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DIRECTIONS FOR FORMING AN EFFECTIVE SYSTEM OF FINANCING INNOVATION ACTIVITIES

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ABSTRACT

The article examines the essence, features of innovations, theoretical foundations of financing innovative activities. The volume and trend of changes in the gross domestic product and expenses for financial support of innovation activities are analyzed. The distribution of expenses on innovations in Uzbekistan by sources of financing is studied.

A SWOT analysis of ensuring the effectiveness of the system of financing innovative activities of enterprises is considered. Based on the research findings, recommendations have been developed to improve the financing of innovative activities.

KEYWORDS

Innovation, investment, financing, efficiency, gross domestic product, innovation activities, sources of financing, methods and technologies, research and development, patents, enterprises and start-ups, projects.

Introduction

Innovation is the key to economic transformation and development around the world and the main engine of socioeconomic progress. Stimulation and acceleration of innovative activities are becoming one of the main strategic tasks of the economic policies of developed countries and is gaining importance in developing countries. Innovative activities that have contributed to the transformation of the global economy include research and development (R&D), patenting, venture capital and start-ups, the export and import of technologically sophisticated goods and services and the allocation of foreign direct investment to new enterprises. “All regions of the world have increased investments in promotion of innovative activities,” said the World Bank. Thus, “global spending on the development of innovative activities has quadrupled over the last 20 years, amounting to about 2.5 trillion USD, or 2.5 percent of the global Gross Domestic Product (GDP)” [1]. In this connection, special emphasis is now given to the development of an effective system of financing innovative activities in enterprises.

In recent years, Uzbekistan has implemented expedited reforms aimed at creating an innovative economy and improving the business and investment climate. Significant progress has been made because of the Republic of Uzbekistan's 2019-2021 Strategy for Innovative Development in ensuring and stimulating innovation and technological development across economic sectors and the social sphere, particularly in agriculture, energy, construction, education, and healthcare.

Within the framework of implementing the Strategy for Innovative Development of the Republic of Uzbekistan for 2022–2026, several specific measures have been outlined.

These include supporting startup initiatives and organizing large-scale production through the formation of a network of innovation infrastructure entities; improving the institutional mechanisms for the state support of innovation activities; and ensuring the accelerated socio-economic development of the regions by enhancing the innovation activity of small enterprises. Furthermore, the strategy outlines measures to stimulate the demand for innovations by establishing a comprehensive system for the creation of new products and innovative technologies—spanning from the initial idea to the final consumer—as well as forming a system to redirect generated capital toward "disruptive" innovations.

Priority objectives—such as "by 2026, increasing the number of new jobs created through innovation entrepreneurship fourfold, doubling the number of new innovation developments resulting from commercialization in domestic and foreign markets, raising the number of new technologies developed in the regions to 384, and expanding the number of scientific, innovation, and technological projects implemented in collaboration with foreign organizations to 183" [2]—necessitate the formation of an effective system for financing the investment activities of enterprises. Consequently, this dictates the critical need to conduct relevant scientific research in this domain and to formulate scientifically grounded proposals and recommendations.

Literature review

Innovation (defined as "an introduced novelty or invention" [3]) refers to the resources invested in the economy to introduce new generations of machinery and technologies. Furthermore, it reflects advances in cutting-edge technology, management, and other fields, as well as their practical application across a variety of industries. Although the term "innovation" has been around for a long time, it only became a focus of serious scientific research in the late nineteenth and early twentieth centuries.

The core of innovation can be stated via the lens of the academic J. Schumpeter, who defined it as "the introduction of new elements (types, methods) into various forms of human activity that enhance the efficiency of that activity" [4]. According to the professor, the inventive approach to economic activity determines an economy's level of development in every given era. According to his thesis, economic growth can be achieved by expanding small enterprises and encouraging entrepreneurship. As a result, funding for innovative activities should no longer be only the responsibility of entrepreneurs; rather, it should be viewed as a strategic necessity aimed at reforming the larger economic system.

