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TYPES OF RISKS BY AREAS OF PROJECT FINANCING

ВИДИ РИЗИКІВ ЗА НАПРЯМАМИ ПРОЕКТНОГО ФІНАНСУВАННЯ

***Анотація:** Метою статті є поглиблення теоретичних основ ризиків проектного фінансування та розробка пропозицій щодо їх систематизації за видами. Проаналізовано існуючі підходи до визначення класифікаційних характеристик проектних ризиків. Визначено їх відмінні риси. Управління ризиками фінансування проекту здійснюється на всіх етапах його життєвого циклу і пов'язане з такими складовими, як терміни реалізації, бюджет проекту та очікувані результати. На основі проведеного аналізу запропоновано типологію ризиків за напрямками проектного фінансування з урахуванням окремих процесів управління.*

***Abstract:** The purpose of the article is to deepen the theoretical foundations of project financing risks and develop proposals for their systematization according to types. Existing approaches to determining the classification characteristics of project risks have been analyzed. Their distinctive features have been identified. When grouping risks in project financing, it is worth assuming that the latter covers the cost of the capital invested in the project and affects the possibility of obtaining a certain income, which, accordingly, can generate profit. The importance of the issue of identifying investment project risks is determined by the fact that the project is probabilistic in nature, and the financial resources involved are significant and limited. Project financing risk management is carried out at all stages of its life cycle and is associated with such components as implementation dates, project budget and expected results. It should be understood that the earlier possible risks are*

identified, the sooner it will be possible to reduce the level of their negative impact on the project. Based on the analysis conducted, we proposed a typology of risks by areas of project financing taking into account certain management processes with the separation of their types. Grouping project financing risks by type is necessary at the first stage of their analysis. In the future, given the purpose of the analysis, it makes sense to detail the risks by type. The classification of project financing risks allows not only to deepen their theoretical foundations and carry out multi-faceted analysis, but also to choose the appropriate tools for influence. In the economic literature, risks are classified based on various characteristics, which can be generally grouped by such types as: phases of the project life cycle, level of project feasibility, nature of detection, sources of financing, level of significance and acceptability, etc. However, it is important to understand that in the process of detailing, specific types of risks can simultaneously belong to different types and be mutually dependent. Based on these features, it is considered advisable to classify risks by areas of project financing. In further research, it is advisable to substantiate the methodology for analyzing project financing risks in accordance with their classification features.

Keywords: *typology, characteristic features, investment project, project financing, project risks, area of risks, typology of risks, species of risks*

Ключові слова: *типологія, характерні ознаки, інвестиційний проєкт, проєктне фінансування, проєктні ризики, область ризиків, типологія ризиків, види ризиків*

Introduction. The success of investment projects largely depends on the effectiveness and adequacy of the mechanism for their financing to modern requirements. The problem is that investment projects to which the project financing methodology is applied are capital-intensive and long-term, and therefore high-risk. In the process of project implementation, especially at the initial stage, an important issue is determining the methods and means of financing it with the identification and effective distribution of risks between all project participants. That is why there is a need for a clear systematization of project financing risks by types and types. The debatability of issues regarding the classification of project risks, a large number of approaches to determining

their types and types determines the relevance of the selected issues, but the lack of scientific works in Ukrainian sources on the study of project financing risks proves the need for scientific research in this direction.

Formulation of the problem. Project financing is associated with various risks. At the same time, despite the significant domestic and foreign experience of risk management in managing investment projects, there is currently no methodological unambiguity in determining their typology and types. At the same time, the theoretical foundations of project financing risks remain beyond the attention of domestic researchers.

Analysis of recent research and publications. The definition and analysis of risks, the justification of

their classification features and methods of managing them were covered in the works of such scientists as D.I. Golubev, I.S. Ishchenko, S.M. Kozmenko, L.A. Lyakhovich, M. Moore, D. Miloshevych, D.S. Saplina, S.A. Sheludko, T.A. Vasilyeva, A.O. Yepifanov and others.

The purpose of the work. The purpose of the article is to deepen the theoretical foundations of project financing risks and develop proposals for their systematization according to types.

Summary of the basic content. The importance of the issue of identifying investment project risks is determined by the fact that the project is probabilistic in nature, and the financial resources involved are significant and limited. Project financing risk management is carried out at all stages of its life cycle and is associated with such components as implementation dates, project budget and expected results. It should be understood that the earlier possible risks are identified, the sooner it will be possible to reduce the level of their negative impact on the project.

M. Moore in his works argues that over the next decade, risks associated with cyber and digital technologies, changes in labor market expectations, and growing geopolitical tensions will shape the corporate landscape. To effectively manage risks, project managers must bring their unique perspective to the risks and threats that can be expected in the coming months and years [3]. However, the crisis environment makes its own adjustments, which requires additional research on project risk management.

