FORMATION OF INSTITUTIONAL MODEL OF PROJECT FINANCING IN UKRAINE

Purpose. Substantiation of the formation of the mechanism of project financing for solving issues of financial maintenance of infrastructural projects of innovative development in Ukraine.

Methodology. The information base of the research is legislative and normative documents and results of scientific achievements of leading foreign and domestic scientists. The following methods, such as analysis and synthesis; comparison and systematization; observation; graphic, tabular; logical generalization are used.

Findings. According to the results of the research, it is proved that to ensure sustainable economic growth and diversification of Ukraine’s economy, the importance of institutions for development and use of such a multi-instrumental form of reproduction of real investments as project financing, becomes actual. Based on the system approach, the features, elemental composition and subsystems of the project financing mechanism are determined. It is established that the current legislative basis for the formation of the project financing mechanism in Ukraine is fragmentary and needs further development. It is proved that the implementation of measures of state stimulation of the processes of financing the innovative development of Ukraine’s economy will be facilitated by the adoption of the Laws of Ukraine “On “The Bank of Development”, “On Syndicated Loan” and the proposals for the formation of project financing developed in the research.

Originality. For the first time, a comprehensive theoretical approach to the formation of the project financing mechanism in Ukraine has been implemented. The need is substantiated for highlighting such subsystems of the mechanism as providing subsystem (institutional environment of which is legislative support and regulatory bodies), transforming subsystem (financial instruments and participants of which are the Bank of Development, international financial organizations, banks, institutional investors, development institutions, project sponsors) and performance subsystem (financial resources in the required amounts, currencies and terms). The effective operation of the proposed mechanism helps to overcome the shortage of long-term financial resources needed for lending support of innovative enterprises that implement large-scale and capital-intensive investment projects and programs of national importance.

Practical value. Introduction of the mechanism of implementation of the program for supporting the project financing development will allow accumulating considerable amounts of financial resources from various sources on a long-term target basis; increasing the level of investment and the number of innovative projects; reducing the total cost of funding and risks through their redistribution among participants of the project.

Keywords: institutes of development, innovative project, financial instruments, project financing, innovative development

Introduction. In current conditions of innovation development in Ukraine, issues related to the expansion of funding for innovative projects of national importance, which are formed and implemented in priority areas to address systemic problems in the socio-economic development of the country, acquire particular relevance. In the long run, they will ensure sustainable economic growth and economic diversification. The transition to an innovative model of Ukraine’s development is ensured by measures to modernize the economy, import substitution, and active integration into the world economic space. This requires significant investments, which are insufficient in Ukraine. The dynamics of capital investment in the domestic economy in recent years has been characterized by volatile trends. Among the main factors influencing the formation of these trends there are structural imbalances in investment activities, imperfect legal framework, burdensome tax system, instability of the national currency, loss of confidence in the banking sector, inability to attract lending resources due to their high cost and low level of people’s savings transformation and business profits in investment, the uncertainty of the economic situation in the country.

It should also be noted that along with the factors influencing investment activity in Ukraine, there are factors related to the development of innovation, such as the extensive nature of innovation development in industry; use of scientific and technical developments of previous years; low demand for innovative products; lack of incentives for innovation, and so on. This means that the problems that were characteristic of Ukrainian industry in recent years have not been resolved, which leads to the search for alternative sources of funding for innovative projects.

According to the experience of developed countries, the processes of economic modernization are provided by governments and are accompanied by the creation of the most favorable conditions for innovative initiatives, such as soft loans, tax breaks, and so on. Measures to promote investment growth in Ukraine include the creation of competitive advantages in the international economic field, attracting foreign investment, improving domestic investment policy through various forms of financing, including project financing, and using the advanced experience of the world.

Literature review. In order to develop measures to stimulate the state financing the innovative development of Ukraine’s economy, the regulation of innovation, problems and opportunities for mobilization of investment resources, selection of sources and instruments for financing innovative and investment projects, features of use and directions of project financing, improvement of legal framework for its widespread introduction in Ukraine have been studied.

