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Method Development to Assess the Enterprise Financial Risks

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Abstract: The activities of the enterprise are associated with financial risks, the management of which is considered mandatory to ensure sustainable and efficient functioning. Underestimation or reassessment of financial risks can lead to financial losses; therefore, the result of the organization's risk management depends on the quality of the financial risk assessment. The article presents: the concept of "financial risk" formulated by the authors; classification of financial transactions by risk areas; the developed methodology for assessing financial risks is presented, consisting of two successive stages (calculating the amount of damage and calculating the probability of occurrence of financial risk after identifying a risk event; the developed methodology for monitoring financial risks and calculating the residual value of financial risk is presented; the developed methods for quantitative and qualitative assessment of financial risks are presented; a methodology for determining the development of scenario analysis of financial risk assessment is presented.

Keywords: Analysis, Stability, Risk; Assessment; Losses.

I. INTRODUCTION

Business entities in the process of carrying out current and investment activities are faced with financial risks since they are an integral characteristic of their financial activities. Financial risk is a risk that is associated with the likelihood of unforeseen financial losses (decrease in profit, income, loss of capital, cash assets, etc. [1].

Financial risk is a characteristic of the financial activity of an economic entity, reflecting the uncertainty of the outcome of the situation and possible financial losses due to its unfavorable implementation.

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From this definition, it follows that the degree of financial risk is expressed by the probability of occurrence and concentration of undesirable external and internal circumstances that can lead to financial losses [11].

Various types of financial losses should be distinguished to further assess the degree of influence of potential financial risks on the achievement of the strategic and operational goals of an economic entity.

An organization's risk assessment is an important stage in their management process, which allows planning expenses for risk mitigation measures or reserves to compensate for damage in case of its implementation [12].

Risk assessment is carried out in order to determine the probability and size of losses characterizing the magnitude of the risk [3]. The correctness of the risk assessment depends on the implementation of both the operational plans of the organization and strategic ones. An inaccurate assessment of the risks significant to the organization may lead to bankruptcy [10].

In the process of conducting a risk assessment, it is necessary to calculate two significant indicators:

- probability of occurrence of risk in the period under review;
- the amount of damage that the organization will incur if the risk in question is realized.

These indicators can be calculated based on historical data using the statistical method1. In the absence of the information necessary for the calculation, it is advisable to resort to an expert assessment [13, 14].

The methodology for assessing possible damage from the implementation of a risk event will be largely determined by the specifics of the activities of the organization's unit in which it may occur. For example, the damage may be equal to not recouped expenses or lost revenue for a certain period [4].

Organizational risks should be assessed using a unified methodology, taking into account the individual characteristics of the risk event. If the risk recurs in the organization, it can be estimated from historical data using the statistical method. If the data are not available or insufficient to calculate the probability of risk and potential damage, an expert assessment can be used [15]. To assess unique risks for which there is no statistical information, it is possible to use exclusively expert forecasts, both in the probability of a risk event and in the amount of possible damage. Such risks include, for example, conducting a state reorganization in any field.

To assess this risk, experts at their discretion choose one of several probabilities of occurrence of events (low, medium, high, very high) [8].

When determining the maximum possible damage, various indicators, for example, annual profit, are taken as a basic indicator. Depending on the features of the upcoming events, the amount of possible damage is chosen, for example, from the maximum possible (10% of annual profit) to the minimum (0.1%) [16]. Then, using the selected indicators (probability of risk and damage from this event) determined by experts, the cost of risk is calculated. In addition, in the risk assessment process, you can use the so-called “non-financial indicators” (for example, the state of internal document management and reporting, staff experience, a continuing education system, relationships with customers and contractors, etc.) that have a significant impact on the financial condition of the organization [7, 17].

In addition to the above, in the process of assessing financial risks, it is necessary to be based on two methods - quantitative and qualitative, which together constitute an integrated assessment of financial risks.

One of the most effective quantitative methods for assessing financial risks is considered to be a method focused on the analysis of the financial condition of the organization. According to a recognized methodology, financial indicators are evaluated [5, 18], grouped into four blocks: indicators of payment ability and liquidity, indicators of financial stability, indicators of profitability, indicators of business activity.

