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FINANCING OF INNOVATIVE DEVELOPMENT OF THE UKRAINIAN ECONOMY

ФІНАНСУВАННЯ ІННОВАЦІЙНОГО РОЗВИТКУ ЕКОНОМІКИ УКРАЇНИ

Abstract. Introduction *Innovative activity becomes an integral and necessary element of the successful development of the country's economy, and the task of the state is to implement an effective financial and innovative policy in order to ensure its stable growth. The article reveals the theoretical foundations of innovative development and states that some scientists considered the territorial aspect of innovative growth, which is caused by fluctuations in the level of innovative activity of different countries and civilizations.* ***The purpose of the article*** *is to study the theoretical foundations of innovative development and assess the current state of financing innovative development of the Ukrainian economy.* ***Methods.*** *The article uses general scientific methods of scientific knowledge, in particular, epistemological method, dialectical method, induction and deduction, formal-logical method, comparative and systematic methods.* ***Results.*** *The article states that a complex of issues related to the quality financing of innovative processes, which require systematicity and predictability, can be solved on the basis of a program-targeted approach to regulating the flow of investments aimed at innovative development. It was established that Ukraine, with a high level of educational and scientific potential, has a low level of implementation of innovations in the field of economic activity and their commercialization. Budgetary funding in Ukraine is the main source of funding for innovative development and an instrument of scientific and technical policy, a form of direct state support. During 2018–2022, funding of the scientific sphere from the state budget increased by 60.6 %, however, in 2022, the war did not allow maintaining the dynamics of previous years. It is noted that the limited possibilities of the budget determine the relatively low share of sectors of the economy covered by potentially effective innovative developments, the number of which is decreasing.* ***Conclusion****. It was concluded that in the conditions of limited financial resources, which the state is able to direct to innovative development, it is appropriate to strengthen the levers of budget policy as a tool for increasing the efficiency of the use of budget funds directed to the innovative development of the country's economy.*

Key words: *innovative development, financing, financial support, innovation index, innovation process.*

Анотація. *В статті розкрито теоретичні засади інноваційного розвитку та зазначено, що деякі вчені розглядали територіальний аспект інноваційного зростання, який зумовлений коливанням рівня інноваційної активності різних країн і цивілізацій. Відмічено, що комплекс питань, пов'язаних із якісним фінансуванням інноваційних процесів, які вимагають системності та прогнозованості, можливо вирішити на основі програмно-цільового підходу до регулювання потоку інвестицій, спрямованих на інноваційний розвиток. Встановлено, що Україна при високому рівні освітньо-наукового потенціалу має місце низький рівень впровадження інновацій у сфері економічної діяльності та їх комерціалізації. Зроблено висновок, що в умовах обмеженості фінансових ресурсів, які держава здатна спрямувати на інноваційний розвиток доцільним є посилення важелів бюджетної політики як інструмента підвищення ефективності використання бюджетних коштів, що спрямовуються на інноваційний розвиток економіки країни.*

Ключові слова: *інноваційний розвиток, фінансування, фінансове забезпечення, інноваційний індекс, інноваційний процес.*

Formulation of the problem. The practice of economic promotion in developed countries shows that the successful development of a national or sectoral economy requires the active introduction of innovative products, their development and adequate financing [14]. Ukraine actually needs radical changes in its economy and society, through the introduction of an innovative development model aimed at creating a knowledge economy that is ahead of the development of the raw materials sector, which was determined throughout the period of independence.

Modern conditions of economic development, caused by globalization processes, call for the intensification of innovative initiatives in practice in almost all countries of the world . This is due to the desire to achieve competitive advantages in social and economic development and to guarantee food security in the face of global climate change, the coronavirus pandemic, Russia's aggression against Ukraine, and the disruption of logistics chains of grain supplies to foreign markets.

Analysis of the latest research and publications. The work of many foreign and domestic researchers is devoted to the study of the problems of innovative development and its financing. The theoretical foundations of innovative development are considered in the scientific works of J. Schumpeter, P. Drucker, M. Mensh and B. Santo . Rosabeth Moss Kanter reveals the four main waves of innovation enthusiasm and describes the classic mistakes companies make when developing and implementing innovations. In the field of the theory and practice of financing innovative activities, a powerful addition has been formed by scientific publications of domestic scientists, including: O. Androsova, V. Geets, B. Danylyshyn, O. Kirylenko, M. Krupka, S. Onyshko, K. Pavlyuk, A. Cherep and others.