Thus, the emphasis in the research is made on the problems of forming the priorities of sustainable economic development, the solution of which is long-term and requires significant investment resources [1]. The scientist notes that only the creation of effective institutional structure, build-up of an optimal institutional environment and significant financial potential will contribute to the implementation of investment and innovation breakthrough in Ukraine [1].

The need for further research on solving problems of innovation and investment activities in Ukraine, identifying sources of funding, improving instruments of state support is discussed in [2]. The author found that the key factors of eco-

© Zvieriakov M. I., Zavadska D.V., 2021
onomic growth are improving the process of access of innovative economic entities to various sources of funding (formation of mechanisms and new structures of public-private partnership (PPP), introduction of effective financial incentives, transformation of legal norms, and others) [2].

The scientific work [3] considers the current state and prospects of development of public policy in the field of bank project financing in Ukraine. It is highlighted that, according to world experience, “banking institutions perform the functions of organizers and financial initiators of investment projects, play a crucial role in mobilizing investment resources, acting as financial guarantors of investment activities”.

A review of project financing in Ukraine is provided in the Global Project Financing Guide [4]. The authors review the market, regulatory framework, project risks, foreign investment, the peculiarities of the application of public-private partnership (PPP) models, private financial initiatives (PFI), and so on. Among the reasons for the insignificant spread of PFI and PPP financing models in Ukraine is the problem of lack of proper regulation [4].

The main advantages of using project financing of infrastructure projects are the ability to attract significant amounts of financial resources, careful selection of instruments and sources of financing, including the use of financial resources of the banking sector and securities market [5]; facilitating access of borrowers (innovation-active business entities) to sources of external financing, to capital in the syndicated loan market through the participation of Multilateral Development Banks (MDB) [6]. Project financing is characterized by a longer repayment period of investment loans and belongs to a stable class of assets, even in periods of financial difficulties caused by the financial crisis [7].

It is noted that in Ukraine there is no specific state body whose activities are aimed at developing and implementing approaches to regulating project financing of infrastructure projects [4].

Unsolved aspects of the problem. According to the results of the analysis of literature sources on the researched problems, the issues of introduction of foreign experience of project financing, identification of features, regulatory problems and research of prospects for project financing market are the subject of discussions and acquire special significance. However, paying tribute to the work of scientists, we consider it necessary to note that the issues of increasing the availability of lending resources for economic agents who implement innovative projects of state importance remain unresolved. In particular, the issues of forming an institutional model of project financing in Ukraine need in-depth development.

The purpose of the article is to substantiate the need to form a mechanism of project financing to address the problems of financial support for the implementation of infrastructure projects of innovative development in Ukraine.

Methods. The information base of the research is legislative and normative documents and results of scientific achievements of leading foreign and domestic scientists. The following methods were used: analysis and synthesis; comparison and systematization; observation method; graphic, tabular method; logical generalization.

Results. Analysis of areas of cooperation between the state, financial, non-financial development institutions and enterprises in developed countries provides an opportunity to argue that the implementation of innovative projects by Ukrainian industrial enterprises is possible due to the use of project financing schemes. Most analysts note that the development of project financing has catalyzed the growth of the innovation market in energy sector, IT and public infrastructure.

It should also be noted that in the conditions of such risks as inefficiency of public administration, critical indicators of debt burden, unavailability of financial resources through the lending mechanism, critical scale and rate of loss of human capital Ukraine stays away from global investment processes.

It is important to emphasize that a way out of this situation by the usual evolutionary path is impossible. Given the accelerated development of the innovation sector of the world economy, a strategy of “innovation breakthrough” is needed, the implementation of which depends on the interaction of the state, the business sector of economy and consumers; development of competitive technologies and production of new products and services, modernization of the country’s production potential. It should be noted that the creation of a favorable investment climate is inextricably linked with the implementation of innovative projects, which are financed in the form of corporate, banking and public funding.

