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Risks in the activity of business entities: the concept of analysis and management

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Abstract

The article identifies a list of risks that have an impact on the activities of modern enterprises. It is proposed to improve their classification. In particular, based on the use of the method of generalization and critical analysis, the identified risks are divided into objective and subjective risks based on causality, and systemic and non-systemic based on frequency of occurrence. The classification characteristic for objective risks is their irreversibility and direct impact on changes in the financial state of the enterprise, and for subjective risks - the human factor (they include risks that arise as a result of unqualified actions of responsible persons). Thanks to this, using modeling and formalization, an approach to analyzing the level of sensitivity of economic entities to risks was formed and its indicators and their critical values were substantiated. The graphic method is applied to form the concept of financial risk management based on their analysis.

The essential content of the indicator of the level of sensitivity of the economic entity to risks, which is identified as a measure of the vulnerability of the economic entity in the process of its activity to the negative effects of the internal and external environment, is substantiated.

Grouping, graphical approach and generalization were used to implement the proposal regarding the methodology and structure of the financial risk analysis process. The application of this approach will allow the company's management to develop a system of measures to eliminate risk factors in order to preserve its stable financial condition.

Keywords: enterprise activity; risk; financial risk; classification; factors; risk sensitivity level; analysis methodology; indicators.

1. Introduction

Business entities in the process of their activity are constantly exposed to both internal and external risks. In particular, financial risks arise from the aggravation of the financial crisis in the state and are destabilizing in the development of the economic system. The state and trends in the development of financial crises in modern conditions are the focus of financial analysts of business entities, who conduct appropriate assessments in order to develop measures aimed at smoothing the negative effects of crisis phenomena and avoiding financial risks. In this context, it is important to determine the essence and constituent elements of the concept of financial risk in the economic activity of a business entity, as well as the process of improvement and development of new ways of overcoming and avoiding it. Due to the instability and turbulence of the modern economy, such research is extremely relevant.

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2. Literature review

The analysis of literary sources dedicated to the study of the concept of financial risk indicates the absence of a single approach to determining its essence.

Vasylyk [1] in his work states the equality between the concepts of financial and credit risks, that is, he equates them. Scientists Hrushko and Pylypchenko [4] to explain their position distinguish the main components of financial risk, in particular, the risk of purchasing power, political risk and investment risk.

Lytvyn B.M., Stelmakh M.V., Ostrovska G.Y. [5; 8] believe that financial risk is an action that is implemented in the process of choosing a direction of development and allows obtaining the desired result. In this perspective, scientists [5, p. 249; 8, p. 335] note that financial risks involve the possibility of losing one's resources or not receiving them in full. Also, there is an opportunity to get additional, or on the contrary, less profit in the process of the impact of a risk event on the activity of the business entity. So, from this wording, we can say that financial risk can be accompanied by both significant income and significant expenses.

Neskorodev S.M. in his studies, he presented the financial risk as a result of the economic activity of the enterprise, the value of which differs from the planned value, which in turn violates the purpose and tasks of the business entity. The scientist claims that risk is a process that changes throughout the entire cycle of the business entity's operation, and it must be analyzed at all these intervals (in the past, present and future time). [6, p. 133].

Instead, O.Yu. Polyakova and L.A. Goltyaeva in their scientific studies [9, p. 106] in the essence of financial risk include the possibility of non-fulfillment of financial obligations to partners, that is, the impossibility of repaying loans and other borrowed funds. In other words, the authors equate financial risk with credit risk.

In general, a critical analysis of the available sources regarding the essence of the concept of «financial risk» indicates the multifacetedness definition and allows us to conclude that there are problems of a classification and evaluation nature. Based on the research, we can say that the most threatening financial risks are investment risk, insolvency risk and risk of financial stability decline. Risks cover all aspects of business entities and are not fully explored, which is of particular interest and indicates the relevance of our research. It should be noted that the study of the essence and constituent elements of financial risk is the initial stage in the process of managing them in the course of the business entity's activity.

3. The identification of previously unresolved issues and the formulation of research hypotheses

The purpose of the article is to study the essence, justify the features of classification, identify the levels of sensitivity of enterprises to the influence of financial risks and build an algorithm for their analysis.

