability and, accordingly, the prerequisites for achieving sustainable development of the enterprise not only by absolute or relative indicators but by their derivatives in time, which made it possible to quickly adjust the financial policy of the enterprise. A method of comparative research of trends was proposed, which made it possible to substantiate the choice of measures of operational regulation of economic activity based on deviation from the determined path of development.

RESULTS

In the organizational and economic mechanism of the functioning of the enterprise, scientists distinguish financial and credit mechanism. It is not always appropriate to single out the credit mechanism since the financial resources of the subject of economic activity are required for the effective functioning of the financial system, and the company often lacks its own funds, so management must also rely on bank lending, commercial loans, foreign investments, etc. A systemic combination of these mechanisms acquires special importance in periods of significant external dynamic influences when

the efficiency of financial management begins to play an important role in the functioning of the enterprise (Blikhar et al., 2022; 2024). This, during the conduct of this study, gave grounds to interpret the financial and credit mechanism as a complex system, which is a substructure of the organizational and economic mechanism, which, based on the economic indicators of the enterprise's activity, as well as on specialized tools, techniques and methods, performs the functions of strategic and operational manoeuvring by external and internal financial resources, the formation of an effective structure of financial and credit support and regulation in the distribution and use of resources, the creation of goods and services, the organization of the settlement activity of production departments.

The specified functions determine the architecture of the financial and credit mechanism and, accordingly, the elemental structure of its system, which in a generalized form can be presented as subsystems: financial management methods (management of the movement of financial resources, their optimization, regulation of the relevant financial indicators of the enterprise, accounting, analysis, audit of financial resources); financial instruments and levers; credit instruments and leverage; resource support, operating with indicators: profit, depreciation deductions, budget subsidies, loans, investments, credit obligations, etc.; derivative financial instruments. Financial management methods in crisis conditions should, as is known, ensure the predominant self-financing of enterprises and/or positive dynamics of the ratio of equity and liabilities.

Specifying the subsystem of credit levers, it is necessary to point out the importance in crisis conditions of ensuring the optimization of the manoeuvring of volumes and types of lending to enterprises, which determines not only the consistency of the dynamics in the time of acquisition of loans with the needs of enterprises in finance, but also the forecasting and minimization of interest rates (with a predominant focus on state and not commercial loans), ensuring favourable terms of credit agreements, reducing risks for investment, ensuring prospects for the development of the enterprise for the formation of investment income not only in materials and equipment but, first of all, in intangible assets.

Derivative financial instruments must, if necessary, form the acquisition and manoeuvring of futures, options, swaps, or, which is a common practice of Ukrainian construction companies - attracting public funds for housing construction. Given the unconditionally complex nature of the functioning of the financial and credit mechanism, among the tasks of its elements, the following can be defined as the most important:

1. Provide resources for every production, organizational and business process of the enterprise in a timely manner, in the appropriate amount and according to the defined nomenclature.
2. Effectively implement appropriate methods and tools for the rational use of finance functions to ensure the proper level of production and economic and financial relations between the objects of the enterprise's organizational and economic system.
3. Establish and coordinate direct and reverse financial and informational connections between objects of the enterprise's organizational and economic system for its sustainable functioning.
4. Taking into account external and internal influences, realistically assess one's own capabilities to manoeuvre external and internal financial resources in an operational manner to ensure the sustainable development of the enterprise.
5. To ensure a holistic approach to the formation and use of all financial flows.
6. To implement the search and use of the most appropriate sources of financing.
7. To form an optimal dynamic structure of funding sources.
8. To implement variable tactics for achieving strategic goals for changes in external influences, in particular, for the use of an event tree for implementation.

Point 4 indicates that the conditions of the war did not change certain areas of ensuring the effective functioning of the financial and credit mechanism: optimization of the structure of assets, liabilities, and capital in view of the cost and risks of acquiring financial resources; determination of the best structure of sources of credit, terms, forms, methods of obtaining and repaying external loans, which will not lead to an increase in financial risk but will provide an appropriate level of stability, will ensure the possibility of achieving a balance between the goals of the subject of economic activity and the effects of the external environment, will improve the financial indicators of the enterprise, will ensure the highest level of profitability of the use of loan capital, taking into account military, economic and market risks.

In order to effectively realize the possibilities of the financial and credit mechanism, it is necessary to ensure the relevance of financial planning, which, accordingly, should be based on the realism of forecasts of external influences. However, a feature of the effects of war on the functioning of the enterprise is their high level of uncertainty.

However, a feature of the effects of war on the functioning of the enterprise is their high level of uncertainty. This makes it difficult to ensure the sustainability of the development of enterprises. In peacetime, the sustainability of development was defined in accordance with the Sustainable Development Goals, in particular, as increasing the economic capabilities of enterprises in view of social, environmental and other needs of society (Kuznyetsova et al., 2017; Strapchuk, 2020; Trusova et al., 2019).

The high level of war risks requires a certain modification of the definition of sustainability, since the achievement of the social goals of sustainable development is possible only with prolonged operation of the enterprise.

In view of the above, the sustainability of the development of enterprises in the conditions of significant challenges of the war can be defined not only as the presence of prerequisites to continue production activities continuously, without significant fluctuations in the volume of production, but even as the ability to survive.

Therefore, for the sustainable operation of the enterprise in the conditions of war, point 1 acquires significance, and this requires the evaluation of indicators that condition or characterize the fulfilment of the task of providing the enterprise with resources, in particular, dynamics: volumes of lending to subjects of economic activity, average annual interest rates on bank loans, capital investments in material and intangible assets, capital investments by sources of financing, the ratio of equity and liabilities. At the same time, under the dynamic effects of war, it is necessary to evaluate not only the study of the absolute values of the indicated indicators but also the comparison of the rates of their change over time since a satisfactory ratio of factors of past periods does not mean their satisfactory ratio over time, and this is important in view of ensuring sustainable development of enterprises.

