

# INNOVATIVE METHOD OF RISK ASSESSMENT OF THE COMPANY'S ECONOMIC PROCESSES

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## ABSTRACT

*The article defines the levels of typicality of the company's income or expenses, which arose as a result of the risk in the past, and the probable amount of future income (expenses). The Matrix of economic activity risks was built on the basis of the separation of two factors: the level of materiality and the probability of occurrence of risk; this allows determining the situations of reserves forming for repaying company losses. A form of a management report on the risks of the company has been proposed, which sets as its task to pass to all interested parties information about those risks the probability of which and the extent of damage from occurrence of which can be assessed with a sufficient degree of reasonableness. The qualitative characteristics of the company's economic risk and methods for their evaluation are also analyzed.*

**Keywords:** Risk, Materiality, Reserve, Future Income, Future Expenses, Management Report.

## INTRODUCTION

The experience of leading international companies convincingly proves that the stability of business development and improvement of management efficiency is impossible without the active use of a risk-based management system, as an integral part of an enterprise management system, regardless of its size and specifics of economic activity. The system of risk-based management, first of all, is aimed at achieving the necessary balance between making profits and reducing business losses, and should be integrated into the general policy of the enterprise, its business plans and activities, which, in turn, will ensure the effectiveness of such management system.

## LITERATURE REVIEW

The beginning of the development of modern risk management techniques was the introduction of quantitative risk determination, which was developed in the early 1980s by S. Kaplan and B. Garrik (Probabilistic risk assessment procedures guide for NASA managers and practitioners, Washington (USA) (2002)). In their opinion, the risk consisted of three parts: a description of the situation, the likelihood of this situation and its consequences, which may be different for the same situation (Kullman et al., 2018).

We can identify the main factors that demonstrate the effectiveness of the implementation of the risk management of economic activities (Baum et al., 2017): 1) integration of risk assessment into strategic and operational processes, and, for which reason, managers of companies make the most informed decisions; 2) implementation of the most effective analytical technologies. Determination of possible risks at an earlier stage contributes to making more efficient and correct decisions, thereby reducing the likelihood of risks occurrence; 3) it is possible to measure and monitor certain types of risks, which greatly simplifies the risk management process; 4) reduction in the number of negative events compared to the industry average; 5) increase in the value of shares by reducing the cost of raising capital (Van Grembergen & De Haes, 2018).

Today there are a number of professional organizations that develop international standards in the field of risk management of business entities. These standards include: A Risk Management Standard (2002); Enterprise Risk Management-Integrated Framework (ERM) (2004); Basel II: International convergence of capital measurement and capital standards: A revised framework (2004); A Guide to the Project Management Body of Knowledge (PMBOK) (2004); ISO 31000:2009 “*Risk management-Principles and guide lines*” (2009).

## METHODOLOGY

It is necessary to pay attention that there is no and there cannot be a unified approach to risk management in an enterprise, caused by the presence of a specification of activities of business entities in each separate sector of the economy. For example, enterprises of the machine-building complex may be affected by the following specific risk factors: the unique nature of the product (individual production); investment intensity; integration (complexity) of technical means; changing forms of conditions and contracts; responsibility for manufactured products during the warranty period etc.

Regarding the assessment of the likelihood of risks and their magnitude, today in science and international risk management standards there is a significant number of different methods, among which the most common is the market value method (VaR), which shows the maximum damage a business entity is willing to bear at a certain point in time with a given probability.

Today, in order to calculate the probable risk in practice we use several methods of the market value method (VaR): the method of historical modeling (“*delta normal*”, “*manual method*”); the parametric model method (variational covariance model) and the statistical simulation modeling using the Monte Carlo VaR method (Salomone et al., 2017).

Use of the historical model to determine the future risk is impossible due to the fact that the business entity did not have similar types of risks as a result of past events.

The basis of the parametric model is the assumption that the actual distribution of the random variable corresponds to a certain theoretical pattern. Accordingly, conclusions on the possible dimensions of future risk are projected to the index established by the method of assumption.

The Monte Carlo VaR method is used for complex financial portfolios; therefore, we do not offer its use for the economic risks of business entities assessment (Le et al., 2017).