4. Research methodology and methods

Using the method of assessment and generalization, the article identifies a list of risks that have an impact on the activities of modern enterprises. Based on the use of the method of generalization and critical analysis, the identified risks are divided into objective and subjective risks based on causality, and systemic and non-systemic based on the frequency of occurrence. Thanks to this, using modeling and formalization, an approach to analyzing the level of sensitivity of economic entities to risks was formed and its indicators and their critical values were substantiated. The graphic method is applied to form the concept of financial risk management based on their analysis.

Based on the use of basic and well-known laws and analytical indicators (Law of Grosch, indicators of financial stability), the essential content of the indicator of the level of sensitivity of the business entity to risks is substantiated. Sensitivity is proposed to mean the degree of vulnerability of a business entity in the course of its activity to the negative effects of the internal and external environment.

Grouping, graphical approach and generalization were used to implement the proposal regarding the methodology and structure of the financial risk analysis process. The application of this approach will allow the company's management to develop a system of measures to eliminate risk factors in order to preserve its stable financial condition.

5. Main results

Financial risks are an extremely multifaceted concept that is influenced by various factors. Among them, the most influential is the development of crises, particularly financial ones. The study of the concept of financial crisis showed that there is no single interpretation of this category. Yes, Erol, Apak, Atmaca & Öztürk [14, p. 16–32] believes that a financial crisis arises as a result of a disruption of the economic balance and a weakening of all financial factors as a result of unexpected processes that arise in the process of changes, violations and problems in the enterprise management system (for example, the problem of unemployment, natural disasters, violations of the tax system, corruption, etc.). Scientist F.S. Mishkin [16, p. 115–130.] believes that a financial crisis is a change in the state of financial markets that complicates the process of poor choice and moral risk, and as a result, it leads to the loss of the ability of financial institutions to effectively direct funds. Thus, the financial crisis reflects the disorder of the financial system of the economic entity and causes disruption of its effective functioning.

This, in turn, causes the formation of the following groups of financial risks:

1) credit risk (defined as the loss of the investor's monetary reward due to the creditor's inability to repay the loan in accordance with the signed contract). Credit risk is closely related to the amount of expected profit from investments, and bonds are the main element in the process of its formation. It should be noted that the interest rate depends on the level of credit risk

unpredictability. The result of this risk is that the entity may not receive its funds on time, or in the event of force majeure, may not receive them at all. Such a risk most often arises in the period of low creditworthiness of the economic entity, and is vulnerable to changes in the internal and external environment. Its main consequence is the need to find means and measures to restore the balance of the flow of funds, and the following steps of the enterprise's activity will be the factors:

- search for ways of emergency financing;
- decrease in creditworthiness;
- partial or complete suspension of investment projects;
- bankruptcy of the enterprise;
- liquidity restrictions;
- formation of the internal potential of the enterprise;

2) liquidity risk (represents the inability of the economic entity to repay its debt obligations, which may negatively affect the financial condition of the enterprise as a whole). The only option in this situation is the liquidation of its elements by urgent sale at unfavorable prices, which will avoid fines, additional interest, etc. to cover liabilities. This risk is defined as the difference between cash receipts and costs in the process of conducting business operations at the enterprise, which may be accompanied by the adoption of low-quality management decisions regarding resource management that affect the distribution of cash flows;

3) investment risk (probability of unexpected financial losses (decrease in profit, loss of income, capital, etc.) in a situation of uncertainty about the conditions of investment in the economy);

4) guarantee risk (one of the types of debt risks);

5) organizational risk, which arises as a result of poor-quality organizational work regarding the distribution of cash flows at the enterprise, the lack of qualified employees or as a result of the merger of enterprises due to their consolidation in the market;

6) insurance risk, which is an unexpected amount of losses, resulting from unexpected amounts of insurance indemnities;

7) political risk, which involves political events that negatively affect the company's profitability (for example, war, pandemic, etc.);

8) reputational risk is the failure of the enterprise to fulfill its expected obligations, which leads to negative media coverage of the business entity's activities;

9) legal risk involves the adoption of management decisions by state bodies that may affect the business activity and profitability of the business entity;

10) inflation risk is a depreciation of the value of the capital (financial assets of the enterprise), which is accompanied by an increase in the prices of goods, works and services, while the purchasing power decreases;

11) tax risk is a violation of tax legislation, which is accompanied by additional financial and other costs related to tax obligations;

12) interest rate risk arises as a result of a change in the financial market situation, i.e. there is a change in the credit or deposit interest rate;

13) currency risk is formed in the process of carrying out foreign economic activity, which is associated with a change in the foreign currency exchange rate;

14) interest rate risk is the risk of an increase in floating credit interest rates stipulated in credit agreements;

15) price risk is financial costs associated with changes in price indices for assets operating on the financial market;

16) computer risk is the failure of software products and the possible partial or complete loss of information;

17) environmental risk is an unforeseen event or process that leads to changes in the natural environment and has corresponding consequences not only for the business entity, but also for the environment in general.