Scientists distinguish between a directive financial and credit mechanism and a regulatory mechanism. The first one is used to regulate the relations between the subject of economic activity and state institutions and is standardized and mandatory. The second one is aimed at organizing financial relations at privately owned enterprises. Since dynamic changes in the external environment increase the difficulty of the regulation mechanism's functioning, this mechanism was chosen for research.

The enterprise's adaptability to the challenges of war requires decentralization of its production capacities, which reduces the level of infrastructure damage in the event of missile strikes. This, in turn, is one of the factors in reducing the level of centralization of enterprise management, which requires the provision of appropriate powers to individual departments (workshops, divisions, etc.) regarding the use of financial instruments to ensure production activities and forms a system of horizontal financial relations between them. This conditions the actual formation of a horizontal financial system and, if necessary, credit mechanisms that ensure the functioning of the specified departments.

This is, first of all, a confirmation of the thesis that the organizational architecture of the enterprise, which is personified by the organizational and economic mechanism, plays the role of the subject of management, and the financial and credit system, which is personified by the financial and credit mechanism, plays the role of the subject of relations. Secondly, the financial and credit mechanism of the enterprise should also be considered as a dynamic adaptive system, which, if necessary, can lose its hierarchical character and acquire the architectural characteristics of a network structure.

To identify the importance of the financial and credit mechanism in ensuring the sustainable development of enterprises, it is advisable to use an integrated approach that combines theoretical developments in the field of sustainable development, assessment of the conditions for achieving the required level of financial security, and monitoring of the tasks of the financial and production activities of enterprises.

Significant dynamic changes in the influence of the external environment caused by the war require a review of peacetime approaches to the formation and implementation of strategic plans for financial and credit activities.

Negative external factors that make it difficult to ensure the sustainable development of enterprises as a result of hostilities include:

1. Destruction of fixed assets of enterprises. Threats to infrastructure and personnel, which requires additional costs to reduce risks and increase wages as compensation for the increase in threats.
2. Decrease in business activity or its significant changes.
3. Unstable supply of raw materials and components.
4. The instability of the supply of energy resources, the rise in their prices, and the rise in the cost of fuel.
5. Reduction of the customer base.

6. Decrease in the purchasing power of the population.
7. Complication of foreign economic activity.
8. Leap-like changes in inflationary influences.
9. Reduction of external and internal investments due to the increase in the level of risks for investors.

The effects of the war also lead to an increase in all types of lending risks inherent in peacetime: inflationary, exchange rate changes, rising credit costs, insolvency, etc. A bigger problem is that the indicated growth of risks is uneven, sometimes leaping, which creates additional complications for the functioning of the financial and credit mechanism, in particular for the attraction and use of external loans.

This has the effect of changing the operating conditions of enterprises and, accordingly, their implementation of financial and credit policy.

This is reflected in the cross-dynamics of statistical data of the period before and after the start of full-scale aggression.

Thus, the data presented in Table 1 indicate that after the shock, which was caused by the start of a full-scale war and, accordingly, led to an increase in the level of risks both for creditors and for companies receiving loans, with a certain stabilization of the volume of lending to business entities in the national currency, the dynamics of the indicator of the volume of lending to economic entities in foreign currency shows a systematic decrease with a rate (slope ratio of the trend) of 14.58. This can be explained not only by the decrease in the volume of import-export operations by subjects of economic activity due to the complication of logistics processes but also by the increase in average annual interest rates on bank loans in foreign currency. The growth rate of the cost of lending is greater for loans in foreign currency. For comparison, rates on long-term loans in foreign currency increased by more than 14% in 2023 compared to 2021, while rates on long-term loans in national currency increased by only 6% over the same period. As can be seen from the data presented in Table 1, for a reduction in the volume of lending with a term of up to one year, there is an increase in the volume of lending with a term of one to five years. At the same time, the trend towards steady growth in the cost of loans worsens the conditions for the operation of the credit mechanism of enterprises.

Table 1. Indicators of lending to business entities in 2021-2023. (Source: compiled by the authors using data from the National Bank of Ukraine, 2024)

Parameter		Years		
		2021	2022	2023
The volume of lending to business entities in the national currency, UAH billion		535.74	553.77	547.89
The volume of lending to business entities in foreign currency (with conversion at the exchange rate into the national currency), UAH billion		216.58	200.60	187.41
By terms, UAH billion	up to a year	415.52	412.55	379.63
	from one to five years	242.41	240.98	252.53
	more than five years	94.38	100.83	103.12
Average annual interest rates on bank loans of enterprises, %	Short-term loans in national currency	12.10	12.20	12.40
	Long-term loans in national currency	13.30	13.90	14.10
	Short-term loans in foreign currency	3.00	3.30	3.50
	Long-term loans in foreign currency	5.00	5.60	5.70

The increase in investment risks as a result of the start of full-scale hostilities led not only to a reduction in investment volumes but also to the corresponding complication of the process of ensuring the sustainable development of enterprises. It also affected the process of renovation of subjects of economic activity and the level of innovation, thereby reducing the competitiveness of Ukrainian enterprises in the world market. This is evidenced by the data presented in Figure 1 and Figure 2. These data also indicate the uneven impact of the lack of investment in financial resources on the functioning of financial and credit mechanism of large, medium, and small enterprises.

