

## IMPROVEMENT OF RISK MANAGEMENT OF INNOVATIVE PROJECTS

*Annotation. The paper presents characteristics of risk assessment indicators, which are the subject of an in-depth review in the process of management and organization of innovative projects, and which effectively help to determine the level of risk associated with the activity of enterprises.*

*Анотація. Наведено характеристики показників оцінки ризику, які є предметом ретельного розгляду в процесі управління й організації інноваційних проектів, а також допомагають ефективно визначати рівень ризику, пов'язаний з діяльністю підприємств.*

*Аннотация. Представлены характеристики показателей оценки риска, которые являются предметом тщательного рассмотрения при управлении и организации инновационных проектов, а также помогают эффективно определять уровень риска, связанный с деятельностью предприятий.*

*Keywords: innovative project, risk assessment method, balance sheet, income statement, expert evaluation methods.*

In recent years much attention in economic research is paid to the problems of innovation and entrepreneurship. Moreover, both problems are considered in theoretical and practical aspects. At the same time, despite the increased intensity of research in these areas, there are rather few innovatively active domestic enterprises. The basic scientific and technological elements of progress are inventions and discoveries. When new inventions are used in every field of human activity, they lead to creation of a new product or a new technology, i.e. making a product.

The aim of this paper is to describe the methods of managing risk of an innovative project and its detailed quantitative analysis based on theoretical considerations.

Often the need for consideration of certain risks is associated with the identification of risk factors and assessment of their impact. For this purpose, various methods can be used for identifying and assessing risks.

The main purposes of each company providing an innovative project are to determine risks and increase profitability.

Depending on the completeness of the information available to business entities, risk assessment methods can be divided into three groups based on the following conditions:

- certainty, when the information on the risk situation is reasonably complete, for example in the form of a balance sheet, income statement, etc.;
- partial uncertainty, when the information on the risk situation exists in the form of occurrences of risk events;
- complete uncertainty, when the information on the risk situation is completely absent, but there is an opportunity to attract professionals and experts for partial removal of uncertainty.

In terms of certainty, applied computational and analytical methods are used, mainly for calculation of risk indicators concerning management or accounting. In these cases, the indicators of risk assessment are expressed as absolute, relative and average values.

Indicators in the form of absolute values characterize the impact of risk events:

- directly in the form of cost (money), or expressed in material real (physical) terms;
- through balance relations, reflecting the results of financial and economic activities: the liquidity balance of the organization, the adequacy of financial resources for the formation in inventories, etc.

Initial information for risk assessment can be drawn from accounting businesses, especially the data of the balance sheet (Form 1), the fixing property and financial position of the organization on a given reporting period, and the profit and loss statement (Form 2) [1, p. 192].

Depending on the time of conversion, cash assets of a company are divided into four groups of liquidity risk (the Table).

Table

Groups of risks liquidity

Assets	
Minimal risk	The most liquid assets (A1): • cash; • money in the current account
Small risk	Quick assets (A2): • accounts receivable on maturity of less than 12 months

Middle risk	Slowly realizable assets (A3):
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	<ul style="list-style-type: none"> <li>• stocks OF VAT on acquired assets;</li> <li>• accounts receivable;</li> <li>• other current assets</li> </ul>
High risk	Illiquid assets (A4): <ul style="list-style-type: none"> <li>• intangible assets;</li> <li>• fixed assets;</li> <li>• long-term investments;</li> <li>• other non-current assets</li> </ul>

One can arrange a risk assessment structure of assets according to their degree of liquidity. In this situation, the absolute financial indicators are tools for assets of uniform composition elements of balance sheet items. A risk factor is the lack or excess of funds on certain groups of assets, and its consequence is the loss of time and cost in the conversion of assets into cash. This can lead to limited opportunities of the organization to fulfill obligations.

In relative terms, risk is characterized by the magnitude of potential losses, attributed to a database, which for convenience reasons might be the property or entrepreneur status, the total cost of resources for this type of business, or the expected return (profit) on entrepreneurship.

As a basis for determining the relative magnitude of risk one should use:

the value of fixed assets and stock-in-trade;

planned total cost for this type of business, keeping in mind both the operating costs and capital expenditures;

current income (profit).