The presented list of risks, despite its diversity, a financial expression (is of a financial nature). The occurrence of such risks in the course of business activity leads to financial consequences (profit or loss).

Identified financial risks, according to their causes and impact on the financial and economic activity of the enterprise, should be divided into two groups: objective and subjective. A qualifying feature of division for objective risks should be considered their independence from the efforts of subjects. Risks that arise as a result of unqualified actions of responsible persons should be classified as subjective (Table 1).

Table 1
Types of financial risks and their grouping (consolidated classification)

№	Objective risks	Subjective risks
1	credit risk	warranty risk
2	liquidity risk	organizational risk
3	investment risk	reputational risk
4	insurance risk	political risk
5	inflation risk	legal risk
6	interest rate risk	tax risk
7	interest rate risk	computer risk
8	price risk	
9	currency risk	
10	environmental risk	

Source: author's position

The classification of financial risks proposed by the author has a number of advantages, in particular, it allows:

1) carry out effective development of anti-crisis measures taking into account the cause of the risk;
2) predict the occurrence of risks and determine the amount of financial losses;
3) control risks associated with subjective factors and minimize them;
4) better assess risk factors and take into account the possible level of uncertainty and control parameters.

Therefore, among many other reasons, the financial risks of an enterprise depend on the level of organization and structuring of its financial activities, as well as the entities that conduct them. These risks can also be conditionally divided into systemic and non-systemic (Table 2).

Table 2
Types of financial risks

№	Systemic risks arising from	Non-systemic risks arising due to
1		risk of insolvency of the enterprise
2	changes in regulatory documents and acts	acceptance by the management of the enterprise of risk operations for implementation
3	instability in the market	incorrect assessment of the financial status of partners
4	exchange rate changes	inefficient structure of assets and capital
5	changes in interest and credit rates	unqualified financial employees of the business entity
6	changes in asset price indices	the risk of a decrease in financial stability
7	changes in approaches to the assessment of inventory write-offs	unexpected changes in the political space (war, pandemic, etc.)
8	instability of the economy	

Source: author's summary

Systemic risks involve the occurrence of financial losses, which are associated with changes in legislation (and the inability or incorrectness of its implementation in practice), instability (which exists in relation to the economy, market, assets, currency, etc.) and other phenomena. Unsystematic risks are no less dangerous. Their consequences are little predicted. In addition, the management of the enterprise usually does not constantly monitor their availability. Accordingly, there are no clearly defined management decisions aimed at their elimination. In general, it can be argued that non-systemic risks lead to financial losses, which are directly related to the inefficient activity of the business entity and unprofessional activities of its employees.

A characteristic feature of systemic risks is the ability to predict their impact with a sufficiently high level of accuracy. On the other hand, unsystematic risks are risking whose outcome is difficult to predict with sufficient accuracy.

But in both cases, the risk is a process or an event that is accompanied by various development options and makes it impossible to accurately determine the final result of the activity. In view of this, there is a need to carry out analytical work on the assessment of the level of financial risk and the degree of its influence on the financial and economic activity of the business entity.

The results of such an analysis and research of financial risks of business entities make it possible to form more effective measures to combat their negative manifestations, as well as to gain experience of management.