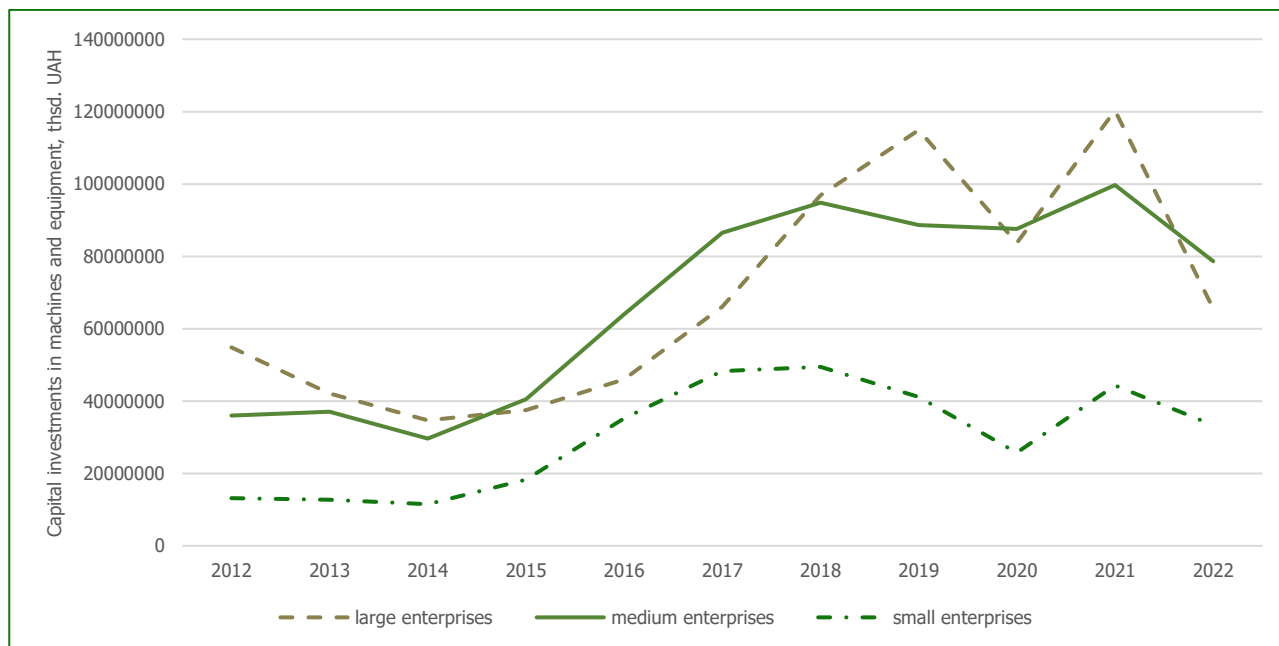


Figure 1. Capital investments in machines and equipment, UAH thousand. (Source: made by the authors using data from the State Statistics Service of Ukraine (2024))

Under equally directed crisis vectors in this period, the financial and credit mechanism of large enterprises had a higher level of stability for the specified categories of subjects of economic activity. In 2022, in comparison with the indicator of the previous year, capital investments in machines and equipment (Figure 1) for large enterprises were reduced by 54.5%. At that time, this indicator was 78.9% for medium-sized enterprises and 75.1% for small enterprises. Capital investments in intangible assets (Figure 2) during this period were reduced by 48.8% for large enterprises, by 77.99% for medium-sized enterprises, and by 73.2% for small enterprises.

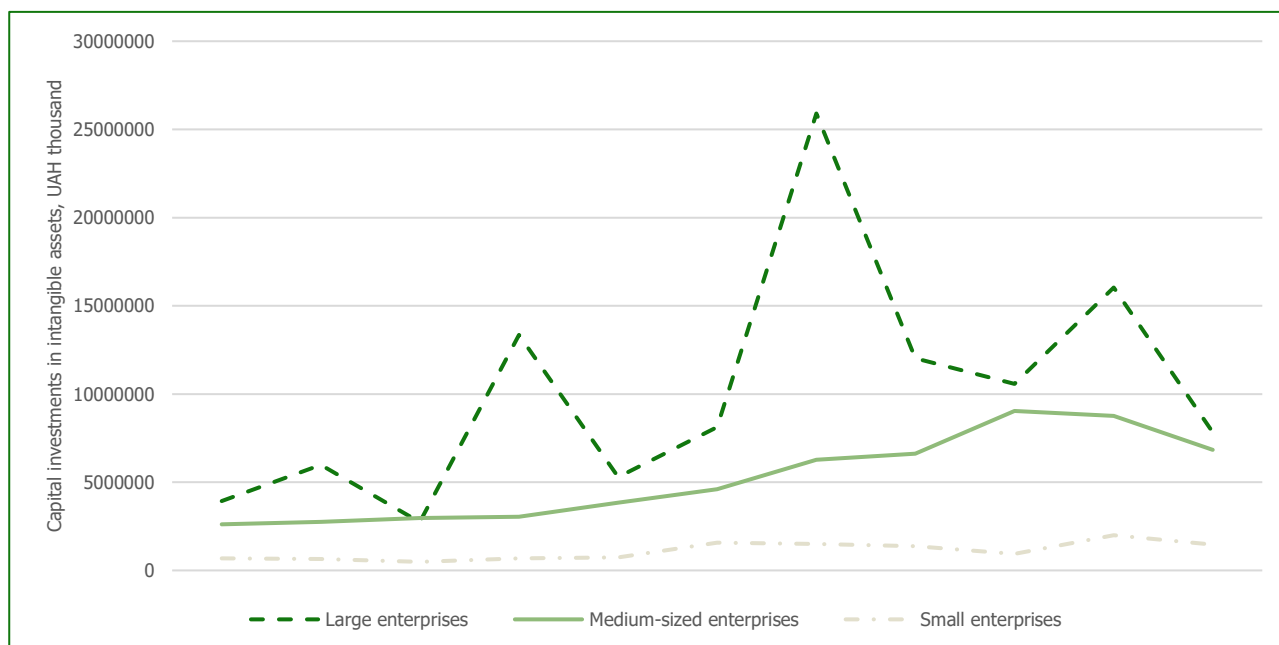


Figure 2. Capital investments in intangible assets, UAH thousand. (Source: made by the authors using data from the State Statistics Service of Ukraine (2024))

The value of the total amount of capital investments, even with a relatively minor influence of military risks, fluctuated up to ~40% in the period 2017-2021 (Table 2), which indicates significant instability in the functioning of the financial and credit mechanism of enterprises.