The main purpose of risk identification is to identify, recognize and describe risks that can help or hinder an organization in achieving its objectives. In this context, the following factors and the relationships between these factors should be taken into account:

- tangible and intangible sources of risk;
- causes and events;
- threats and opportunities;
- vulnerabilities and opportunities;
- changes in the external and internal context;
- risk indicators;
- nature and value of assets and resources;
- consequences and their impact on objectives;
- limitations of knowledge and reliability of information;
- factors related to time;
- biases, assumptions and beliefs of those involved in risk management [4].

Risk identification is important at all stages of the project life cycle, as it allows you to identify key issues and provide a clear understanding of the overall state of the business. The result of risk identification is the creation of a risk register. The risk register is a list of project risks and their main characteristics, this document and/or model includes the names of risks and their inherent properties. The risk register should be constantly refined and detailed throughout the project. It can be common to several projects and become an invaluable archive that will be used in future projects.

The peculiarity of project risk analysis is to obtain and study the

necessary information about the structure, properties of the object and existing risks and to substantiate the conclusions obtained. The collected information should be sufficient to make informed decisions at the following stages. Usually, when studying project risks, two main complementary types of risk analysis are used: qualitative and quantitative. Qualitative analysis is aimed at determining (identifying) factors, industries and types of risks. The final results of qualitative risk analysis serve as initial information for quantitative analysis. Quantitative risk analysis allows you to numerically determine the size of individual risks and the risk of the enterprise as a whole [1, 6].

As Semenova S.M. notes, the classification of risks should fully break the essence of the risk, distinguish its varieties and features [5, p. 43]. In this context, it makes sense to explore scientific sources on revealing the essence of project risk.

A number of authors, characterizing project risks, focus on such features as:

- the degree of danger with the corresponding consequences for losses and damages, which are measured by the frequency and probability of occurrence [2];

- the cumulative effect of the probabilities of uncertain events that affect the achievement of project goals;

- the probability of adverse financial consequences, as a result of which the expected returns on invested investments are reduced.

To identify the characteristic features of project financing risks, it makes sense to assume that the latter affect the ability to receive certain

income that can cover the project's costs of invested capital and, accordingly, generate profit.

The technology and tools of project financing used to achieve the goal of an investment project are usually associated with a large number of different types of risks, which can be generally grouped according to the following characteristics:

- phases of the project life cycle (risks of the project initiation phase (pre-investment phase), risks of the project implementation phase (operational phase), risks of project completion;

- level of project feasibility (risks of planning project activities, risks of project implementation);

- nature of risk identification (traditional and specific risks);

- level of risk significance (most significant risks, moderate risks, least significant risks);

- level of risk acceptability (acceptable risks, unacceptable risks);

- sources of project financing (risks from external sources of project financing, risks from internal sources of project financing).

The given typology of project financing risks is generalized and, accordingly, can be classified in more detail by type of risk. It is important to understand that certain risks may be interrelated. For example, if risks are grouped by phases of the investment project life cycle, then such a type of risk as external environment risks can be studied from the point of view of changes in the macroeconomic environment (country risk), for example, changes in the monetary, budgetary and tax spheres, in the sphere of currency regulation, transformations

in the institutional environment (legislation, judicial system, supervision system), etc.

Macroeconomic risks should be monitored at all stages of the project life cycle, but at the initiation stage, when it is necessary to formulate the project's problems, determine its goals and results and make a decision on the amount of financing, the analysis of macroeconomic environment risks is of the greatest importance.

Given the peculiarities of project financing, the key factors for analyzing macroeconomic environment risks are industry risks. Such risks are related to the development trends of the industry where the investment project is implemented, both at the global and local levels. As part of this analysis, market risks are substantiated, including competitor risks. In particular, the management of such risks may be associated with strengthening long-term competitive positions, for example, through the creation of barriers to entry into the market due to the conclusion of long-term agreements with suppliers due to the long terms of project implementation. A related risk in this context may be supplier risk. The significance of this risk at the operation stage of an investment project is quite significant, since risks of delivery delays must be taken into account (for example, risks of customs clearance, changes in supply volumes and prices, etc.). The most global consequences of the implementation of supply risks may be such as delay in project implementation deadlines, increase in project costs, change in operating cash flows.

The most discussed type of risk is commercial risk, or the risk associated with the failure of the project company to fulfill its financial obligations to creditors.

The concept of non-commercial risks in scientific sources is used to assess the probability of financial losses due to the influence of administrative, political and military risks. Non-commercial risks in project activities are quite often and justifiably attributed to risks associated with various natural disasters (environmental risks).