The most informative are the tasks of performing analytical work during a certain period before the beginning and after the end of the crisis (three years before the beginning of the crisis and three years after its end are mainly interesting). In particular, a similar approach was used in 1968 by Altman, who was the first among scientists to build a bankruptcy model and define relevant financial indicators in his article «Financial Ratios, Discriminant Analysis and the Prediction of Corporate Bankruptcy» [12, p. 589–609.] The scientist described in detail the possibility of bankruptcy of US industrial enterprises, proposed to combine statistical methods with traditional index analysis and conducted relevant analytical calculations. E. Altman's research was conducted on the basis of 66 enterprises, which he divided into two equal groups. The first group includes enterprises that went bankrupt during 1946–1965 and whose assets ranged from 0.7 to 25.9 million dollars. The second group consisted of businesses that went bankrupt before 1966 with assets ranging from $1 million to $25 million. At the same time, the first group was formed according to a certain factor of bankruptcy, and the second by a random method, that is, without observing any criterion. Based on reports and balance sheets of selected enterprises, E. Altman calculated 22 coefficients and grouped them into 5 groups (indicators) that predict and characterize the bankruptcy of enterprises.

In this regard, it should be noted that the analysis must necessarily be included in the risk management process. It has all the necessary tools and methods for their evaluation, and also includes the formulation of conclusions based on the results of the analyzed data. The latter are a valid basis for the formation of an effective risk management policy, as well as the development of measures to prevent or prevent them.

In modern conditions, there are many different ways of analyzing and assessing risks that arise in the course of enterprise activity. Therefore, the modern concept of risks and their management includes at least three significant components that collectively identify the essential characteristics and content of the analysis (Fig. 1).

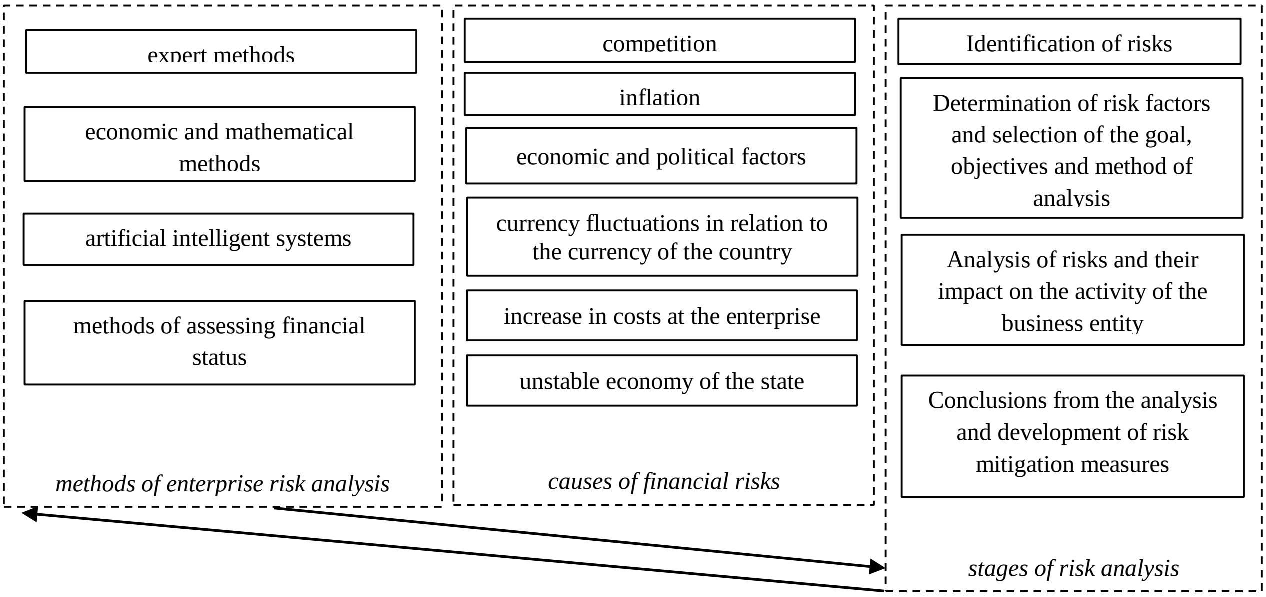

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Fig. 1. The concept of financial risk management based on their analysis

Financial risk is a type of risk that can result in both profit and loss for a business entity. The consequences of financial risk cannot be accurately predicted, but its effect can be adjusted by studying the factors that determine its occurrence. The appearance of risk in the economic activity of a business entity is always accompanied by a high probability of loss, which can manifest itself due to a reduction in production, the occurrence of unplanned costs and losses, other negative phenomena and processes. At the same time, the main task of the enterprise is effective risk management with the aim of minimizing their negative impact on operations.