The above methods of the market value method (VaR) are quite difficult and it is advisable to use them in conditions of automating this process, due to the fact that when calculating the probability of risk and its magnitude, a very large number of different parameters are used, which also requires special professional training of workers, involved in risk management business activities in the company.

In our opinion, it is the use of the matrix method that will allow determining the factors influencing the size of the company's economic risk, namely, the importance of the information when making management decisions.

## RESULTS AND DISCUSSION

We believe that risk-based management is the only risk management system at all levels of the enterprise, which covers strategy, processes, people and technology. The task of risk-based management at an enterprise is to identify the causes of risks, to determine risk-forming factors, to assess the likelihood of both negative and positive results and to make management decisions aimed at minimizing potential losses and maximizing profits, respectively.

Despite the ever-growing competition, the decrease in the rate of return, the need in effective risk management of business entities in domestic industrial enterprises, a risk-based management is poorly developed compared to the bank and insurance sectors. Today, a considerable experience has been gained in risk management, but its use in domestic practice is caused by a number of problems, which include: the presence of unconventional risks; the complexity of assessing the risks associated with the constant changes in the level of state intervention in the economy, the instability of tax and customs legislation; the presence of barriers in obtaining complete and reliable information; the imperfect technical and software equipment for risk assessment; the low level of skills of management personnel.

In assessment of the probability of risk and its impact, data on events that were observed in the past are often used, which increases the objectivity of information for management needs. Information generated within the enterprise is more objective and provides better results than when using external information.

However, even in the case when internal data are used as baseline information for risk assessment, external information can be used as a means of control and for an in-depth analysis of the risk situation.

When assessing and predicting risk based on the results of past events, it is necessary to remember that risk factors that have acted in the past may change their properties over time. Risk management in an enterprise can become not only defender for an enterprise, but also a source of value added or a new profit center.

Determination of the level of typicality of income or expenses arose from the risk in the past, will determine the probable amount of future income (expenses) for which you need to create reserves.

Determination of the need to make reserves, we propose to use the probability of occurrence of risk and the level of importance established by the enterprise.

If the probability of occurrence of risk is 50% or more, making of a reserve is mandatory, and with less probability we suggest to analyze the level of importance. The level of importance at the enterprise can be set as uniform for all objects of management, as well as separately for expenses that may occur as a result of the effect of the risk of the economic activity of the enterprise.

For visual analysis, these calculations can be displayed on a risk map (matrix) (Table 1), on which both specified criteria are simultaneously combined.

Level of importance	No. in seq.	Risk	Probability of risk									
			10%	20%	30%	40%	50%	60%	70%	80%	90%	100%
Values more than level of importance	1	Risk A	◇	◇	◇	◇	▽	▽	▽	▽	▽	▽
	2	Risk B	◇	◇	◇	◇	▽	▽	▽	▽	▽	▽
Values less than level of importance	3	Risk C	□	□	□	□	◇	◇	◇	◇	◇	◇
	4	Risk D	□	□	□	□	◇	◇	◇	◇	◇	◇

Key:□: No reserves are made;◇: The professional judgment of the risk manager is used; ▽: Reserves are made.

The presence of any kind of risk indicates that management personnel must possess management tools for all the risks characteristic for the enterprise.

If it is impossible to automate the process of possible risks assessment and in the absence of the competence of management personnel, we offer the use of both individual and group methods of expert assessments, as well as the use of professional judgment of a financial director or another official who is responsible for probability assessment and predicted values of business risks

The risk is deemed to be material if it can affect the financial condition or cash flow or the results of the organization’s activities.

In order to assess the conditions for recognizing risks as material, a method is proposed for the effect of management reporting indexes on the most popular performance indexes of economic activity and the financial condition of an enterprise. There are generally accepted indicators for an organization’s performance assessment (indexes), which, firstly, are available to managers and, secondly, they usually have optimal and limiting values.

The economic literature contains a large number of indexes for performance and condition of the organization. The organization chooses for it self indexes depending on the strategic program, the goal set, the availability of information for assessment, and the managerial skills.

We recommend to business entities to fix in the risk management policy a list of indexes that they consider as sufficient to conduct an assessment.

Risk accounting through its reflection in the independent form of management reporting sets as its task to pass to all interested parties information about those risks, the probability of which and the extent of damage from occurrence of which can be assessed with a sufficient degree of reasonableness. Such a report, an example of which is presented in Table 2, should reflect both financial and non-financial information.

