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ESSENCE AND TYPES OF RISKS OF INVESTMENT PROJECTS FROM CONSTRUCTION OF AUTOMOTIVE ROADS

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СУТНІСТЬ ТА ВИДИ РИЗИКІВ ІНВЕСТИЦІЙНИХ ПРОЕКТІВ З БУДІВНИЦТВА АВТОМОБІЛЬНИХ ДОРІГ

The essence of the risk of investment projects of the construction of automobile works is determined. The main features of investment projects for the construction of highways are generalized, in particular: project product, a large number of investors, risks of sources of funding, a high level of government regulation, a significant dependence of the project on the time of work and weather conditions, strategic restrictions. The flaws of public-private partnership in road maintenance infrastructure projects, which are related to risks, such as market and financial, political and social, are substantiated. The main types of risks of investment projects of construction of highways and measures to reduce their influence are determined: insurance objects, permanent monitoring of

expected changes in legislation, financial responsibility of the project organization for making errors and miscalculations in the project-budget documentation, customer control of the schedule for the construction work, funding according to the schedule of work and monthly plan allocations. The most influential risks for investment projects of road construction under the condition of public-private partnership are: the risk of unreliability of project participants, the risk of not receiving the project revenue, the country's risk. The potential corruption risks in the field of procurement of works and services for construction, repair and maintenance of highways are determined. Are offered directions of leveling of factors of corruption risks in sphere of realization of investment projects of road economy. The ways to reduce risks and increase the attractiveness of road construction projects based on the principles of public-private partnership are substantiated: identification of priority projects for the priority attraction of private investments; simplification of procedures for registration of rights to use land plots for construction of roads; development of a mechanism for funding PPP projects and guaranteeing a minimum income to a private partner from the state; solving discussion issues and approving the principles of functioning of toll roads.

Визначено сутність ризику інвестиційних проектів будівництва автомобільних робіт. Узагальнено особливості інвестиційних проектів будівництва автомобільних доріг, зокрема: продукт проекту, велика кількість інвесторів, ризику джерел фінансування, високий рівень державного регулювання, значна залежність проекту від часу робіт і погодних умов, стратегічні обмеження. Обґрунтовано недоліки державно-приватного партнерства в інфраструктурних проектах дорожнього господарства, які пов'язані з ринковими та фінансовими, політичними та соціальними ризиками. Визначено основні види ризиків інвестиційних проектів будівництва автомобільних доріг та заходи щодо зменшення їх впливу, такі як: страхування об'єктів, постійний моніторинг очікуваних змін у законодавстві, фінансова відповідальність проектно-організації за допущені помилки та прорахунки в проектно-кошторисній документації, контроль замовником графіку виконання робіт з будівництва, фінансування коштів згідно графіку виконання робіт та помісячного плану асигнувань. Встановлено, що найбільш впливовими ризиками для інвестиційних проектів будівництва автомобільних доріг за умови державно-приватного партнерства є: ризик ненадійності учасників проекту, ризик неотримання передбачених проектом доходів, ризик країни. Визначено потенційні корупційні ризики у сфері закупівлі робіт та послуг з будівництва, ремонту та утримання автомобільних доріг. Запропоновано напрями нівелювання чинників корупційних ризиків у сфері реалізації інвестиційних проектів дорожнього господарства. Обґрунтовано основні шляхи зменшення ризиків та підвищення привабливості реалізації проектів будівництва автомобільних доріг на засадах державно-приватного партнерства, зокрема: визначення пріоритетних проектів для першочергового залучення приватних інвестицій; спрощення процедур оформлення прав користування земельними ділянками для будівництва доріг; розробка механізму фінансування проектів державно-приватного партнерства та гарантування мінімального доходу приватному партнеру з боку держави; вирішення дискусійних питань та затвердження принципів функціонування платних доріг.

Keywords: *risk; investment project; investment activity; financing; public-private partnership.*

Ключові слова: *ризик; інвестиційний проект; інвестиційна діяльність; фінансування; державно-приватне партнерство.*

Formulation of the problem. In modern conditions, the development of Ukrainian highways affects the volume of internal and international road haulage, which contribute to the development of the industrial sphere in the country, cultural relations, tourism and are an essential source of cash receipts. The development of road transport is impossible without

further expansion of the network of roads, corresponding improvement of transport-operational characteristics of road constructions and ensuring their high reliability.