One of the most popular and effective qualitative methods for assessing financial risks is:

- method of using analogues, used in case of lack of access to other methods; different subjectivity, as knowledge and experience of a risk manager are of great importance;

- a method of expert assessments, used when necessary to solve complex, non-standard situations, as well as when there is no necessary information for a quantitative risk assessment; in this case, the expert opinion is considered decisive. The final stage of risk assessment is the coordination of the cost of identified risks with the organization’s management. The final ranking of risks is best carried out taking into account the opinion of management or after its approval. This stage of the assessment can be carried out in absentia (for example, by e-mail) and in person (for example, through risk management committees). It is necessary to create such committees annually before the start of the budget process, and in the intermediate stages (for example, once a quarter) to organize correspondence coordination. The cost of risks agreed with the management is compared with the sum of the costs of measures for their management. If the first exceeds the second, the risks must be taken by the organization [9, 19].

II. MATERIALS AND METHODS

The amount of possible financial losses depends on many factors, including the nature of the financial transactions carried out, the volume of assets (capital) involved in them, the maximum level of the amplitude of the fluctuation of income with the corresponding types of risks. All financial operations of the organization (ongoing or potential) can be grouped by the size of possible financial losses - by risk areas.

Estimate the level of concentration of financial transactions in various risk areas by the size of possible financial losses. For this, the proportion of individual financial transactions in each of the respective risk areas is determined. For the final assessment of the risk level of the financial activity of the organization, the indicator “capital concentration coefficient in the zone of the corresponding financial risk” is used.

$$CCFR = \frac{CC_z}{C} \qquad (1)$$

where is

CC_z - the amount of capital of the organization associated with operations in the relevant areas of risk;

C - the total amount of capital of the organization [2].

Financial risk assessment, consisting of two stages:

- initial calculation of the amount of damage and the probability of its occurrence after the occurrence of a risk event;

- monitoring and reassessment of financial risks, calculation of their residual value, which is understood as the most probable damage in case of risk occurrence in the period under review during and / or after measures to minimize it.

The cost of risk is recommended to be estimated as the amount of possible damage multiplied by the probability of a risk event:

$$R = A \times p_1 + (A + B) \times p_2 \qquad (2)$$

where is

A and B are the possible damage when making various decisions;

p_1 and p_2 are the probability of a risk event.

III. RESULT AND DISCUSSION

The contents of the journal are peer-reviewed and archival. The journal publishes scholarly articles of archival value as well as tutorial expositions and critical reviews of classical subjects and topics of current interest.

The management of the organization must choose the right priorities and establish the optimal procedure for reassessing financial risks for it, which will optimize the costs of their management.

So, in the tasks of effective management of the financial activities of the organization in the face of risks, the task of re-evaluating and adjusting the budget for them is included. For this, it is necessary to divide all the financial risks inherent in the organization into groups according to the urgency of the assessment:

- financial risks common to the organization (for key processes in general);

- financial risks of individual departments of the organization;

- financial risks of introducing important changes (for example, risks associated with business reorganization, with serious technological changes);

- residual financial risks.

An assessment of the overall financial risks of an organization is appropriate for identifying and evaluating threats affecting all parts of an organization. In this case, it is necessary to coordinate these risks at the level of business owners (for example, the board of directors) once a year after the completion of strategic planning and before the formation of a detailed budget for the year.

Risks must be managed systematically, so it is worth regulating this process, setting the deadlines for its implementation and interest in the organization's leadership.

An initial risk assessment should be carried out on the basis of strategic planning that provides long-term targets, and the proposed measures to minimize risks and their costs should be taken into account in budget planning. This approach will allow:

- get away from a formal risk assessment in view of the relationship between the planned activities and the budgets of units, which will affect the ability to achieve goals set for the period;
- improve the quality of financial planning in terms of minimizing the likelihood of further unplanned expansion of the organization's budget.

The financial risks of individual units of the organization are those that are in the area of responsibility of the units. They need to be evaluated regularly and with the participation of employees of these units (sections). The frequency of assessment depends on the rate of change. This approach allows us to timely determine operational activities within the budget or to initiate an increase in its expenditure (for example, the transfer of funds from other items).

Financial risks associated with the implementation of important changes must be assessed before forming a project plan, including a budget and a detailed description of technical implementation. Such risks may be those associated with the implementation of large investment projects, the purchase (sale) of a business, or serious technological changes.