Table 2. The dynamics of capital investments by sources of financing in actual prices, UAH million. (Source: made by the authors using data from the State Statistics Service of Ukraine (2024))

Sources of funding	Years							The indicator of 2023 to the indicator of 2017, %
	2017	2018	2019	2020	2021	2022	2023	
Total	412812.7	526341.8	584448.6	419836.7	528802.0	279597.83	395450,01	95.8
<i>including on account of</i>								
the state budget	14324.6	21036.7	29536.7	36512.5	48545.5	26374.02	38995.0	272.2
local budgets	38175.9	45743.1	56047.5	43558.3	44207.8	12766.50	28554.0	74.8
own funds of enterprises and organizations	288644.2	375309.1	397771.5	279330.4	362693.0	203427.64	285675.0	99.0
bank loans and other lending	21826.9	35299.8	40983.1	27894.5	26654.1	11822.12	11649.0	53.4
funds of non-resident investors	5667.1	1540.2	3541.4	1729.2	779.0	92.19	290.0	5.1
public funds for the construction of own housing	32288.1	33838.9	32666.4	20590.9	28576.2	17913.91	21789.0	67.5
other financing sources	11885.9	13574.0	23902.0	10220.9	17346.4	7201.45	8498.0	71.5

As can be seen from the data presented in Table 2, the most significant source of capital investments for the period of 2017-2023 was bank loans. At the same time, the dynamics of changes in this indicator in this period is significantly greater than in all other indicators - the ratio of squared deviations of the time series of indicators of bank loans and the time series of indicators of state budget funds is ~ 39.35 . It can also be seen that capital investments from the state budget increased almost threefold from 2017 to 2023, and, at the same time, capital investments from non-resident investors decreased almost twenty times. The company tried to compensate for the reduction in the volume of capital investments from some sources with an increase in the volume of investment from other sources, and after a significant reduction in 2022, in 2023, the volume of investment almost reached the level of 2017. At the same time, relative to the most successful year, 2021, the volume of capital investments in 2023 is only 74.8%.

By comparing the ratio of the amounts of equity capital and combined liabilities of large and medium-sized entities of economic activity (excluding banks) for various industries, there are significant sectoral disproportions of the specified indicators in certain periods of time and differences in the dynamics of their changes (Figure 3).

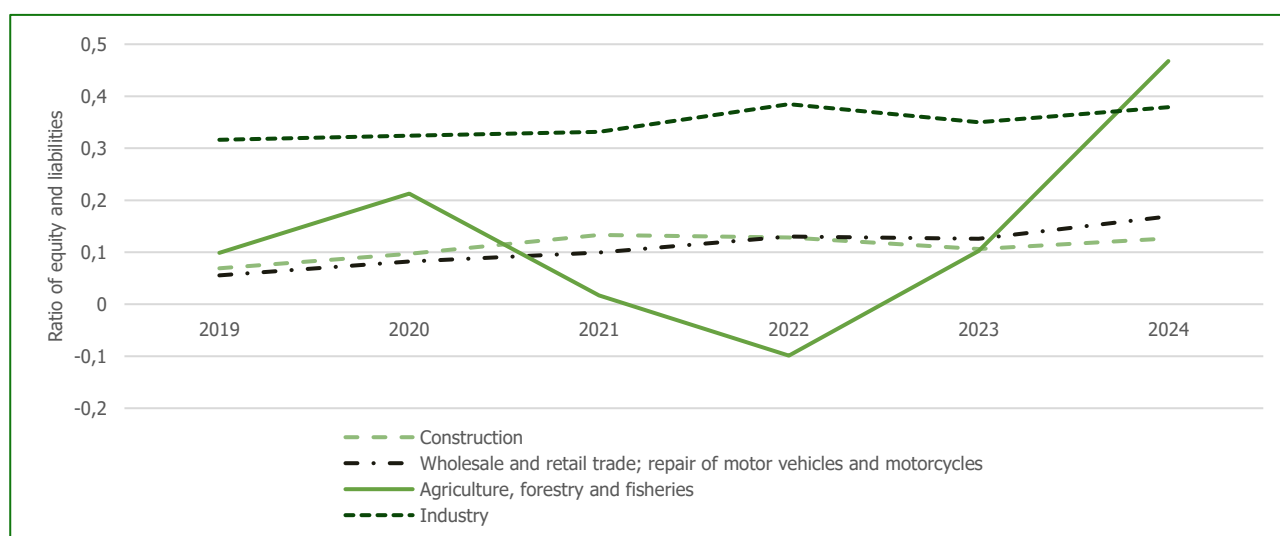


Figure 3. Dynamics of the ratio of equity capital and liabilities of large and medium-sized enterprises by industry. (Source: made by authors using data State Statistics Service of Ukraine (2024))

This ratio is significant not only in view of the change in the management of financial resources but also, to a certain extent, as a consequence of the rapid growth of external risks, which, accordingly, affected the financial and credit mechanism of Ukrainian enterprises. The financial indicators of agricultural enterprises underwent the most significant changes in the period of 2019-2024. The cessation of foreign trade in agricultural products after the beginning of a full-scale war due to the blockade of sea ports reduced the amount of agrarians' own capital. The opening of sea routes allowed agricultural enterprises to rapidly increase the amount of their own capital and, starting in 2024, to attract short-term loans to compensate for the lack of working capital. The volume of short-term loans to farmers in 2024 compared to the index of 2023 increased by 17%. At the same time, it should be noted that for agricultural enterprises, the trend of reducing the ratio of equity capital to borrowed funds began earlier than for other industries, namely in 2020, which is associated with a decrease in current assets by 18% compared to the indicator of 2019, a decrease in the amount of equity capital by 11.6 times, a decrease in the number of long-term loans by 43.7% and is evidence of a significant crisis in the industry.

Significant sectoral differences are also indicated by the lag in the time when the ratio of equity and liabilities for enterprises reaches its maximum. So, if the specified ratio for the construction industry reached its maximum value in 2021, then for industry in general it happened in 2022. The experience of the impact of full-scale hostilities and, as a result, the change in the severity of the impact of risks on the economy and the functioning of enterprises led to a decrease in the share of the loan capital and a greater reliance on the use of equity capital in the studied areas of economic activity in the period of 2023-2024, which, accordingly, affected increasing the level of financial stability and ensuring the sustainable development of enterprises.

This also confirms the importance of dynamic adjustment of the ratio of the volume of financial resources from various sources to stabilize the functioning of enterprises in conditions of war and crisis. The above also indicates that the architecture of financial and credit mechanism of enterprises in conditions of war and crisis cannot be completely unified and requires careful individual adaptation to the conditions and realities of the functioning of each subject of economic activity.