The need to stimulate the development of motor roads in Ukraine requires the development and implementation of investment projects for the construction of highways.

The investment activity of enterprises, which is associated with the development and implementation of construction of highways projects, is characterized by a significant investment projects implementation period, the presence of a large number of factors that determine the final results of these projects, the variability of results in time, the partial irreversibility of the process of investment, etc. Therefore, most enterprises, that implement such projects are constantly faced with investment risk, which is seen as a negative, but its inherent feature. Today there are many investment projects for the construction of highways, which realize the enterprises, are proving to be unsuccessful: the size of the financial results for the size of the investment projects are much smaller than their planned volumes. This is due to the fact that in the process of making investment decisions and when justifying the choice of the best option, among several alternative developers of investment projects are insufficiently consider the risk factor. The fuller account for the risk factor in the process of development and implementation construction of highways at enterprises needs deepening of representations from the construction of highways and factors that predetermine it.

Actual scientific researches and issues analysis. Approaches to the assessment and analysis of investment risks were considered in the works of local and foreign scientists as V. Abchuk, D. Bailey, V. Bondariev, A. Voronin, P. Hrabovy, A. Dubrov, R. Cantillon, M. McCarthy, D. Mesen, T. Khachaturov, R. Hizrich, L. Sharshukova and others. However, the issue of studying the essence of the risks of investment projects the construction of highways is relevant and important, as investors, above all, evaluate the result of capital investments, adjusted for project risks.

Formulating the goals of the article (statement of the task). The purpose of the article is study of features, nature and types of risks investment projects of the construction of highways.

Presentation of the main research material. The need to analyze the risks of an investment project is that investment projects are developed on the basis of certain predictions concerning a capital and current volumes of sales of products, prices of goods and services, etc. Regardless of the quality and quantity of these predictions, the future development of events is always ambiguous, so the practice of developing investment projects addresses aspects of uncertainty and risk.

Risk is often understood as a measure of uncertainty in obtaining the expected incomes of given investments. There is always a risk in a market economy. If you specify a common definition of risk to analyze the project, the risk of the project is this is a measure of uncertainty in obtaining the expected rate of income when implementing a specific project.

Project risks which implements or plans to implement the enterprise which leads to the principle impossibility absolutely appreciate the significance general performance indicators and feasibility of implementation investment of these investment projects due to uncertainty related factors which determine the value of these indicators [1].

Project risks are due to features of the life cycle of the project. To assess the risk when choosing an investment variant, it is possible to apply the method of expert risk assessments in different phases of the project. In analyzing the risks in the pre-investment phase, are evaluated the financial and economic viability of the project, organizational and technical capacity, functions and tasks of the main participants of the work being carried out, level of guarantees for investments and loans. The project management structure is evaluated in the investment phase, the course of its implementation and the quality of project work. In the operational phase, factors are subject to evaluation which negatively affect the implementation of the project: delay construction, cost overruns, inconsistency in funding, counterparty's failure, state intervention, occurrence of losses, higher prices for raw materials and energy, unqualified personnel management.

The risk analysis in the pre-investment phase underlies the choice of investment options, however, risks are predicted and in the investment and operational phases.

The risk can be divided into two categories: by level and time. Various investments provide different income level. If the case is quite reliable then it is hard to expect high incomes. But if you are offered to invest in unreliable but risky business, then it is naturally required high income, that is investors should receive compensation for risk.

The factor of time also significantly affects the level of risk. Cash is more important for an investor than the money in the future. When an investor invests his capital in certain business, he always risks or feels uncertain that capital in the future will bring the expected profit. And then longer the deposit period, the greater the risk, that is, the risk is a growing function of time [2, pp. 304–315].

Development and implementation of investment projects for the construction of highways requires the introduction of new mechanisms for raising funds in the development of transport infrastructure, one of which is a public-private partnership (PPP). In Ukraine today are not established clear institutional and regulations which would regulate the mechanism of state financing joint projects for the construction of highways and there was a distribution of risks. Instead, funding mechanism for on terms of concession and distribution of risks between participants in any (regulatory and legislative unapproved) proportions is indicated only in the concession contract. The less the state makes financial resources during the construction of the road, the greater the risks and financial expenses it lays upon itself, so one of the ways to solve this problem is the development of an optimal ratio at the legislative level (shares) of financial resources by the state and the concessionaire (investor) and fair distribution arrangement of risks between entities concession agreement [3].