The absolute figure in the numerator of the resulting ratio is called current or comparative. The absolute figure in the denominator is called the base or base of comparison. They are expressed in relative performance ratios, percentage, etc.

The mean value of risk is the generalized measure, which finds expression in efficient causes, risk factors and patterns of entrepreneurship. Thus, there is a smoothing between the differences of the results of individual entrepreneurs and those inherent in the whole mass of entrepreneurs in a certain field of activity by any single feature. For complete and comprehensive understanding of the risks of entrepreneurship by a number of essential features as a whole a system of averages is necessary.

In the case of partial uncertainty risk is considered to be a probabilistic category, so in these cases it is advisable to use probabilistic and statistical methods of risk assessment. When using these methods the probability and statistical indicators of risk assessment are calculated.

Probability is a measure of the probability of occurrence of a risk event and its consequences. Calculation of these indicators is usually carried out on the basis of frequency of the risk event that requires a certain amount of background information. The consequences of risk events are recorded in the form of point or interval estimates. It is important to note that the probability parameters may be included in the design to account for the relative indicators of the nature of the business environment or, alternatively, be composed of relative indicators to assess the likelihood of certain results of operations.

A statistical indicator is a measure of the expected average values of results and their possible deviations. This group usually includes parameters of the relevant laws of distribution of random outcomes of performance and therefore it is less informative, but also requires less initial information to assess the impact of risk events [2, p. 7].

Under conditions of complete uncertainty the expert methods of risk assessment can be used.

So, in the conditions of unstable environment, where the repetition of the economic situation for an entrepreneur in the same conditions is not practicable, and there is no information on possible occurrence of risk events, subjective methods can be used for expert estimates, judgments and expressing personal experience, expert opinion of a financial manager, etc. Expert evaluation methods make it possible to determine the levels of financial risk in the case when the company lacks the necessary information to carry out calculations or comparisons. These methods are based on a survey of experts (qualified insurance, tax, financial officers, investment managers, employees of specialized firms), followed by statistical analysis of the survey results [3, p. 11]. The survey should focus on certain types of risks identified by this procedure.

Expert evaluation of the risk level is not a solution, but only useful information to help make an informed decision. A risk manager can only make a decision on the level of risk on the basis of his preferences, and he is responsible for them.

Expert evaluation methods are widely used for determining the levels of inflation, interest rate, share, exchange, investment and other types of financial risks [1, p. 56].

Expert methods provide a fast and not time-consuming and labour-intensive way of getting the information needed to make managerial decisions.

The method of expert estimations is used in cases when:

- 1) the length of the original time series is insufficient to evaluate using economic and statistical methods;
- 2) the relationships between the studied phenomena are qualitative in nature and cannot be expressed with the help of traditional quantitative measuring instruments;
- 3) input information is incomplete and cannot predict the impact of all factors;
- 4) emergency situations require quick decision-making. The essence of expert methods is an organized collection of opinions and suggestions of experts followed by the responses received and the formation of the results.

The stages of the expert survey are the following:

- 1) statement of purpose of the expert survey;
- 2) selection of the basic composition of the working group;
- 3) development and approval of technical specification for the expert survey;
- 4) development of a detailed scenario of the collection and analysis of expert opinions, including both a particular kind of expert information, and specific methods of analysis of that information;
- 5) selection of experts in accordance with their competence;
- 6) formation of an expert committee;
- 7) collection of expert information;
- 8) analysis of expert information;
- 9) interpretation of the results and preparation of a report;
- 10) decision, i.e. choosing the alternatives.

A special survey on risk assessment at an enterprise is conducted considering a new innovative project. Among the assembled experts there can be: CEO, Executive Director, Deputy General Director for Sales, Deputy Technical Director,

Chief Engineer, Production Manager, Chief Accountant and the managing staff. In such a way the result will describe the actual situation of risk probability.

But the use of information obtained from the experts is rational if transformation into a form suitable for further analysis is possible. The formalization of the information obtained from experts, should be directed to the preparation of the solution to such problems, which cannot be fully described mathematically.

In conclusion, it should be noted that the effectiveness of the method of expert assessment is the most suitable and simple for any enterprise. But the proposed ways to analyze risk will enable managers and leading specialists of industrial enterprises to successfully apply their researches of risk, because they are not full enough. It can be done more accurately by specialists in risk management.

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