However, such risks do not have a direct impact on the implementation of project financing, in particular, we are talking about their impact on the financial condition of the project organization, obstacles to the fulfillment of contractual obligations, etc. From an economic point of view, such risks can be attributed to sources of uncertainty rather than to project financing risks. Based on the analysis conducted, it is possible to propose a typology of risks by areas of project financing taking into account certain management processes with the separation of their types according to the specified types (table 1).

As shown in table 1, the operational risk area is related to the probability of events that arise as a result of changes in project activities. There is an opinion that operational risk is essentially the risk of losses as a result of inadequacy or failures of internal processes under the influence of external factors. Operational risks in project financing are considered from the point of view of project operation and maintenance, identifying the following problem areas: – problems

with the project budget and the schedule of work performed (for example, unsatisfactory operational management, violation of contractual obligations for performance, etc.);

- problems with the project life cycle (for example, increased costs and project deadlines);

- problems with counterparties, which, for example, may arise due to management shortcomings in the project company.

The fiscal risk area covers a number of commercial contracts that underlie the project's revenue profile (e.g. concessions, contracts, procurement and supply agreements) and gives rise to the following problems:

- revenue declines (e.g. deterioration of competitive position,

changes in product price or output, poor contractual terms);

- supply or inventory problems (e.g. rising raw material prices, shortages and disruptions of supplies or raw materials).

The analysis of the financial sustainability risk area of the project company focuses on debt repayment issues. Key events in this risk area can be identified by the occurrence of the following issues:

- debt repayment or cash flow liquidity problems (e.g., due to cash shortages or insufficient revenues);

- refinancing problems (e.g., inability to refinance a project);

- inflation, interest rate or currency problems (e.g., interest rate or exchange rate volatility, inflationary processes).

Table 1

Typification of risks by areas of project financing

| Project financing areas | Types of risks |
|---|--|
| Operational risks | -liquidity risks associated with the movement of cash and the ability to convert the assets of the project company into cash; - the risk of the counterparty or the risk associated with the non-fulfillment of financial obligations by the other party (the degree of risk depends on the nature and type of financial transactions); - risks of project shareholders, which are associated with losses on invested assets. |
| Budget risks | - reserve risk, i.e. it is assumed to create certain reserves in case of problems with project resources in order to increase the predictability of expected results; - supplier risk associated with delivery delays (for example, risks of customs clearance, changes in supply volumes and prices, etc.); - consumer risk is the risk associated with the consumer's failure to fulfill his obligations regarding the goods (services) supplied to him. |
| Risks to the financial stability of the project company | - the risk of non-payment of debt by the project company on loans and credits provided; - the risk of sensitivity of cash flows to crisis phenomena in the economy (political risks, legislative risks, inflation risk, interest rate risk, currency risks, etc.); - the risk of refinancing or inability to extend its debt obligations in connection with the repayment of new debts. |
| Project structure risks | - risk of compliance of the financial structure and legal framework of the project; - country risks; - risk of force majeure. |

Source: compiled by the authors

Project structure and other source risks involve an assessment of the project's financial structure, its compliance with applicable laws and

regulations, as well as force majeure and country events and risks. Although relatively low in probability, such risks can significantly affect the project's

performance and cash flows, especially given the nature of most project finance transactions. Thus, these risks can generate losses. The challenges that arise in identifying structural risks can be characterized as follows:

– country issues or political issues (e.g., financial insolvency of the government of the country where the project is being implemented, adverse political events that prevent revenue collection);

– force majeure or other events (e.g., uninsured property losses due to natural disasters, war, terrorism, changes in the law);

– legal and environmental compliance issues (e.g., legal deficiencies affecting the project company's ability to provide services; debt, environmental, and related issues that limit the feasibility of the project).

The study of project finance risk areas is not exhaustive. There are other destructive factors that can cause other risks (for example, industry risks, cybersecurity, risks of institutional environment transformation, currency regulation risks, etc.). However, the above typology of risks fully covers the risks of sponsors, and therefore the focus is on the specifics of project financing.

Conclusions. Grouping project financing risks by type is necessary at the first stage of their analysis. In the future, given the purpose of the analysis, it makes sense to detail the risks by type.

The classification of project financing risks allows not only to deepen their theoretical foundations and carry out multi-faceted analysis, but also to choose the appropriate tools for influence.

In the economic literature, risks are classified based on various characteristics, which can be generally grouped by such types as: phases of the project life cycle, level of project feasibility, nature of detection, sources of financing, level of significance and acceptability, etc. However, it is important to understand that in the process of detailing, specific types of risks can simultaneously belong to different types and be mutually dependent. Based on these features, it is considered advisable to classify risks by areas of project financing.

In further research, it is advisable to substantiate the methodology for analyzing project financing risks in accordance with their classification features.

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