To develop measures to stimulate lending support for Ukraine’s industrial development, the authors propose to take into account the experience of the world countries in reorienting the economic model to an innovation-oriented one (Development Program “Yozma” Israel, Public-Private Partnership Program of the United States, “SITRA” Development Program of Finland, Samruk- Gazyna National Welfare Fund of Kazakhstan, and others).

Of particular significance are issues related to the financing of innovative projects of national importance, which are aimed at ensuring sustainable economic growth and diversification of economy. In this regard, the importance of development institutions, whose activities are aimed at overcoming “market failures”, stimulating financial institutions to lend to innovative projects, infrastructure development using public-private partnership mechanisms, becomes actual.

One of the most popular multi-instrumental forms of real investment reproduction is project financing, which allows accumulating significant financial resources from various sources on a long-term basis, as well as eliminating risks of innovative projects through their redistribution among participants (banks, specialized financial companies, international financial organizations, and so on), which interact permanently throughout the project implementation period. In the study, for the formation of an effective institutional model of project financing in Ukraine the authors propose the creation of a financial mechanism, whose formation requires determining the characteristics of the financing processes of innovative projects.

The analysis of the approaches of different authors to the definition of the essence and components of the mechanism of financing of innovations allowed characterizing it as a specific type of financing, which provides the following:

1. Separation of the project from the main activity of the enterprise-initiator through the creation of SPV—a special purpose company that operates solely for the purpose of the project and, as a borrower of funds, acts as a borrower of funds.

2. The source of debt repayment and collateral is cash flow in the form of income generated directly by the project at the operational stage. Such a mechanism to ensure the repayment of debt through the project leads to the fact that the availability of collateral plays a secondary role and does not affect the decision to finance the investment project [8].

3. Multi-instrumental form of financing, whose basis is the possibility of simultaneous use of a set of financial instruments, such as debt obligations in the form of securities, securities of international financial markets (Eurobonds, Euro-commercial securities) and derivatives (options, swaps); lending lines and bank loans; types of leasing, factoring, forfeiting, guarantees, specific contracts for the sale of future products such as “take and/or pay”, tolling and other compensation agreements and sources of lending capital as a necessary condition for the implementation of large investment projects [5].

4. Participants can be international and regional financial institutions, multilateral development agencies, multinational
banks, large international insurance associations, national governments, national import-export and insurance agencies, national creditors and institutional investors. A significant number of participants in the investment process provide access to government lending programs [9].

5. The method for attracting long-term debt financing of large projects at the initial stage. The basic method for borrowing is lending, so the ratio of share capital and borrowed capital varies depending on the project and can be 10/90, 15/85, 30/70, 20/80, 50/50, respectively [10].

6. Formation of a banking consortium (syndicate) in order to accumulate a significant amount of money, the distribution of risks between the participating banks, the ability to comply with mandatory economic standards set by the Central Bank, the exchange of necessary information.

7. Establishing a separate type of activity, the bank project financing, which is implemented on the basis of creating a special national company for project financing development on the principles of public-private partnership — Bank of Development and its subsidiary non-financial structures [11].

8. Rationality of risk redistribution among the participants of the investment process (state, bank, investor and enterprise initiating the project) on the basis of partial provision of state guarantees, subsidies and preferential refinancing.

9. Availability of a professional project team, which is formed on the basis of coordination with the bank-organizer of project financing of leading specialists and external consultants with experience in implementing large infrastructure projects.

10. Organization for regulation of project financing, the implementation of which takes place through the current state regulators of legislative, executive and control nature [7].

Based on the above mentioned, we note that the basis of project financing involves the processes of interaction that combine and coordinate the actors, direct them to create the final result.

In developing the project funding mechanism, we will use the approach of scientists Leo Hurwitz, Roger Myerson and Eric Maskin, Nobel Prize winners for their fundamental contribution to the “theory of economic mechanisms”, to define the mechanism as a description of the actions of economic entities to achieve results and US standard, which is based on the methodology of functional modeling IDEF0.