Porter "analyzed the correlation between competitiveness and innovation through an economic model" [5]. He believes that when funding innovative efforts, it is critical to use a variety of money sources in a balanced manner. Furthermore, sponsoring new projects through public-private collaboration considerably improves overall efficiency.

P. Drucker's scholarly works focus on "the impact of innovation on enterprise success, emphasizing the importance of adopting an innovative approach within corporate strategies" [6]. The scholar's research reveals that funding innovation requires more than just financial support; it must be combined with an effective management system and long-term strategies, ensuring that the financing strategy is carefully focused on well-defined goals.

According to foreign scholars' theories, the distinguishing feature and significance of innovation is that advancements in the production sector can be seen not only in technology but also in production

organization, as well as qualitative transformations caused by the entrepreneur's deliberate actions. Essentially, innovation is a novel mix of manufacturing conditions and factors implemented by the entrepreneur.

Domestic specialists Prof. T. Malikov and O. Olimjonov suggest that "the core of a country's competitive economy should be constituted by new, innovation-based industries that manufacture products with high added value and a high degree of processing"[7]. Indeed, innovations are important in driving economic development and increasing national competitiveness; however, the concept also includes the process of introducing novel ideas, technologies, or methodologies that result in the improvement of products, services, or operational processes.

Researchers such as X. Abdukarimov, I. Jumayev, and B. Raximov have studied the specific characteristics of financial support for creative activities, "directing particular attention to the significance of state-provided subsidies and investment grants" [8]. When it comes to subsidizing creative initiatives, we believe that the state should do more than just offer assistance; it should also increase overall efficiency through results-oriented measures. Concurrently, it is necessary to establish a comprehensive framework for evaluating the efficacy of these subsidies and prizes.

In his dissertation, I. Madaminov substantiates that "the economic crisis across several countries following the global pandemic, coupled with the constrained movement of cash flows in enterprise production and services, has necessitated the stimulation of innovation and investment activity within the national economy. The ability of any state to recover from an economic recession, achieve economic progress, and build a modern innovative economy is fundamentally and directly dependent on investments directed toward effective innovations" [9]. I. Madaminov's perspectives highlight innovative investments as a strategically vital element both during the pandemic and within the conditions of the subsequent economic crisis. According to him, state support in this domain plays a decisive role in ensuring the stability of enterprises.

I. Madaminov's thoughts highlight creative investments as a strategically critical aspect both during the pandemic and in the aftermath of the economic crisis. He believes that state support in this arena is critical to ensuring company stability.

N. Bahriddinov's scientific work states that "the financing of innovation activities occupies a critical position in the effective implementation of an innovation strategy within enterprises.". Otherwise, without adequate financial backing, achieving strategic objectives is extremely difficult [10]. We believe that failing to fund organizations' innovation projects makes accomplishing their strategic goals extremely challenging. As a result, financing must be a key focus while developing innovative efforts. Based on past research, it is obvious that deeper, more basic strategy decisions are required to create an effective structure to support corporate innovation efforts.

