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Yasinovska I.F.,  
 *cand. sc. (econ.), associate professor at the  
 department of state and local finance,  
 Sheremeta O.V.,  
 Ivan Franko National University of Lviv*

## MANAGEMENT OF INVESTMENT RISKS IN THE SYSTEM OF PROJECT FINANCING

Ясіновська І.Ф.  
 *канд. екон. наук, доцент кафедри  
 державних та місцевих фінансів  
 Шеремета О.В.*

*Львівський національний університет імені Івана Франка*

## УПРАВЛІННЯ ІНВЕСТИЦІЙНИМИ РИЗИКАМИ В СИСТЕМІ ПРОЕКТНОГО ФІНАНСУВАННЯ

**Formulation of the problem.** Project financing in Ukraine in the conditions of today cannot stand against its traditional alternatives as an independent banking product, namely loans for the renewal and purchase of capital funds and investment lending. The following macroeconomic factors such as political instability, problems with the financial system and government budget deficits adversely affect the development of the project finance banking market. Reliable financially stable banks with effective risk management, long-term resources, highly qualified financial investment analysis and consulting specialists, effective liquidity management mechanism, reliable audit partners, insurance, design, etc. can engage in project finance investment risks. Therefore, it is difficult to expect rapid growth in project financing for domestic banking institutions.

**Analysis of recent research and publications.** The following researchers such as Vasilieva T., Vitiuk V., Demchuk N., Dubrova N., Epifanov A., Zhukov V., Kozmenko S., Lapko O., Sas B., Smirnova O., Shevchuk Ya., Yunko O. and others have paid due attention to the research of the problem of development of project financing and investment risk management in Ukraine.

Some researchers focus on particular aspects of project finance development in Ukraine. Thus, N. Demchuk, N. Dubrova investigate the peculiarities of project financing development in the conditions of globalization; S. Kozmenko, O. Lapko, B. Sas, O. Smirnova pay attention to the problems of attracting investments into the real economy in the form of project financing; A. Epifanov, T. Vasylieva, S. Kozmenko investigate risks in the project financing system, etc. At the same time, the issue of intensifying the use of project financing in the banking sector remained open to the attention of the researchers, which led to the choice of the research topic.

**Setting the objectives.** The aim of the article is to investigate the problem of investment risk management in the project financing system.

**The main material of research.** The term “project finance” is a relatively new concept for domestic financial science. What is project financing? In the scientific literature there is no single approach to understanding the essence of the concept of “project financing”, so we will consider different approaches to the interpretation of this concept by domestic and foreign scientists.

Project financing is the purposeful lending of the borrower for the implementation of the investment project without recourse or with limited recourse of the lender to the borrower, for which the payment obligations are the monetary income from the operation of this project, as well as the assets belonging to it [4, p. 414].

Demchuk N.I. and Dubrova N.P. state that project financing in the conditions of globalization is a promising tool for solving investment problems, which allows Ukrainian enterprises to use progressive foreign experience taking into account the peculiarities of the Ukrainian market, to achieve the most effective a variant of the decision to finance its business activities and help to reach a new level of competitiveness [1, p. 33].

Lapko O.O. proposes the following definition to the concept of project financing – financing large-scale and long-term projects (programs) for the development and modernization of infrastructure, industry, energy, innovative programs and projects using specific financial instruments. As a result, the borrowing and equity funds used to finance the project are repaid due to the cash flows provided by the project. In other words, project finance is a structure of borrowing, the repayment of which is based on the primary use of the cash flows generated by the project, and all assets, rights and benefits are securities of the secondary market and in turn they are used as security [3, p. 167].

According to Zhukov V.V., project financing is a system of relations between the parties to the agreement (banks, investment funds, specialized financial companies, international financial organizations, etc.) in the process of implementing a set of interrelated measures concerning unsecured, integrated financing, organization and management of investment projects on partnership terms with a targeted focus on cash flows obtained solely as a result of the project [2, p. 35].

Smirnova O.O. notes that project financing can be considered as a cross-border, complex financial transaction, the international nature of which makes it possible to take advantage of resource provision, geographical location, as well as various variations of financing when making investments in strategically important investment projects [5, p. 137].

Project financing is the financing of long-term industrial and infrastructure projects, based on complex financial structure, when debt and joint-stock financing is used for projects, rather than financing at the expense and structure of the company [10]. Project financing is the financing of a separate economic unit, in which the lender first of all draws attention to cash flow as a source of repayment of debt and assets of the economic unit as collateral for debt [11].