Based on the above-mentioned need to study not only the absolute values of the financial indicators of subjects of economic activity, which determine or characterize the fulfilment of the task of providing enterprises with resources but also the comparison of the rates of their change over time, linear equations of the trends of the indicated indicators were constructed (Table 3). Such an approach allows not only to objectively assess the general trends in the use of sources of resource provision of financial and credit mechanism of large and medium-sized economic entities but also to indicate the prospects for their application in the next period (without changing the general nature and strength of external influences) and to justify the selection of measures for operational regulation of economic activity, taking into account deviations from the defined path of development.

The revealed trends of financial indicators of large and medium-sized entities of economic activity for the period of 2019-2024 (Table 3) indicate an anticipatory growth of current assets compared to the rate of change of non-current assets - the slope ratio of the trend of current assets is greater than the slope ratio trend of non-current assets by 2.56 times.

Current assets, as you know, include production stocks, work in progress, cash, accounts receivable and other assets. Therefore, an anticipatory increase in the angle of inclination of the trend of current assets indicates dangerous trends. In particular, if there is a need to increase warehouse stocks due to the growth of risks to logistics processes, a decrease in the payment discipline of counterparties for the shipped products of the enterprise leads to a shortage of working capital, which negatively affects the functioning of the financial and credit mechanism of enterprises.

The volumes of current liabilities and provision of large and medium-sized entities of economic activity are growing much faster, namely 4.4 times, than the volumes of long-term liabilities. The rate of growth of current liabilities is greater than the rate of growth of equity - 1.2 times.

Table 3. Linear equations of trends in financial indicators of large and medium-sized entities of economic activity for the period of 2019-2024. (Source: compiled by the authors using data from the State Statistics Service of Ukraine (2024))

Parameter	Linear trend equation for the period 2019-2024
Non-current assets	$y = 193110x + 3E+06$
Current asset	$y = 494895x + 3E+06$
Long-term liabilities and collateral	$y = 82912x + 901753$
Current liabilities and provisions	$y = 364716x + 3E+06$
Own capital	$y = 305160x + 2E+06$
Balance	$y = 687672x + 6E+06$

Such an approach allows not only to objectively assess the general trends in the use of sources of resource provision of financial and credit mechanism of large and medium-sized entities of economic activity, to indicate the prospects of their application in the next period of time without changes in the general nature and strength of external influences, but also to substantiate the choice of measures of operational regulation of economic activity based on deviation from the defined path of development.

This allows to solve the problem that in the conditions of significant uncertainty of the market environment, war risks, relevant forecasting of the results of financial and credit activities is limited. This uncertainty (Nosyriev et al., 2020; Kostyrko & Koniev, 2024) due to the choice of a strategic goal by the company's management reduces the level of determinism of its achievement. Therefore, the path (attractor in the space of enterprise states) to the specified goal must be adaptive. Thus, in conditions of uncertainty, the attractor of the path to the chosen goal cannot be a smooth curve on the surface of states but must consist of small segments in time and, therefore, will be a polygonal spatial line.

This can be illustrated by the example of the financial and credit activity of PJSC "Poltava Mining and Processing Plant". The state surface is reflected in a multidimensional space by a significant number of volume indicators, with a certain simplification and limitation by operational activity indicators, it can be presented in the form of Figure 4.