A significant contribution to the development of the theory of innovations was made by D. Ricardo, investigating the problems of technical progress, the impact of improvements in agriculture on rent, innovations and innovations, and their impact on the development of agriculture. The author of the note is: "The one who discovered the machine ... will enjoy additional benefits, producing greater profits" [16, p. 35].

Ukrainian economist M. Tugan-Baranovsky, who developed the theory of cyclical economic development, in the process of forming a general concept of cycles and crises, in particular in the economic and technological spheres, determines the important role of changes in investment fluctuations in the transformation of the phases of the industrial cycle [7].

The development of innovation theory was reflected in the neoclassical direction presented by the famous researchers M. Mensh and B. Santo. Thus, M. Mensh, developing the theory of innovative activity, explains the unevenness of innovative activity in entrepreneurial structures by the peculiarities of the functioning of the market economy. The focus on profit maximization under favorable economic conditions of doing business and the presence of risks dull the desire to contribute to alternative directions of technical development [1, p. 23]. According to M. A smaller "…deterioration of the firm's condition creates an incentive to innovate. And vice versa, when the company's affairs are flourishing, it does not need to seriously change anything in the already established production" [15, p. 31]. The author advocates the opinion that the generator for the emergence of innovations is the deterioration of business conditions.

The Austrian scientist R. Hayek, who developed the theory of intelligent technology, paid great attention to the issues of innovation. The main epistemological principle of Hayek's philosophy is the statement about the fundamental limitation of human understanding and that this understanding does not exist in the form of a clearly structured set of knowledge expressed in formulas and numbers, and a significant part of this understanding is mainly intuitive in nature [5, p. 99].

H. Ford's instructions regarding the principles of conducting business and introducing innovations remain relevant: " Don't be afraid of the future and don't be too respectful of the past. He who is afraid of the future, that is, of failure, limits the circle of his activity. Failures only give a reason to start again, and start more rationally. Honest failure is not shameful, shameful fear of failure. The past is useful only in in the sense that it shows us the ways and means for development" [9, p. 20].

When developing the theory of innovative growth, some researchers paid attention to the territorial aspect of this process, which is determined by changes in the level of innovative activity of different countries and civilizations. A representative of this direction, P. Kennedy, who analyzed the dynamics of the level of industrialization per capita, came to the conclusion that the gap according to this indicator increases sharply in the industrial era [13].

The purpose of the article is to study the theoretical foundations of innovative development and assess the current state of financing innovative development of the Ukrainian economy.

Presentation of the main research material. Since the end of the 20th century, the search for reasons, successes and failures in financing innovative development, as well as the effect of the factor of nonlinearity and unevenness of the obtained result, have gained popularity [11]. In modern global practice, a wide range of indicators is used to assess the level of innovative development at the micro, meso, and macro levels, as well as the influence of various factors on innovative development. Authoritative international organizations develop their own indicator systems that allow to properly assess the degree of innovative development of the country. Among them, the most relevant are presented in Table 1.

The evaluation of innovation potential, development and effectiveness of Ukraine's innovation policy is carried out in several international ratings. Analyzing the trends in these ratings, one can note the lack of systematic support for innovative development from both the state and the business side (Figure 1).

The analysis of various international indices evaluating the innovative development of Ukraine shows that, despite the high level of educational and scientific potential, Ukraine has a low level of innovation implementation in the field of economy and their commercialization. Thus, according to the Global Innovation Index for 2021, Ukraine's position decreased by 37 indicators. A significant part of the decrease is due to the innovative activity of enterprises – from financing to the implementation of the acquired knowledge and technologies. In comparison with the leading countries, an important aspect is insufficient