Projects for the construction of highways are a special kind of investment projects and differ from most projects such characteristic features:

1. Project product. At attracting private investors, ownership does not go to the owners of funds. The investor receives cash receipts as a result not receiving in pure form property and unlimited right of exploitation (or the right to receive income from exploitation).

2. A large number of investors. In a typical project, project owner attracts investors, choosing the most convenient and cheap source of funding (banking, other forms of borrowing, own funds). In the construction of roads in most cases, foreign shareholders are attracted to the so-called shareowners physical for coinvestors and legal entities through bonded loans.

3. The risks of financing sources, since in the construction of roads, the project itself cannot be a mortgage base.

4. The high level of government regulation. There are a number of special laws that regulate both the schemes and the financial aspects of such projects.

5. Number of projects. In fact, the road construction project is a project portfolio (projects related to obtaining a land plot and preparing it for construction, projects obtaining permits and other documents, work on architecture and design, construction and processing, organization and projects related to receiving a profit, that is, directly selling the right of travel).

6. Significant dependence of the project on the time of work and weather conditions. Weather conditions are strongly influenced by building projects, in particular, during the winter, road construction works are practically not carried out.

7. Strategic constraints, including the transfer of a project product to private ownership, are impossible [4].

The main risks affecting the commercial success of investment projects for the construction of highways can be attributed: the risk of a project participant, the risk of quality management, the risk of not receiving the project revenue, the risk of using poor quality materials, the risk of non-compliance with the construction technology, the country risk, the risk of natural disasters, the risk of negative environmental effects, and others [5].

The most influential risks for the investment of public-private partnerships are: the risk of insecurity project participants, the risk of non-receipt by the project proceeds, country risk.

The risk of unreliability of the project participants are usually seen in the possibility of unexpected termination of the project, due to:

- untargeted spend of funds intended for investing in this project;
- the financial instability of the firm which implements the project (insufficient provision of own working capital, insufficient coverage of short-term debt by turnover, lack of sufficient assets for property loans, etc.);
- unfairness, insolvency, legal incapacity of other project participants (for example, construction organizations, suppliers of raw materials or consumers of products), their liquidation or bankruptcy.

The risk of non-receipt of the revenue projected by the project is due to the technical, technological and organizational decisions of the project, as well as random fluctuations in production volumes and prices for products and resources.

The risk of non-receipt of the revenue projected by the project decreases:

- when receiving additional information on the degree of implementation and effectiveness of the new technology, etc.;
- in the presence of representative marketing research, which confirm the moderately pessimistic nature of the demand and prices adopted in the project and their seasonal dynamics;
- in the case where the project documentation contains a project of organization of production at the stage of its development.

The country's risk is usually perceived as an opportunity:

- confiscation of property or loss of ownership in case of redemption at a price below the market value or provided by the project;
- unforeseen changes in the legislation that impairs the financial performance of the project (for example, tax increases, stringent requirements for production or production compared to those envisaged in the draft);
- changes in staff in public administration, which treats indirect action legislation.

Public-private partnership has several disadvantages in infrastructure projects in the road sector:

1. Market and financial risks:

- the higher cost of capital and the acceptance of additional risks by a private partner will provide for their compensation in the course of the project implementation, which may increase the cost of the state or the price of the service for the consumer;
- the existence of a limited number of private partners capable of implementing a project may limit the competition required for a cost-effective partnership;
- the profitability of projects depends to a large extent on market factors and may vary, which may lead to the impossibility of compensating for costs incurred or premature termination of the project;
- possible reduction of profitability of state enterprises in case of transfer of the most attractive objects of

infrastructure to private investor.

2. Political and social risks:

- State responsibility remains and citizens will continue to consider the government responsible for the quality of services;
- projects can be more politically or socially complex for introducing, if necessary, tariff increases, reduction of the labor collective, allocation of land or resettlement, etc.;
- a private partner will have the experience in determining the conditions for project implementation and greater access to information about the project during its implementation, which will complicate state and public control [6].