According to the latter, the process of forming the mechanism is represented in the form of a functional block, which converts “inputs” into “outputs” in the terms of availability of the necessary resources in controlled conditions. That is, the mechanism of project financing, according to the authors, is a resource provision of the process and consists of a set of interconnected subsystems configured to perform the functions of the financing process.

The peculiarities of the mechanism of financing innovations are the following: firstly, the mechanism differs from the concept of “financing system”, as its main task is to ensure the movement of the components of the system (changes, processes); secondly, the mechanism itself is part of the system, so it is based on the conversion functions and creates the conditions for effective interaction among different subsystems to convert “input” financial resources at different times, volumes and currencies into “output” resources with the necessary characteristics (long-term, significant volumes, a certain currency, and so on). To build a mechanism of project financing based on a systematic approach, we should define its main components (Fig. 1).

### COMPONENTS OF THE PROJECT FINANCING MECHANISM

| PURPOSE: to overcome the deficit of long-term financial resources to support innovative projects of national importance |
|---|---|
| SUBJECTS | OBJECTIVES |
| Types: | economic growth based on the implementation of innovative projects of national importance |
| **STATE** | development of instruments of state support and reduction of risks in lending to innovative projects of state importance |
| Cabinet of Ministers of Ukraine | creating conditions for the formation of long-term financial resources |
| Ministry of Economic Development, Trade and Agriculture of Ukraine | increase in loans to innovative projects of priority sectors of economy |
| Ministry of Finance of Ukraine | indirect investment in projects of the real sector of economy |
| **FINANCIAL AND NON-FINANCIAL INSTITUTIONS OF DEVELOPMENT** | promoting the competitiveness of innovation-active economic agents in domestic and foreign markets |
| Bank of Development | creation, modernization of infrastructure facilities, creation and implementation of technologies, enterprises, high-tech production, expansion of existing production areas |
| National Bank of Ukraine | Enterprises, initiators of innovative projects |
| International financial organizations | Project companies |
| Banks | |
| Institutional investors | |
| Institutes of development | |
| Innovation-active economic agents | |
| | |
| | |

**OBJECTS**: processes of formation of sources for long-term financing of innovative projects of state importance

**PRINCIPLES**: system, complementarity, phasing, efficiency

**FUNCTIONS**: accumulating, distributive, transforming, motivating, stimulating

**METHODS**: direct and indirect economic, regulatory

*Fig. 1. Elemental composition and objectives of the participants of the mechanism of project financing of innovative projects of national importance*
The data in the figure show that the main elements of the project financing mechanism are the following: purpose, objectives, objects, subjects, functions, principles and methods. The purpose of the project financing mechanism is to overcome the deficit of long-term financial resources to support innovative projects of national importance. The objectives for implementing this purpose are, firstly, to increase the availability of project financing in Ukraine; secondly, to create the tools to attract potential investors and creditors to finance projects in priority sectors of economy. The next component of the project financing mechanism is its objects and subjects.

As the only object of management in the mechanism the processes of forming sources of long-term financing of innovative projects of national importance are considered, and as subjects the state, financial and non-financial development institutions, active innovative economic entities with different economic interests are defined; thus, one of the important tasks of the project financing mechanism is to combine the objectives of all identified subjects.

We should note that the economic interests of the participants of the project financing mechanism differ, but there is a single vector of objectives in the direction of financial support of infrastructure and production projects, improving the financial condition and innovation activities of enterprises prioritizing the development of economic sectors. The success of the project financing mechanism will be facilitated by the performance of its functions, the main of which are accumulating, distributive, transforming, motivational and stimulating functions.

The accumulative function of the project financing mechanism promotes the development of processes of formation of the necessary amounts of financial resources aimed at solving specific tasks of strategic innovation development. The distributive function contributes to the optimal distribution of financial resources between the established areas and objects of financing innovations. The transforming function of the mechanism of project financing is called to provide processes of movement of the formed financial resources on the basis of interrelations among its components in appropriate directions: branches, regions, the enterprises.