Based on the above definitions, one can try to list the main benefits of project financing over other investment project financing schemes. The main advantages of project financing include: risk sharing among investors; in general, the terms of crediting investment projects exceed the typical banking products and the interest rate is lower; the main provision for project financing is the cash flow from the project [12, p. 189].

At the same time, it is worth noting the disadvantages of project financing: significant amounts of costs at the design stage; requires a long period from the time of application until the decision on funding and an even longer period until the end of the project; limited liability of the project company.

The first agreement, later obtained project finance, took place in the 1930s in the state of Texas (USA) to finance an oil project company. In the future, a subway in London, a tunnel under the English Channel, large infrastructure facilities were built on the basis of the use of project financing. In the 1970s and 1990s, project finance was intensively developed in the electricity and other sectors of public infrastructure, and was widely used to finance the worldwide spread of mobile telephony. The most important drivers of project finance development in the late XX – early XXI centuries was the internationalization of the global financial and investment markets, as well as the privatization of public infrastructure enterprises (in particular, housing and communal services) in most developed market countries [3, p. 166].

Project financing is classified according to different classification criteria, in particular:

- 1) by types of creditors (bank project financing; corporate project financing);
- 2) the degree of risk that takes on bank lending (without recourse to the borrower; with limited recourse to the borrower; with full recourse to the borrower);

3) by sources of financing (project financing carried out at the expense of the enterprise itself; project financing carried out at the expense of bank loans; project financing carried out at the expense of investments (placement of shares in the primary market, unit contributions); is carried out at the expense of bonds loans; project financing is carried out at the expense of leasing).

At the same time, it should be noted that mixed forms of project financing are de facto dominant.

Project financing provides ample opportunity for the development of export-import operations, such as those related to lending to future products. It is from such schemes that project finance originates. The first mechanisms of this kind were involved in the development of oil fields in the United States. Thus, the funds needed for the development of oil fields were provided by the bank on credit for oil reserves. The loan was repaid from the proceeds of sale [5, p. 136].

Criteria for selection of financing schemes for investment projects: probability of its implementation, impact on the commercial effectiveness of the project, degree of risk, reliability of funds from the investor, compliance with the overall strategy of the recipient enterprise.

We agree with the opinion of such scientist as Shevchuk Ya.V. that only a small proportion of banks in Ukraine offer such service as project financing in the market. This is due both to the macroeconomic changes and their impact on the banking sector (reduction of the number of banks and their branches, active signing of mergers and acquisitions of small banks, strengthening of supervision by the NBU, etc.), as well as the own interests of these entities. The fact is that project finance for banks is a high-risk and a complex product that requires considerable costs to prepare and conclude a contract. In addition, domestic banks mainly have deals with "short-term resources", so they are less interested in long-term lending [7, p. 101].

Project risk management is a set of processes related to the identification and analysis of risks, the development of response to risk events, which include maximizing the positive and minimizing the negative effects of risk events; a set of measures and methods of analysis and weakening of the impact of risk factors combined into the stages of risk identification, assessment, planning, regulation and monitoring; the likelihood of adverse effects in the form of loss of expected income in the situation of uncertainty of project conditions [6, p. 194].

Project risks are divided into several classification characteristics in the economic literature. Considering the causes, the project risks are divided into the following types: the risk associated with the instability of the legal framework and the current economic situation, investment conditions and profit utilization; the risk of adverse political change in a country or region; risk of incompleteness and inaccuracy of project information; foreign economic risk (possibility of imposing trade and supply restrictions, border closures, etc.); the risk of volatility in the market environment; production and technological risk (accidents, equipment failure, manufacturing shortages, etc.); risk of natural disasters; risk of unpredictable actions of project participants.

At the place of origin, project risks are divided into external and internal. Internal factors depend on the organization of work on the project, external – on the decisions of the management and activities of the project participants are independent. At the same time, there are foreseeable and unforeseen external risks of the project. Unforeseen external risks include changes in the political situation, changes in legislation on taxation, pricing, export-import operations, environmental protection, land use, etc.; bankruptcy of project participants, funding delays; natural disasters (earthquakes, floods, hurricanes, etc.). These risks are almost impossible to predict.

The foreseeable external risks include: the risk of changes in market prices, exchange rates, market conditions, the level of inflation, consumer demands; operational risk associated with deviation from project objectives and inability to maintain project management; the risk of negative social consequences and adverse effects on the environment; etc. These risks can be predicted and taken into account in the project analysis.