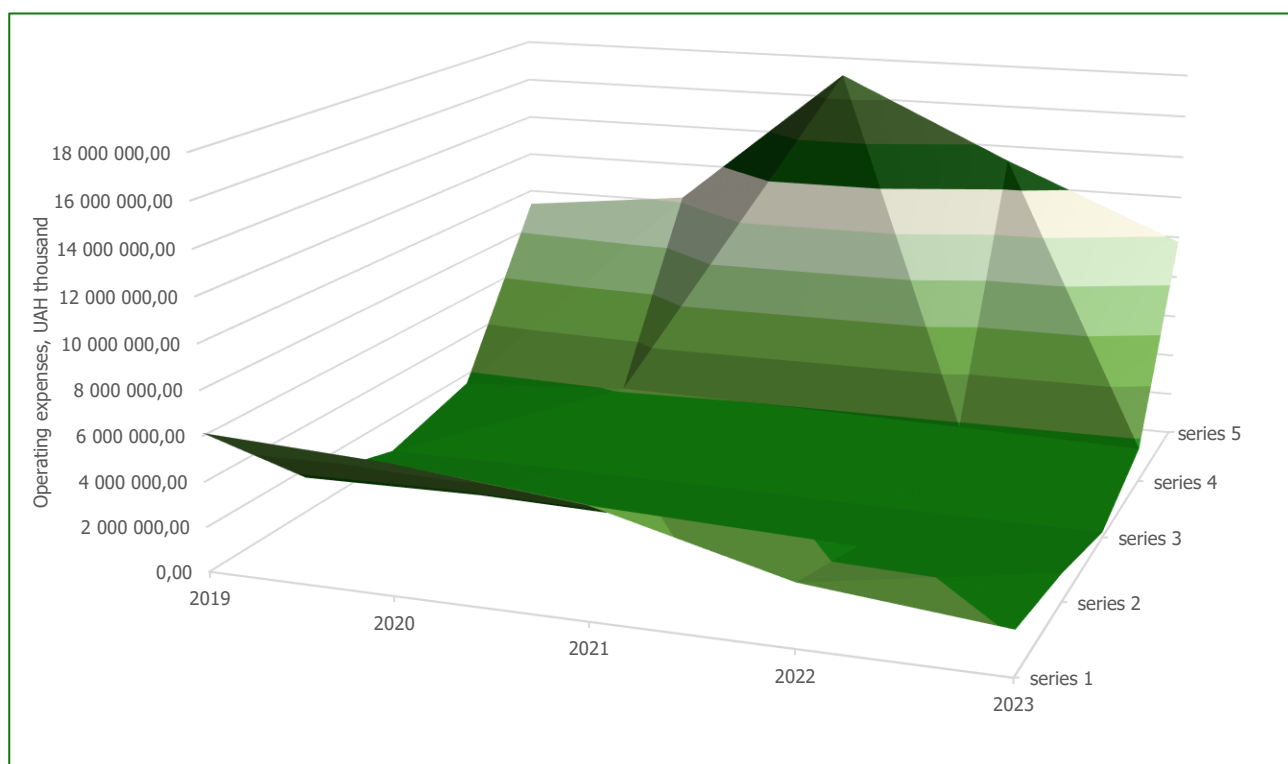


Figure 4. State surface according to indicators of operational activity of PJSC "Poltava Mining and Processing Plant". Note: row 1 - material costs; row 2 - labour costs; row 3 - deduction for social events; row 4 - depreciation; row 5 - other operating expenses. (Source: constructed by the authors using data from Poltava Mining and Processing Plant Private Joint Stock Company (2023)).

Figure 4, first of all, shows that during the operation of PJSC's "Poltava Mining and Processing Plant," the financing of social activities continues, which corresponds to the achievement of the Central Development Goals. Secondly, Figure 5 indicates the relatively flat nature of the state surface in the period of 2019-2020 years. Therefore, the forecasting of indicators assumed the continuity of the development of the enterprise and the absence of inflexions of the specified surface. After the start of a full-scale war, interruptions in energy supply began, which caused the need to stop part of the units, which had the consequence of overloading the working equipment, increasing the costs of repairs, etc. This required an adaptive adjustment of operational activity, which resulted in a change in the trends of the main indicators of operational activity, which determined their graphical presentation (Figure 5).

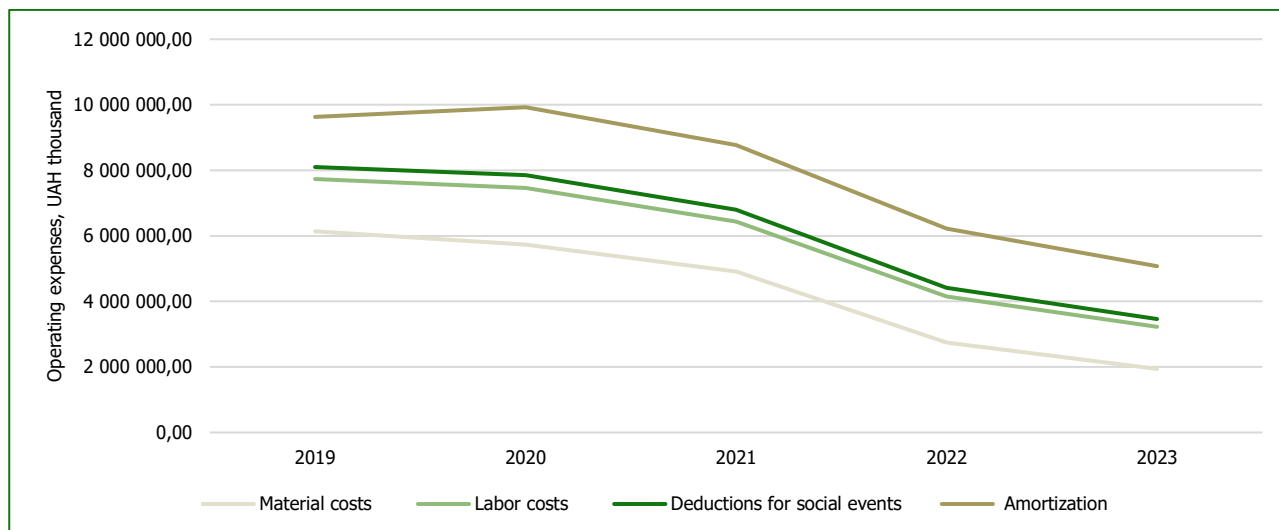


Figure 5. Dynamics of operating expenses PJSC "Poltava mining and processing plant". (Source: constructed by the authors using data from Poltava Mining and Processing Plant Private Joint Stock Company (2023)).

Certain deviations from the planned goal must be corrected by operational management tools, financial incentives and levers. This approach also allows to neutralize the multiplicative influence of external factors in an adaptive way, without a priori formalization of this influence, which is often practically impossible in conditions of significant dynamic changes.

The choice of management tactics should be based on the method of maximizing the utility function with the optimal use of financial and credit resources and, at the same time, ensure the neutralization of risks. This can be formalized mathematically as follows:

$$\max F \rightarrow U_{t=0}^{t=t_1} \text{opt} \vec{S} \oplus \text{opt} \vec{X} \quad (1)$$

where F is the utility function, which is determined by the goals of using the financial and credit mechanism in crisis conditions (for example, the absence of losses); \vec{S} - vector of financial and credit resources; \vec{X} - vector of costs for risk neutralization; $t \in (0, t_1)$ is the time of the evaluation period.

To evaluate the specified resources under the simplified version of the information provision of the financial and credit mechanism, one can rely on the indicators of one's own financial reporting. For example, an indicator of the need to attract credit funds can be the liability of the company's balance sheet, which is given in form 1 of the specified reporting. In the specified form, equity capital, long-term and current liabilities are separated - respectively, the first, second, and third sections, section III). One can rely on indicators of the volume of loans, funds raised, stock (stock exchange) financing, etc., using simple arithmetic operations with the corresponding lines of the balance sheet liabilities.

In peacetime, sufficiency was established and required the consistent performance of evaluation operations: own working capital, working capital, and short-term loans, followed by the determination of the surplus or shortage of the specified financial resources. However, the dynamism of external influences leads to the dynamism of changes in the indicated indicators. Therefore, the coordination of the maximization of the utility function for the optimization of financial resources and the neutralization of risks requires the use of the above method (equation 1) at each time interval of the enterprise's operation. This, in turn, may require both changes in the architecture of the financial and credit mechanism as a means of adapting to dynamic threats and even changes in the system of financial and economic indicators, which in previous periods were chosen to assess the effectiveness of management. For example, moving from the use of the profit maximization indicator to indicators of the integral sustainability of the enterprise (current and absolute liquidity indicators, etc.), the ability to achieve certain strategic and tactical goals in the face of threats, relying on one's own financial resources; the level of viability of the enterprise, the indicators of which can be chosen as the cost and profitability of the funds involved per unit of products (services), their profitability, etc. Thus, the financial and credit mechanism should be the most dynamic, variable component of the financial policy of the subject of economic activity.