Risk name	Unit	Methods of assessment	At the beginning of the reporting period	Changes in the reporting period		At the end of the reporting period
				increase	decrease	
Risk of changes in the price of goods after the conclusion of the	\$	Analytical method		60000		60000

contract						
Risk of substandard goods supply	\$	Expert method	50000		33000	17000
Risk of insured delivery	\$	Statistical method		11000		11000

The proposed risk report for the reporting year is only a management report and contains information about the risks of economic activity due to the fact that the fact of economic life caused by the risk did not take place at the enterprise. This report is compiled only for the purpose of risks monitoring that occurred in past reporting periods and remain valid in the reporting period (as indicated by the index “*at the beginning of the period*”).

Indexes of changes for the reporting period in the risk report indicate the emergence of new types of business risks or a decrease in the effect of the existing business risk arising from the taking of risk management measures by the management of the company (Tetiana et al., 2018a:2018b).

At the moment, in international practice there are no generally accepted forms of risk reporting. This is due to the fact that such reporting is extremely complex and relies on a multitude of prerequisites and applies statistical methods of assessment (Tetiana et al., 2018).

Objective need for explanation and additions to the reporting appears in the process of the reporting data analysis, when it is necessary to explain the reasons as a result of which the financial results of the activity or the financial condition of the enterprise changed, which reasons are random and which are sustainable; which factors change depends on the enterprise itself, and which is determined by the external conditions of the enterprise; which can be adjusted and which can't be.

If it is impossible to determine a reliable risk assessment and its impact on reporting, it is necessary, in our opinion, to reflect in the explanatory notes to reporting: the nature of the risk and the expected period of its occurrence; uncertainties that exist on the date of performance and (or) the magnitude of the risk; inability to assess; the probable value of risk or range of assessed values, if they can be determined.

This is done so that the user of the financial reporting independently evaluates the existing risks according to personal experience and available knowledge. Having assessed the risk, the interested user independently adjusts the financial result of the reporting period.

The risk-adjusted financial result can be used when calculating various financial indexes characterizing the organization's activities in the reporting period (Nakashydzė & Gil'orme, 2015; Žižka et al., 2018).

Providing both internal and external users with complete information on operations with regard to risks, which makes it possible to reliably assess their possible impact on the financial position of an organization, should be the main task of reflecting such operations in management reporting.

First of all, it is necessary to focus on the description of the features of each concentration, on the risk management procedures and assessment of the acceptable level of risk. All these steps will generally allow for constant and independent monitoring and control of risks.

Partial reflection of qualitative information in the reporting in the form of a separate explanation for the management reporting is given in Table 3.

No. in seq.	Name of qualitative characteristics	Business risks
1	Ability of the enterprise to risk.	1) Difference between the contract and the customs value of the goods. 2) Risk of insured delivery.
2	Causes of possible risks.	1) Exclusion of fair value in the valuation of goods. 2) Presence of damage to assets sold.
3	Main activities of the enterprise in risk management.	1) Eliminating risk. 2) Risk insurance.
4	Risk assessment methods that are used.	1) Expert assessment. 2) Analytical assessment. 3) Statistical assessment.
5	Purpose of risk management.	Minimization of the impact on financial results.
6	Risk Management Policy.	Complete elimination of risk.

The quantitative characteristics of the risks of economic activity in accordance with the international standard should disclose generalized quantitative data on the risk to which an enterprise is exposed, on the basis of data generated within the enterprise and presented to the management of the enterprise and its owners.

### CONCLUSIONS

So, as you can see, this report is a complete description and provides information about the main risks of economic activity that took place at the enterprise, as well as measures taken to eliminate them, and the like. This report is compiled for higher authorities in order to assess the level of organization and the effectiveness of the system of risk-based management.

The current approach to the formation of information only partially satisfies user requests for decision-making and only in the reporting year. The proposed approach to the formation of indexes of the financial results of previous years suggests the transparency of information about the processes of profit making and its withdrawal carried out in previous reporting periods.

Prospects for further research is to take into account the concept of stakeholders in the economic risk assessment, especially the alpha stakeholders of the company. It is the construction of the Stakeholder Influence Panel that will help identify possible conflicts of interest and the formation of asymmetric information about risks.

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