Table 1

A system of indicators for evaluating the innovative development of economies

No with / p	Name	Characteristics of the indicator
1	Index of scientific and technical potential (World Economic Forum), as a component of the integral indicator of assessing the level of competitiveness of the country's economy.	Experts associate sustainable economic development in the medium and long term with three factors, which include the macroeconomic environment, institutional climate and technological progress. Among the indicators that are taken into account, in particular: opportunities for innovation, the quality of scientific institutions, spending by enterprises on scientific and research work, cooperation between universities and industry in the scientific field, government support for high-tech products, the availability of scientific and engineering personnel, as well as the number of patents for USPTA inventions issued in the current year per million inhabitants.
2	Bloomberg rating of innovative economies .	The calculations are based on the analysis of data on the intensity of scientific research and development, the production of innovative products and services, labor productivity, activity in the patent field, the level of education and the concentration of high-tech enterprises in Ukraine.
3	European innovation scoreboard	In the European Union, a system of indicators is used to evaluate innovation activity, which allows for a comparative analysis of innovation processes in member countries. This system includes 16 indicators divided into four groups: development of human capital, generation of new knowledge, transfer and application of technologies, financing and results of innovative activities. Evaluation of innovative processes using this methodology helps to make effective decisions in the field of stimulating innovative development.
4	Global innovation index	The evaluation uses 80 indicators that reveal the characteristics of the most innovative economies in the world. This assessment covers approximately 132 economies and identifies both strengths and weaknesses in their innovation performance. Among the indicators, the most innovative economies of the countries, as well as the largest scientific and technical (S&T) innovation clusters in the world with a high concentration of inventors and scientific authors are distinguished.

Source: compiled by the authors based on [1; 4; 8]

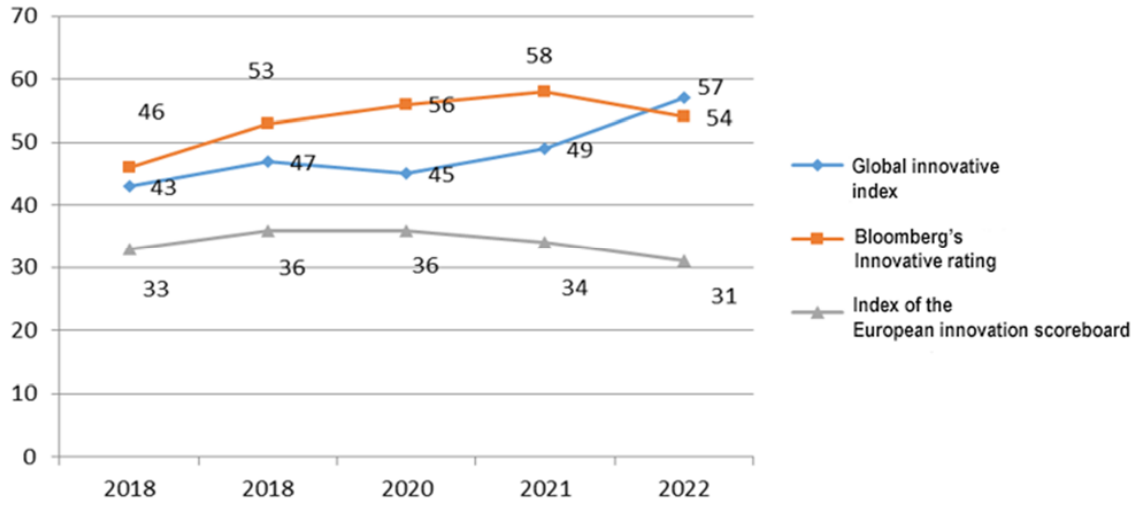

Figure 1. Ratings of Ukraine according to indices of innovative development

Source: built by the author based on [2]

state support for innovative developments and their financing, both from the state budget and from the business side. Negative trends are also a decrease in the amount of funding for scientific research and development of science, as well as Russia's military aggression, which exacerbated the outlined problems.

Budget funding is the main source of funding for innovative development and is a key instrument of scientific and technical policy, which is a form of direct state support. During the period from 2018 to 2022, a 60.6% increase in funding of the scientific sphere from the state budget was recorded. A significant increase in spending was recorded in 2021, and is also planned for 2022 by 29.8% and 17.2%, respectively.

The total expenditures of the state budget of Ukraine in 2022 were planned to be directed to the financing of the scientific sphere under 40 budget programs by 22 main managers, amounting to UAH 14.3 billion. Of them, from the general fund – 11 billion UAH (76.92% of the financed volume), from the special fund – 3.3 billion UAH (23.08%) [6]. However, the war did not allow these plans to be implemented (Figure 2).