The theory of financial forecasting as a basis for strategic planning of financial and credit policy is based on establishing connections and analogies between the past and the future (Kostyrko & Koniev, 2024), but wartime breaks the continuity of these connections, which also leads to a decrease in the relevance of the financial and credit strategy of enterprises.

This is also an argument for the introduction of operational adjustment of the strategy in accordance with changes in external influences. Therefore, it is advisable for any architecture of the financial and credit mechanism chosen by the management of the enterprise to assess the level of stability and, accordingly, the prerequisites for achieving the sustainable development of the enterprise not only by absolute or relative indicators but by their time derivatives. This will make it possible to quickly adjust the company's financial policy. At the same time, it is advisable to use absolute or relative financial indicators as time-integrated indicators that will provide an opportunity to assess long-term deviations from the company's strategic development plans. This will also allow for the avoidance of the problem of evaluation in conditions of uncertainty and negative synergistic interaction of threats.

Based on the Methodological recommendations for the analysis of the financial condition of subjects of economic activity (Liga zakon, 2006), an approach to assessing the level of the possibility of risk neutralization using the regulatory financial and credit mechanism of the enterprise is proposed. This requires, first of all, an analysis of whether the subject of economic activity has enough time to balance current assets and short-term liabilities in the event that the current liquidity ratio (C_{cl}) acquires dynamic values greater than the critical indicator - $C_{cl} = 2$. Secondly, the analysis of whether the enterprise has enough time to balance its own working capital and current assets in case of temporary acquisition of the coefficient of provision of own working capital (C_{powc}) values greater than the critical indicator - $C_{powc} = 0,1$. This approach also makes it possible to assess the rate of change in the effects of dynamic war risks and crisis challenges, which is important for operational management, neutralization of external threats, and, if necessary, timely transformation of the financial and credit mechanism of the enterprise.

The proposed proposals will make it possible to improve the use of the financial and credit mechanism to ensure the stable operation of economic entities under the significant and dynamic challenges of war.

This confirms the increase in the importance of operational adaptation regulation of financial and credit activities conditioned by deviations from the defined path of development to ensure the sustainable functioning of the enterprise.

DISCUSSION

The article by Horobets (2021) states that the financial mechanism "forms a complex of management actions". It is more appropriate to consider this mechanism as a tool and an object, not a subject of management. One cannot also agree with the thesis of Horobets (2021) that organizational factors "form the basis of the financial mechanism". Rather, the financial mechanism is one of the structural elements, the "basis" of the organizational and economic mechanism of the enterprise. The thesis about rebuilding the architecture of the financial mechanism on the basis of "financial benchmarking of efficiency" (2021) raises some doubts. The peculiarities of the functioning of each enterprise determine the peculiarities of its financial and credit mechanism, which calls into question the necessity of the process of constantly searching for a benchmark enterprise competitor. This is also substantiated in the article by Spyak and Fastovets (2019), which indicates that the financial and credit mechanism of enterprises varies by segment, location, client base, etc.

Some scientists in their articles, which were published during the hot phase of the war (Datsenko, 2024) while analyzing the reasons for the insufficient financial stability of enterprises, do not even indicate the growth of the threat level and its impact on all economic indicators of subjects of economic activity.

However, the thesis that the purpose of the financial and credit mechanism is to ensure the most effective performance of finance functions (Marusiak, 2021) is doubtful. As it is indicated in the presented article, this is the task of using the specified mechanism, and its purpose is to ensure the stability of the financial condition of the subject of economic activity and, thereby, to ensure the sustainable development of the enterprise.

Determining prerequisites for the sustainable development of enterprises Stepanenko (2021) notes, among other internal factors, the need for a financial resource management strategy. At the same time, as indicated in the presented article, rapid changes in external conditions require more attention to adaptive tactics of operative management of financial resources.

A significant number of researchers, particularly Pilipenko (2020), do not pay attention to the change in the operating conditions of enterprises and, therefore, prefer strategic planning of financial activities without even mentioning operational management. Even when researching the functioning of the financial and credit mechanism in uncertain conditions, scientists do not pay attention to the need for constant adjustment of strategic plans in accordance with changes in external conditions (Dema et al., 2021). At the same time, the dynamism of war and crisis calls for attention to operational measures as an adaptive tool to threats and, as it is discussed in the presented article, an effective means of ensuring the sustainable development of enterprises.

There is a tendency to fragment the financial and credit mechanism of the enterprise by areas of activity, for example, foreign and domestic economic activity (Shvayko et al., 2021). Considering the need to evaluate the efficiency of each line of activity, at the same time, the introduction of the separation of different sub-mechanisms by lines in the integral financial and credit mechanism cannot be considered a relevant approach.

CONCLUSIONS

The tasks of the financial and credit mechanism are defined. It is indicated that the financial and credit mechanism of the enterprise should be considered as a dynamic adaptive system, which, if necessary, can lose its hierarchical character and acquire the architectural features of a network structure.

It is noted that in order to identify the importance of the financial and credit mechanism in ensuring the sustainable development of enterprises, it is advisable to use an integrated approach that combines theoretical developments in the field of sustainable development, assessment of the conditions for achieving the required level of financial security, and monitoring of the tasks of the financial and production activities of enterprises.

It is indicated that significant dynamic changes in the influence of the external environment caused by the war require a review of peacetime approaches not only to the formation and implementation of strategic plans for financial and credit activity, but also to the operational use of the financial and credit mechanism of the enterprise.

It is noted that the effects of the war lead not only to an increase in all types of lending risks inherent in peacetime: inflationary, exchange rate changes, increased credit costs, insolvency, etc. A bigger problem is that the indicated growth of risks is uneven, sometimes leaping, which creates additional complications for the functioning of the financial and credit mechanism, in particular for the attraction and use of external loans. This has the effect of changing the operating conditions of enterprises and, accordingly, their implementation of financial and credit policies.