For this, the stages of risk analysis in the course of the company's activity are important from the point of view of making managerial decisions regarding their elimination [17]. And the analysis itself is a process of determining and evaluating not only existing obvious risks in the economic system of the enterprise, but also probable ones. In addition, it allows you to trace the interdependence and relationship of indicators and results of the enterprise's activity and those risks that threaten them.

In turn, risk factors should be identified as a system of indicators that caused the possibility of a risky situation in the course of the business entity's activity and led to the corresponding consequences (usually negative). Such factors are the likely cause of negative results and require correction in order to ensure the stable development of the enterprise. It should be noted that the influence of risk factors is implemented in the form of an effect that causes a positive or negative result. As a result of the obtained effect of risk factors, a scenario of changing the goals and objectives of the business entity is possible both in the current and in the long term. Also, there is a possible option when the impact is not critical in accordance with the enterprise's activities and this risk factor may be overlooked by the management system. Therefore, the risk factor affects the financial and economic condition of the business entity and determines the directions of the latter's development in accordance with the obtained effect.

One of the important issues of risk analysis is establishing the level of sensitivity for enterprises to their impact. Despite the fact that each economic entity certainly reacts differently to certain risks, and even within the same industry critical values for different enterprises may differ, it is advisable to establish critical values.

Indicators that characterize the impact of financial risks and the sensitivity of business entities to them (a measure of the company's vulnerability to negative influences) can be profitability, financial stability coefficients (respectively, taking into account regulatory values). As for the latter, the coefficient of autonomy should be considered the most adapted to identify the company's sensitivity to financial risks. Taking this into account, it is expedient to distribute the company's risks depending on the strength of their action (Table 3).

Table 3

Indicators characterizing the level of sensitivity of the business entity to financial risks*

№	The level of influence of financial risks (1)		Sensitivity to financial risks (2)		
				Indicator 1	Indicator 2
1	high	decrease in profitability by more than 50 %	high	PBE/FE<2	FCE≥0,5 US>1
2	average	decrease in profitability by 25–50 %	average	PBE/FE = 2	FCE≥0,5, 0,5<US≤1
3	low	decrease in profitability by 5–25 %	low	PBE/FE>2	FCE≥0,5, US<0,5
4	insignificant	decrease in profitability by 0–5 %			

Notes: author's suggestion; * FE – financial expenses, PBE – profit of the business entity, FCE – financial condition of the enterprise – solvency ratio (autonomy), US – unforeseen situation (probability of occurrence)

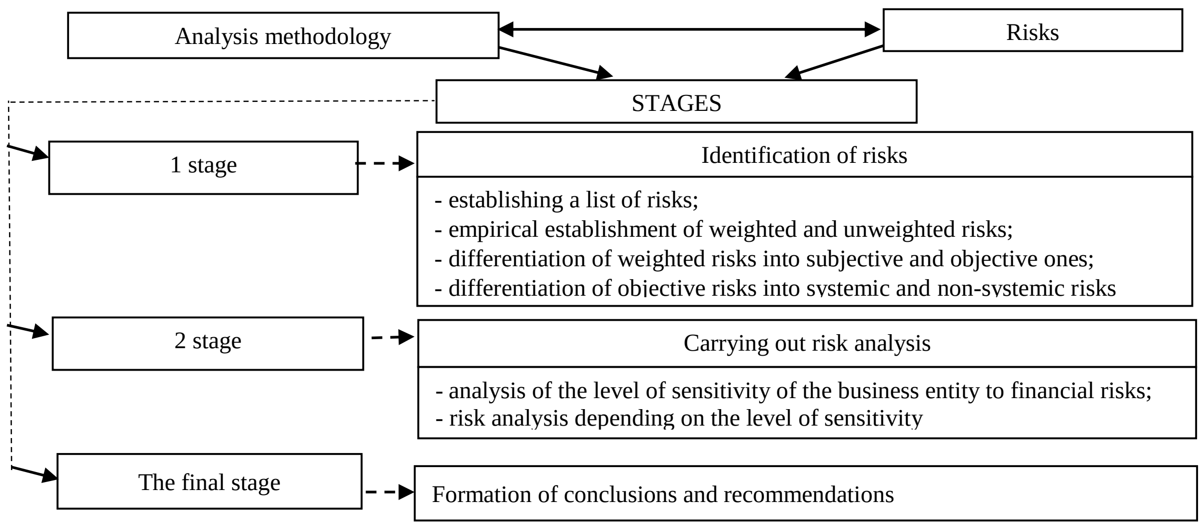
As for the critical values related to profitability (1), they follow from the logic of covering costs and conclusions drawn on the basis of the analysis of bankruptcy of enterprises conducted by Ukrainian and foreign scientists [1, 3, 7, 10, 11, 12].