The analysis of the distribution of the total amount of funding in the scientific sphere in 2021 shows that among

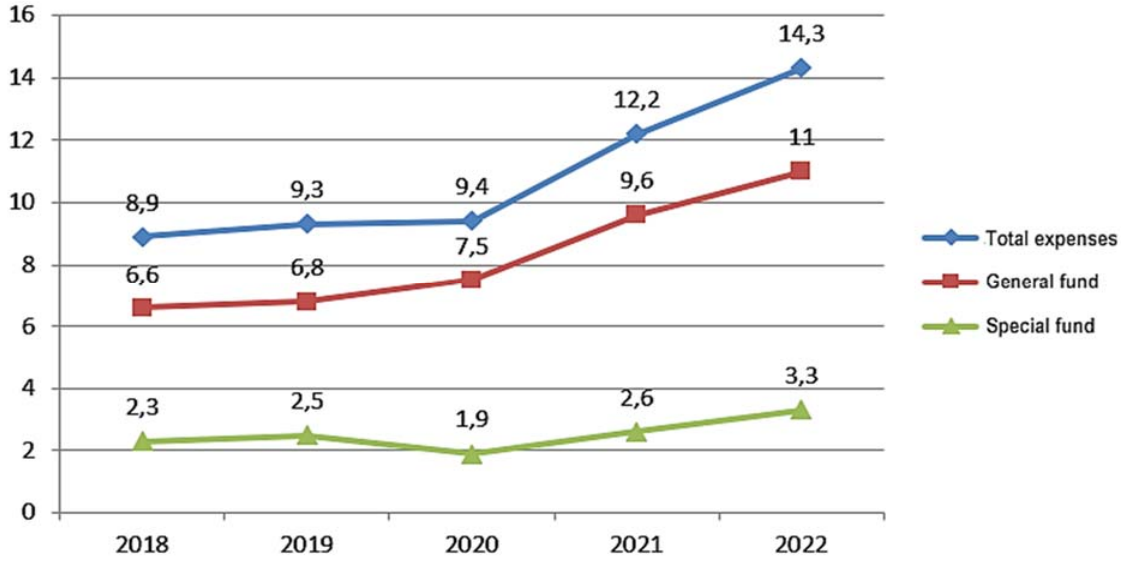

Figure 2. Dynamics of funding of the scientific sphere of Ukraine at the expense of the state budget

Source: compiled by the author based on [3; 6]

the seven main managers, which account for 93.08% of the total amount of funding, UAH 695.42 million was allocated to NAAS, which is 5.71% of the total amount [12].

In the conditions of modern challenges in Ukraine, the model of stimulating the supply of innovations prevails, which is due to the emphasis of the state's efforts and the corresponding expenditures of the budgets of different levels on the implementation of innovative development projects and the increase in financing of priority projects from the budget [10]. However, this approach has significant drawbacks and demonstrates low efficiency due to significant delays in budget funding, periodic changes in priorities and governments, permanent budget deficits, and reductions in innovation spending. The limited possibilities of the budget lead to a relatively low coverage of sectors of the economy with potentially effective innovative developments, the number of which is decreasing. The low level of funding of science, the low remuneration of scientists and the outdated material and technical base of scientific institutions led to a mass outflow of promising scientific personnel abroad.

State policy in the field of innovation currently does not have a systematic approach and does not take measures to transition to a model that stimulates the demand for innovation. First of all, in our opinion, this is related to the reduction of industrial production and the raw nature of exports. Most industrial enterprises have switched to simple, energy- and material-intensive technologies, and in the absence of financial resources and strong competition in world markets, they do not contribute to the demand for innovative products. The principle of the innovative type of development involves a continuous and purposeful process of generating ideas, developing and implementing scientific products into production, financial support for this continuous process with the aim of increasing the efficiency of social production and providing favorable conditions for the self-development of innovative systems.

Conclusions. In Ukraine, innovative activity should be recognized as a priority, economically important and flexible. The effectiveness of the innovation development model depends significantly on the financing of innovations at the micro, meso, and macro levels. Analysis of the financing of innovative activities of Ukrainian enterprises shows that many of them face a serious lack of their own financial resources, which must be directed to innovative development, and there are also a significant number of obstacles to attracting external funding.

Financial support from the state, provided both directly and indirectly, plays a key role in the process of innovative modernization of the economy. In particular, the main vectors of financial support for structural transformations in the economy should be the introduction of a system of tax benefits, the provision of state guarantees for investment loans aimed at supporting small and medium-sized enterprises in the field of innovative business, and the implementation of state policy on accelerated depreciation of fixed capital.

That is, in our opinion, the main problems that take place and restrain the innovative development of the country are insufficient financing, a low level of innovative activity of enterprises, a long payback period for innovations, an insufficient level of stimulation of innovative activity, the lack of consolidated efforts of the community, business structures, authorities and scientific institutions regarding effective cooperation and the search for innovative approaches to development.

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