Research methodology

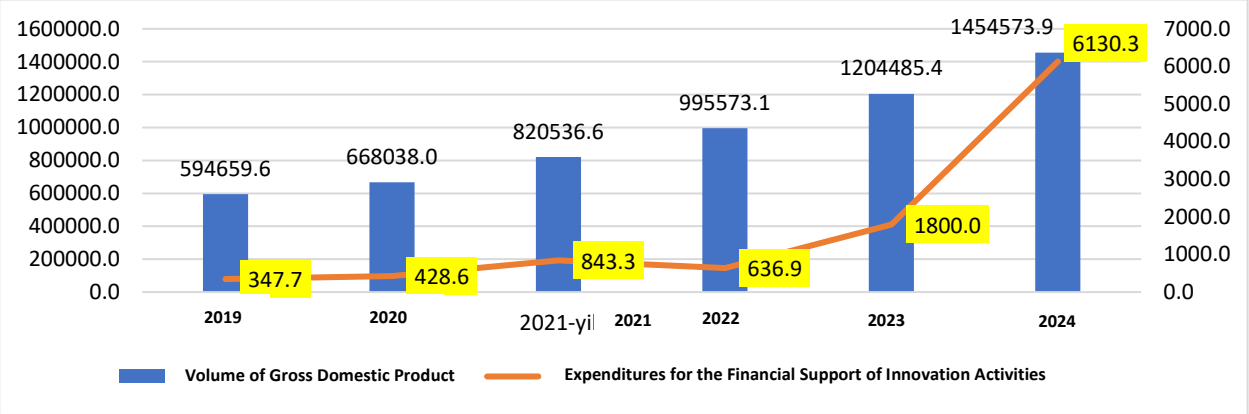
The investigation used logical reasoning, forecasting, synthesis, a systematic method, structural and comparative analysis, economic comparison, scientific generalization, and statistical computation.

Findings discussion and analysis

In the framework of economic modernization, the development and financial support of innovative activities is critical to ensuring long-term economic growth. One of the most important indications in this regard is the amount of money allotted by the state to innovation activities and research and

development (R&D); as a result, the government has greatly increased its emphasis on supporting and promoting inventions.

Specifically, between 2020 and 2024, state spending on financial assistance for innovative activity surged 17.6 times, while GDP increased 2.4 times. This signifies that the growth rate of expenditures to promote innovation outpaces the growth rate of GDP. This is a positive trend in the development of science and innovation, as well as the introduction of creative technologies and scientific-technical advances in a variety of areas (Figure 1).



1-Figure. Volume and trend dynamics of the Gross Domestic Product and expenditures for the financial support of innovation activities (in billion UZS) [11]

Simultaneously, similar trends serve as an important indicator of the country's planned transition to a modern economy. However, over the period investigated, spending on financial assistance for innovative activities did not even surpass 0.5 percent of GDP. Specifically, the share of expenditures for financial support of innovative activities in the GDP was 0.1 percent in 2021 and 0.15 percent in 2023, which differs significantly from the indicators of various emerging and developed countries. For instance, "in 2023, the share of expenditures for the financial support of innovation activities within the GDP constituted 2.3% in the Russian Federation, 1.8% in Kazakhstan, 3.1% in Germany, and 3.6% in Sweden" [12].

By the end of 2023, the Republic of Uzbekistan had 5,026 firms and organizations generating innovative products, works, and services, with the biggest concentration in Tashkent city and the Tashkent area (434). The lowest indicators were found in the Syrdarya (110), Namangan (116), and Jizzakh (219) regions.

In 2023, the total volume of innovative products, works, and services executed and sold by enterprises reached 55,746.5 billion UZS. This metric reflects a 112 percent growth, or a 2.1-fold increase, compared to the 2019 level (26,293.8 billion UZS). Furthermore, of the total volume of innovative products, works, and services executed and sold in 2023, 50.4 percent was attributed to the manufacturing industry, 41.4 percent to the information and communication sector, and 2.3 percent to financial and insurance activities.

Today, considerable emphasis is being placed on the growth of innovative activities as a crucial priority for the economy's technical and technological modernization, significant rise in competitiveness, and expansion of export potential. Financing innovation initiatives is critical to Uzbekistan's long-term economic success. To create an innovative economy in the country, the government has implemented

several initiatives and processes, while the private sector is also working to contribute to the process. The developments in the financing of innovation expenditures in Uzbekistan are discussed here (Table 1).