The motivational function is to use the material interests of project financing participants, as income from participation in long-term financing of innovative projects of state importance creates motivation for further development of long-term financing processes, consistency of economic interests of mechanism participants.

The stimulating function of the project financing mechanism is to develop methods for stimulating the participation of subjects (entities) in the processes of long-term financing of innovative projects of state importance.

An important component of the project financing mechanism includes the main tools of influencing the participants of the mechanism to stimulate participation in the processes of long-term financing of innovative projects of state importance. They are direct, indirect economic and regulatory tools. Direct economic methods are budget allocations to ensure the implementation of targeted programs to support innovative projects of national importance, government guarantees for project bonds, interest rate subsidies on loans and the cost of paying coupon income on shares. Indirect methods for stimulating the development of project financing are the introduction by the National Bank of Ukraine of a special regime for the formation of reserves for loans provided under the “Program to support innovative projects of national importance, which are implemented on the basis of project financing”; refinancing on loans granted to finance innovative projects of state importance with and without the use of state guarantees with the participation of the Bank of Development, reduction of the tax burden for banks as the main participants in the process of financing innovative projects of state importance.

The main regulatory methods of the project financing mechanism are legislative support. The theoretical scheme of the project financing mechanism is presented in Fig. 2.

According to the figure, an important element of the project financing mechanism is the providing subsystem, which is the institutional environment — laws, regulations and regulatory bodies that create the basic conditions for the development of long-term financing of innovative projects of state importance in Ukraine.


![Fig. 2. Theoretical scheme of the mechanism of implementing the program for support of project financing development](image-url)
The effects of the transforming subsystem contribute to the performance of the functions of transformation of financial resources. Participants in the transforming subsystem of the project financing mechanism are project sponsors, creditors, and institutional investors. The sponsor-initiator of the innovative project is the project company; the creditors are financial and non-financial development institutions: Bank of Development, International financial organizations, banks, leasing companies, Export Credit Agency; institutional investors are private pension funds, insurance companies and mutual investment institutions. The Bank of Development is the main element of the transforming subsystem. Its activities are aimed at shaping the demand of participants to apply new tools for financing innovative projects of national importance. Given the fact that the “Support Program for Innovative Projects of National Importance Implemented on the Basis of Project Financing” provides for the financing of projects implemented in the interests of the state and characterized by significant capital intensity, the main instruments for attracting financial resources are lending, syndicated loans, project bonds, securitization, participation in the authorized capital, guarantees and subsidies, leasing, financial support of exports. Schematic representation of the accumulation and distribution of financial resources among the participants is shown in Fig. 3.

It should be noted that the cooperation between the Bank of Development and other participants provides for the search, development and decision-making on the possibility of financing projects within the “Program to support innovative projects of national importance, which are implemented on the basis of project financing”. The main criteria for selection of innovative projects of national importance are cost (sum of all costs for project implementation), term of financing and payback, implementation in Ukraine in accordance with the priority sectors of the economy, which are determined by the Cabinet of Ministers of Ukraine.

The final result – a performance subsystem – is long-term financial resources, the amount of which is necessary for lending support of innovative projects of national importance.

On the basis of the study, the authors defined the concept of the mechanism of project financing. That is a complex phenomenon consisting of providing, transforming and performance subsystems, the use of which allows achieving the planned result of interaction of participants in the process of financing innovative projects of national importance.

The advantages of applying the project financing mechanism involve increasing the availability of financial resources for economic entities that implement innovative projects of national importance; increasing the terms of financing and lending amounts, reducing the total cost of project financing; risk reduction per creditor based on attracting a significant number of participants to finance projects; development of the institutional model of project financing; special procedure for the formation of reserves for loans provided under the document “Program to support innovative projects of national importance, which are implemented on the basis of project financing”; creation of new reliable and liquid instruments for investing funds, risk hedging (subsidizing interest rates on loans and expenses for the payment of coupon income on shares) and attracting additional opportunities to finance innovative projects of national importance (government guarantees for project bonds).