This is reflected in the cross-dynamics of statistical data of the period before and after the start of full-scale aggression given in the article. The given data confirm that the experience of the impact of full-scale hostilities and, as a result, the change in the severity of the impact of risks on the economy and the functioning of enterprises led to a change in the structure of sources of financial and credit support in the studied areas of economic activity in the period of 2023-2024, in particular, to a decrease in the share of loan capital and a greater reliance on the use of own capital, which, accordingly, affected the growth of the level of financial stability and ensuring the sustainable development of enterprises.

This also indicated that the architecture of financial and credit mechanism of enterprises in the conditions of war and crisis cannot be completely unified and requires careful individual adaptation to the conditions and realities of the functioning of each subject of economic activity.

The approach of comparative research of trends is proposed, which allows not only to objectively assess the general trends in the use of sources of resource provision of financial and credit mechanism of large and medium-sized entities of economic activity but also to point out the prospects of their application in the next period of time without changing the general character and strength of external influences, and to substantiate the choice of measures of operational regulation of economic activity based on deviation from the determined path of development.

It is indicated that the uncertainty of the market environment and the risks of war reduce the level of determinism of achieving a strategic goal. Therefore, the path to the specified goal should be adaptive. Certain deviations from the planned goal must be corrected by operational management tools, financial incentives and levers. This approach also allows to neutralize the multiplicative influence of external factors in an adaptive way, without a priori formalization of this influence, which is often practically impossible in conditions of significant dynamic changes.

It is indicated that it is expedient for any architecture of the financial and credit mechanism chosen by the management of the enterprise to assess the level of stability and, accordingly, the prerequisites for achieving the sustainable development of the enterprise not only by absolute or relative indicators but also by their derivatives in time. This will make it possible to quickly adjust the company's financial policy. At the same time, it is advisable to use absolute or relative financial indicators as time-integrated indicators that will provide an opportunity to assess long-term deviations from the company's strategic development plans. This will also allow avoidance of the problem of assessing the negative synergistic interaction of threats in conditions of uncertainty. Based on the Methodological recommendations for the analysis of the financial condition of subjects of economic activity, an approach to assessing the level of the possibility of risk neutralization using the existing financial and credit mechanism of the enterprise is proposed. This requires, first of all, an analysis of whether the subject of economic activity has enough time to balance current assets and short-term liabilities in the event

that the current liquidity ratio acquires dynamic values greater than the critical indicator. Secondly, the analysis of whether the enterprise has enough time to balance its own working capital and current assets in the event of the ratio of provision of own working capital temporarily taking values greater than the critical indicator is required as well. This approach also makes it possible to assess the rate of change in the effects of dynamic war risks and crisis challenges, which is important for operational management, neutralization of external threats, and, if necessary, timely transformation of the financial and credit mechanism of the enterprise. This confirms the increase in the importance of operational adaptation regulation of financial and credit activities conditioned by deviations from the defined path of development to ensure the sustainable functioning of the enterprise.

Further research will be aimed at developing an automated system for supporting management decisions regarding the adaptive use of financial and credit instruments to ensure the sustainable functioning of enterprises in conditions of significant dynamic threats.

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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ЗНАЧЕННЯ ФІНАНСОВО-КРЕДИТНОГО МЕХАНІЗМУ В ЗАБЕЗПЕЧЕННІ СТАЛОГО РОЗВИТКУ ПІДПРИЄМСТВ В УМОВАХ ПІДВИЩЕНОЇ НЕВИЗНАЧЕНОСТІ

Метою дослідження є визначення особливостей фінансово-кредитного забезпечення сталого розвитку підприємств за викликів війни й кризи та розроблення пропозицій щодо вдосконалення фінансово-кредитного механізму підприємств (ФКМП) в умовах динамічних загроз. При виконанні дослідження використані загальні й спеціальні методи

наукового пізнання. Метод критичного аналізу застосовано для дослідження крос-динаміки статистичних даних періоду до й після початку повномасштабної агресії. Метод аналізу й синтезу дозволив запропонувати підходи до перебудови архітектури ФКМП. Запропоновано метод порівняльного дослідження трендів.

Визначенні завдання фінансово-кредитного механізму. Указано, що ФКМП слід розглядати як динамічну адаптивну систему, яка може набувати архітектурних ознак мережевої структури. Указано, що невизначеність ринкового середовища, ризиків війни зменшує рівень детермінованості досягнення стратегічної цілі, тому шлях до вказаної цілі має бути адаптивним. Певні відхилення від запланованої цілі мають бути кориговані оперативними інструментами управління, фінансовими стимулами та важелями. Указаний підхід дозволяє також адаптивно нейтралізувати мультиплікативний вплив зовнішніх факторів без апіорної формалізації цього впливу, що в умовах значних динамічних змін часто є практично неможливим.

Указано, що доцільно для будь-якої обраної менеджментом підприємства архітектури ФКМП оцінювати рівень стійкості й, відповідно, передумови досягнення сталого розвитку підприємства не лише за абсолютними чи відносними показниками, а за їхніми похідними в часі. Це дасть можливість оперативного коригування фінансової політики підприємства. Водночас, абсолютні чи відносні фінансові індикатори запропоновано використовувати як інтегровані в часі показники, які дадуть можливість оцінки довгострокового відхилення від стратегічних планів розвитку підприємства. Запропоновано підхід, який дозволив обґрунтувати вибір заходів оперативного регулювання економічної діяльності за відхиленням від визначеного шляху розвитку. Такий підхід, крім того, дозволяє оцінити темп зміни впливів динамічних ризиків війни та викликів кризи, що є важливим для оперативного управління, нейтралізації зовнішніх загроз і своєчасної трансформації ФКМП.

Ключові слова: фінансово-кредитний механізм, сталий розвиток, структура фінансових ресурсів, ризики війни та кризи, невизначеність, оперативне управління, регулювання за відхиленням

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