Internal risks include planned financial and technical, the first risks are related to violation of the terms of works and cost overruns, the second – with the change of technologies, inaccuracies in the design and technical documents, inconsistency with the project standards, etc.

Other risks may arise during project implementation, in particular transportation; customs; legal; risks related to human health, property damage, etc.

There are risks at all stages of project implementation, so the function of managing them is relevant until the project closure. Therefore, it is important to periodically and correctly assess, monitor and forecast risks and to provide adequate risk management information support.

There are such stages of risk management as: identification of risk; risk assessment; selection of methods and means of management, control, risk prevention; evaluation of results. The first two stages are called market analysis.

Risk analysis is quantitative and qualitative. Quantitative analysis is aimed at identifying and quantifying risks and their magnitude, and qualitative analysis to identify factors, limits and types of risks. For the purpose of risk analysis, a number of methods are used, including the analogy method, the cost expediency method, the expert estimation method, the calculation and analytical method, and the statistical method.

In the theory and practice of implementation of project finance schemes, key project risk management techniques are identified, namely risk avoidance, risk prevention and control, risk insurance and risk

absorption.

The most common instruments of investment risk mitigation in project financing are: insurance, diversification, limitation, hedging, bank guarantees, reserves formation and acquisition of additional information. Project risk insurance means the timely external provisioning of resources aimed at compensating for losses from future possible losses caused by the realization of certain risks of an investment project. The advantages of insurance include the fact that this method is effective, does not require additional time, disadvantages – additional financial costs for the payment of insurance premium.

Hedging is a type of insurance that involves opening deals in one market to offset the effects of price risks in an equal but opposite position in another market. Hedging helps to capture profit at a certain level, however, it causes the possibility of eliminating the opportunity to earn additional profit.

Diversification of insurance risks consists in the distribution of investments by different financial instruments, which leads to reduction of risk or creation of a single investment portfolio with alternative regional or industry orientation. There is no additional financial cost when using this tool, diversification limits the risk associated with owning one asset. The disadvantages of diversification include: forming a balance between risk and return, which is a time-consuming procedure; additional time spent; the objects may not be selected correctly.

Limitation is setting maximum or minimum limits of internal project indicators to reduce risk. As an advantage, limiting losses to a certain acceptable level is easy to apply; disadvantage limits the possible profits.

Acquisition of additional information means the acquisition of information to prevent and reduce the effects of risk factors. This reduces the risk by reducing uncertainty while requiring additional costs associated with the acquisition of information.

Among the problems inhibit the development of project financing of investment projects in Ukraine are: lack of experience in implementing project financing in domestic banks; lack of expertise in financial engineering professionals' banks; instability of tax legislation; restrictions on investment by the National Bank of Ukraine; a small number of attractive investment projects and quality borrowers; high cost of projects (from \$ 10 million) and relatively short crediting period (up to 10 years); lack of long-term resources needed for the economy; the absence of consortiums that minimize project risks; unfavourable investment climate; lack of proper regulatory framework [8, p. 123].

**Conclusions from the study.** Disregarded regulatory policy of the state and untimely assessment and forecasting of the financial state of domestic enterprises have become significant reasons for the decline of most areas of the economy, rising poverty, mass unemployment and bankruptcy. Deterioration of economic and political situation, lack of favourable conditions for doing business, instability of the legislative base, significant shadowing of the economy make domestic enterprises work in conditions of uncertain environment, which exacerbates the problem of attracting borrowed capital [9, p. 189]. According to official statistics, a significant proportion of business entities operate at a loss or low level of profitability, which negatively affects their creditworthiness and restricts access to bank lending. In such circumstances, an important way out of this situation is to activate the development of project financing.

Increasing the level of attractiveness of the investment climate, which will increase the volume of attracting foreign capital; reducing the cost of using long-term investment loans; improving the legal framework towards improving the protection of investors' interests; expansion and improvement of the network of special financial institutions (investment funds and banks, leasing, factoring, forfeiting companies, etc.) will help to reduce investment risks and intensify the development of project financing in Ukraine. In turn, the creation of favourable conditions for the development of project financing will contribute to the additional attraction of foreign investment in the national economy and its restructuring.

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Рецензент: д.е.н., доцент Львівського національного  
університету імені Івана Франка І.Б. Яців