Conclusions. According to the results of the research on the formation of the institutional model of project financing in Ukraine, the theoretical scheme of the mechanism of implementation of the program to support the development of project financing is substantiated.

The necessity of highlighting the following subsystems of the mechanism is proved. They are providing, transforming and performance subsystems, the use of which allows achieving interaction of participants in the process of accumulation
Fig. 3. Interaction of participants of the project financing mechanism in the process of accumulation and distribution of financial resources

and distribution of long-term financial resources needed for lending support of large-scale and capital-intensive innovative projects and programs of national importance.

Based on international experience, firstly, the need to amend the NBU Regulation “On Determining the Amount of Lending Risk on Active Banking Operations by Banks of Ukraine”, which provide for disregard of mechanisms of capitalization of interest in the formation of reserves for innovative loans (providing the opportunity to defer payment of interest) and the financial condition of the borrower, has been determined. Secondly, in order to refinance innovative loans, the need to create a refinancing mechanism through the Bank of Development and securitize for the issuance of project bonds secured by a state guarantee and future payments on the loan pool, has been determined.

It is substantiated that an important element of the mechanism is the Bank of Development, whose activities are aimed at creating demand for participants to use new instruments for financing innovative projects of national importance - the functions of accumulation and distribution of financial resources among subjects.

The implementation of the proposed project financing mechanism will help increase the availability of lending resources for economic agents implementing innovative projects of national importance; increasing the terms and amounts of lending, reducing the total cost of project financing; hedging and reducing risks per creditor; development of the institution of syndicated lending.

Prospects for further development in this area of research is the development of methods for innovative lending, in particular a methodical approach to calculating the bank’s interest rate taking into account the venture component and compensation of bank risks associated with the implementation of an innovative project under the development stage.

References.
блем фінансового забезпечення інфраструктурних проєктів інноваційного розвитку в Україні.

Методика. Інформаційною базою дослідження є законодавчо-нормативні документи та результати наукових досліджень, провідних закордонних і вітчизняних ученів. Використані такі методи: аналіз і синтез; порівняння; систематизація; спостереження; графічний, табличний, логічний аналіз.

Результати. За результатами проведеного дослідження доведено, що для забезпечення сталого економічного зростання актуалізується значимість інститутів розвитку інноваційних проектів. На основі системного підходу визначено особливості, елементний склад і підсистеми механізму проектного фінансування. Встановлено, що дія система розвитку основи для формування механізму проектного фінансування в Україні є фрагментарною та потребує подальшого розвитку. Доведено, що реалізація заходів державного стимулювання процесів фінансування інноваційного розвитку економіки будуть сприятись прийняттям Законів України «Про Банк Розвитку», «Про синдиковану фінансування» та розроблення пропозицій щодо формування механізму проектного фінансування.

Наукова новизна. Уперше реалізовано комплексний теоретичний підхід до формування механізму проектного фінансування в Україні. Обґрунтована необхідність виокремлення таких підсистем механізму, як: забезпечення фінансовими ресурсами, необхідними для кредитної підтримки інноваційно-активних підприємств, що реалізують великі масштабні і капіталомісткі інвестиційні проєкти.

Практична значимість. Запровадження механізму реалізації програми підтримки проектного фінансування дозволить на довгостроковій основі акумулювати значні обсяги фінансових ресурсів із різних джерел; збільшити рівень інвестицій і кількість інноваційних проектів, зменшити загальну вартість фінансування виокремлення й ризики завдяки їх перерозподілу між учасниками проекту.

Ключові слова: інститути розвитку, інноваційний проєкт, фінансові інструменти, проектне фінансування, інноваційний розвиток

Recommended for publication by V. H. Semenova, Doctor of Economic Sciences. The manuscript was submitted 11.11.20.