As for sensitivity indicators, there can be not only 2, as suggested above, but also more. However, from the point of view of the laws of expediency, we have chosen the main already proven criteria. Indicator 1 and whose criteria derive from Law of Grosch [15], which related to the productivity of computer technology, but in the interpretation to economic processes can be formulated in such a way that «expenditures will be productive when profits increase at least double». Hence the critical value that we set at size 2. According to indicator 2, the critical value of the coefficient of autonomy is taken as a basis. Unforeseen situations, or rather the probability of their occurrence, and the corresponding criterion basis within the limits given in the table, are justified as follows. If the probability of occurrence of the risk is less than 50 %, then such a risk is relatively safe for the enterprise, especially if it is financially stable.

Sensitivity to risk should be identified as a measure of the company's vulnerability to the negative effects of the internal and external environment that arise in the course of activity. Risks are perceived to a greater extent as a phenomenon that has a negative connotation. That is, if they are, it is usually associated with the possibility of losses or a decrease in profitability.

On the other hand, individual risks, on the contrary, can lead to the growth of the profitability. An example of such a risk is buying and selling currency. In such cases, it is appropriate to talk about the effectiveness of risks. By the way, even with a negative aspect, such a concept can also be used. And it (risk effectiveness) can be formalized as the lowest level of costs for elimination of risk.

Summarizing, it should be noted that the identification and assessment of risks for their consideration in the process of the enterprise's activity is an important task of the management system. A thoughtful approach to its solution requires certain analytical calculations and generalizations (Fig. 2).



Source: created by the author himself

Fig. 2. Methodological approach to the process of financial risk analysis

The first stage of the financial risk analysis methodology involves the identification of all risks affecting the financial and economic activity of the business entity. In the course of our work, we divide financial risks into objective and subjective, and systemic and non-systemic.

The second stage involves a detailed analysis of the system of identified risks, which in the process of their action affect the financial condition of the enterprise. Here we propose to consider the following options, according to which we will carry out an analysis of financial risks and their impact on the financial and economic activity of the business entity.

Yes, if the business entity:

- belongs to a group of enterprises with a high level of influence of financial risks, then all financial risks identified by us are subject to analysis;

- belongs to a group of enterprises with an average level of exposure to financial risks, then we conduct an analysis of 75 % of the most influential risks from the list of risks defined by us;

- belongs to a group of enterprises with a low level of exposure to financial risks, then we analyze 50 % of the most influential risks from the generally defined spectrum of risks;

- belongs to the group of enterprises in which the level of influence of financial risks is insignificant, then we analyze 25 % of the most influential risks from the generally defined spectrum of risks.

Therefore, the analysis of financial risks according to the proposed methodology will allow to carry out a qualitative assessment of threats to the activity of the business entity, based on the results of which measures will be developed to eliminate or neutralize risk processes at the enterprise.

6. Concluding remarks

In the process of the research, financial risks were identified and their delineation was carried out according to two directions: the cause of occurrence (objective and subjective) and the frequency of occurrence (systemic and non-systemic). The development of the classification and classification features of risks helps to increase the informativeness and quality of their analysis. In particular, due to this, the research developed provisions for assessing the level of sensitivity of the economic entity to risks and determined the indicators that characterize them. The identification and substantiation of the economic content of the indicator of the level of sensitivity of the business entity to risks and its critical values makes it possible to significantly improve the formation and implementation of measures to avoid risks or reduce or neutralize their negative impact. This is possible due to the timely identification of critical points based on the analysis of financial risks. Stabilization measures developed taking into account the results of the analysis can be as effective, real and timely as possible. In the future, scientific research should be directed in the direction of building a block diagram of the analysis, as well as the use of modern IT for its implementation. Thanks to this direction, it will be possible to perform more prompt and qualitative analytical calculations and develop management measures of influence in order to stabilize its financial stability.

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