Possible risks of construction investment project reconstruction and overhaul of separate sections of the road are given in Table 1.

The special kind of risks which exist in the implementation of investment projects of road construction there are corruption risks in the field of procurement of works and services for the construction, repair and maintenance of highways.

Table 1. The risks of an investment project for the construction of highways and measures to reduce their impact

| Type and type of risk | Possible negative consequences | Measures to reduce risk exposure |
|-----------------------------|--|--|
| Force majeure circumstances | Losses from natural disaster | Insurance objects |
| | Changing the political situation and unpredictable government actions | |
| Political | Transfer deadlines for project approvals | Permanent monitoring of expected changes in legislation |
| | Transfer of terms of redemption of land plots | |
| | Changes to laws affecting income | |
| Technical | Mistakes of design and budget documentation | Financial responsibility of the project organization for making errors and miscalculations in the project-budget documentation |
| Construction | Default supplier, defects in equipment, technology; | Customer control of the schedule for the reconstruction work |
| | Breakdown of terms for reconstruction works due to the contractor's fault. | |
| Environmental risks | Damages, compensation costs of environmental damage | Insurance of objects |
| Financial | Unfinished work on the overhaul: | Funding according to the schedule of work and monthly plan allocations |
| | - not qualitative and timely performance of road pavement work; | |
| | - low-quality and untimely arrangement of the edge of artificial structures; | |
| | - low-quality and timely provision of transport infrastructure development. | |

Significant reduction potential corruption risks in the procurement of works and services in construction, repair and maintenance of highways possibly by attracting qualified consulting engineer, taking the experience of technically developed countries and the use of standard contract work. The involvement of an independent third party will allow the customer to qualify in terms of the subject of the purchase and the type of work, to avoid mistakes and inaccuracies in the tender documentation, to remove the preconditions for the emergence of potential corruption risks in the quality assurance and control work (conspiracy between the customer and the performer of works or services) [7].

The following factors of corruption risks can be distinguished:

1. Inconsistency of the Law of Ukraine "On Public Procurement" [8] with Directive 2014/24/ EC of the European Parliament and of the Council of 26 February 2014 on public procurement and repeal of Directive 2004/18/ EC in part which concerning of the procurement works or services and the use of non-price and price criteria.

2. Absence in the Law of Ukraine "On Public Procurement" of the requirements for conducting subthreshold procurement. In order to avoid open bidding, unscrupulous customers often use the practice of deliberately dividing the item into lots (lots) and sign direct contracts with "profitable" contractors, taking into account that the law of Ukraine "On Public Procurement" does not apply to subthreshold procurement.

3. The lack of clear methodological recommendations that would give concrete recommendations on the definition of the subject of procurement provided an unambiguous understanding of the norms of "the method of documenting the compliance of the participant with the qualification criteria", "similar contracts", "confirmation of qualifications and material and technical base", "formal errors" and others.

4. Fuzzy definition of the procurement subject in the road sector.
5. Imperfection of normative base in the field of construction.
6. Lack of customer competence in the organization of tenders and further control over the execution of contracts (in particular, the preparation of tender documentation, the definition of the subject of procurement, the scope of works and technical characteristics, the preparation of contract documents in accordance with results of the competition, the implementation of independent control over the volume and quality of works).

Therefore, in order to level the above-mentioned factors of corruption risks to the Ministry of Economic Development and Trade of Ukraine, it is expedient to develop and make amendments to the Law of Ukraine "On Public Procurement" in relation to the establishment of requirements for pre-purchase procurement. It is also necessary to develop methodological recommendations for the procurement of works and services in the road sector, which would provide specific recommendations on the definition of the procurement and the development (modification of some) of the legislative acts of Ukraine in terms of involving an engineer consultant in the implementation of construction projects, repair and maintenance of highways.

Conclusions. The main ways to reduce risks and increase the attractiveness of construction of highways projects on the basis of public-private partnership are:

- identification of priority projects for the priority attraction of private investments;
- simplification of procedures for registration of rights to use land plots for construction of roads;
- development of a mechanism for funding PPP projects and guaranteeing a minimum income to a private partner from the state;
- solving discussion issues and approving the principles of functioning of toll roads.

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