The assessment of residual financial risk is individual for each individual organization. Depending on its size and the criticality of the initially identified risks, the duration of monitoring and reassessment can be from several hours to one to two weeks. In this case, risk managers are responsible for the analysis and calculations; specialists from other departments are not involved [6].

The methodology for such an assessment is similar to the initial one, but the situation of the past period and the implemented measures to minimize risk are necessarily taken into account. Revaluation is carried out on the basis of the statistical data of the organization's divisions - risk holders. The results are reported to the management of the organization in writing, in exceptional cases an extraordinary in-person meeting of the risk committee is held.

It is necessary to begin monitoring and reassessing risks with a quarterly reassessment of significant risks. In the future, it is possible to extend the revaluation period depending on the life cycle of the organization's processes, its dynamism and other external and internal factors. The time spent by all participants in the process should be correlated with the result obtained. A risk assessment should also not take time commensurate with the organization's core business.

In the process of assessing financial risks, a scenario analysis is used that allows you to most accurately provide in the budget the amount to cover estimated losses. So, the following scenarios for the implementation of risk events for the organization are possible:

- pessimistic (maximum losses);
- most probable (most real - medium risk);
- optimistic (damage is minimal or absent). To consolidate these scenarios and determine the most likely damage, you must:
- assess the likelihood of each scenario being implemented, while an expert assessment (as for predicting the likely damage within each scenario) is sufficient, taking into account the internal and external conditions of the organization in the short term (for example, for the budget approval period - one financial year);
- based on the sums of the predicted damage (in three scenarios) and the probabilities of their implementation, calculate the most expected loss value if a risk event occurs

In the absence of a single amount of damage, you can focus on three scenarios, each of which will have its own damage and the likelihood of occurrence. Based on these data, it is necessary to calculate the expected risk value:

$$R_o = \sum_{i=1}^{z} P_i \times U_i \qquad (3)$$

where is

R_o is the expected value of risk, p .;

i - scenario number from 1st to 3rd (optimistic; most likely; pessimistic), units;

P_i is the predicted probability of the implementation of the i_{th} scenario, units (expert judgment), the sum of the probabilities of the scenarios is 1 (100%);

U_i - the predicted damage in case of risk implementation according to the i-$_{th}$ scenario, p. (expert review).

In assessing possible losses during the implementation of a risk event, it is necessary to take into account the error - deviation from the average amount of damage in three scenarios:

$$U_o = \sqrt{\frac{\sum_{i=1}^{n} (U_i - U_S)^2}{n-1}} \qquad (4)$$

where is

U_o is the deviation from the average amount of damage, p .;

i - script number from 1st to 3rd (optimistic; most likely; pessimistic), units; n is the number of scenarios, units;

U_i - the predicted damage in case of risk implementation according to the i-th scenario, p. (expert review);

U_s - average value of damage in three scenarios, p.

Deviation from the average amount of damage shows the range within which the possible values of the financial risk assessments are distributed. Next, you can determine its final grade. The final assessment option depends on the choice of the organization's management

In order to avoid excess reserves,

the final assessment of financial risks should be calculated as the difference between the expected value of risk and the deviation from the average amount of damage. For the most critical risk assessment, it is necessary to increase the expected value of the damage by the size of the deviation. The resulting value will show an unfavorable option from the most likely ones - a final assessment of financial risk.

If an organization manages many financial risks, then when conducting an assessment, it is advisable to rank the risks under study: the higher the final rating, the higher the rank, i.e. 1 - the highest rank.

The highest-ranking risks are to be minimized first. When assessing the expected damage, the error (possible deviation from the amount of loss) can be reasonably excluded from the calculations:

- if the organization is limited in funds and cannot afford an additional reserve (reserve for the amount of deviation) for compensation for losses from the implementation of risk events;

- if the financial risk to the core business of the organization is negligible.

It should also be borne in mind that if experts find it difficult to predict the exact probability of the implementation of a particular scenario or consider the scenarios as equally probable, then the risk can be estimated using a simplified scheme, i.e., without taking into account the probability of their implementation. However, in this case, the result will have some error.

IV. CONCLUSION

Thus, the assessment of financial risks is one of the primary steps in the process of managing them. Not only the current financial position of the organization, but also its strategic positions depend on the quality of the risk assessment.

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