Table 1 Table 1. Distribution of innovation expenditures in Uzbekistan by sources of financing (in percent) [13]

Key indicators	2019	2020	2021	2022	2023
State budget funds	11,02	8,95	7,92	6,42	5,04
Targeted extra-budgetary funds	4,65	4,88	4,41	4,75	4,92
Organizations' own funds (or internal funds of enterprises)	50,62	51,19	56,82	59,43	60,89
Foreign investments	16,41	14,88	12,44	11,85	11,70
Commercial bank loans	16,05	18,96	17,45	16,87	16,92
Other sources of funds	1,24	1,14	0,96	0,68	0,53
Total sources of financing	**100**	**100**	**100**	**100**	**100**

Within the country, examining the sources of financing for innovation expenditures reveals that in 2023, internal finances of enterprises and organizations will reach around 60%, representing a 10.2 percentage point increase over 2019. Furthermore, commercial bank loans made for 16.92 percent of total financing for innovation expenses. In contrast, the percentage of foreign investments used to fund innovation expenditures is decreasing. This perspective underlines the necessity of expanding the country's investment attractiveness as well as improving the system for obtaining international grants and credit lines for creative firms from foreign investors.

The limited role of budget resources in financing innovations highlights the growing necessity of alternative financing sources. Overall, the share of spending dedicated to innovation is severely inadequate at the time. This phenomenon can be explained by entrepreneurs' lack of knowledge, experience, qualifications, and skills in the development of innovative products and services.

Furthermore, the low level of spending on creative entrepreneurship and research and development (R&D) might be attributed to a variety of hurdles to developing and implementing innovations. Specifically, these barriers include high research costs, extended payback times, elevated levels of risk, financial constraints, underdeveloped innovation infrastructure, and a low level of domestic competitiveness, among other considerations.

To ensure the success of the finance system for enterprise innovation activities, a thorough examination of its strengths, shortcomings, available possibilities, and threats is required. The following Strengths, Weaknesses, Opportunities, and Threats (SWOT) analysis helps identify strategic ways for expanding Uzbekistan's innovation finance system. The SWOT analysis reveals that, while there are several chances for strengthening the system of financing firms' innovative activities in Uzbekistan, the current weaknesses and threats may obstruct this process. To expedite this process, it is prudent to use the following strategic measures:

- Developing a system to attract venture capital and private investment for the financing of innovations.
- Increasing the volume of state-provided grants and loans for innovative startups and research and development (R&D) activities.

- Creating a favorable and attractive investment climate for foreign investors, which includes offering stimulating tax incentives.
- Fostering the development of research and development centers, technological parks, and startup incubators.
- Supporting innovative projects driven by emerging technologies and artificial intelligence.

The effective implementation of these measures will contribute to successful progress in shaping an innovative-driven economy and will significantly enhance the efficiency of financing the innovative activities of enterprises.

Conclusion and recommendations

All sources of financing innovative activities can be grouped into three groups based on the investment conditions: non-repayable targeted funding, debt-based financing, equity financing. The choice of the most effective combination of sources and methods of financing will not only ensure the continuity of the process of creation and implementation of innovations but also solve the problem of systematic introduction of innovative developments in the entrepreneurial sector. And, of course, lack of investment here means innovative ideas never get realized.

In Uzbekistan, the state expenditures for financial support of innovative activities increased 17.6 times in the period 2020–2024 against the backdrop of a 2.4-fold increase in Gross Domestic Product (GDP). This means that the growth rate of expenditures on financial support of innovation is higher than the growth rate of GDP. This is a positive trend from the point of view of developing science and innovation, introducing innovative technologies and scientific-technical developments in different sectors. At the same time, such dynamics are an important signal of the country's conscious transition to a modern economy. However, the expenditure on financial support of innovative activities did not even reach 0.5 percent of the GDP in the analyzed period, which is substantially lower than in many developing and developed countries.

New mechanisms for financing innovative activities must be introduced in Uzbekistan to attract decentralized investments. We find it expedient to establish venture funds, which are widely used in international practice, in the form of investment and mutual funds with subsequent sale of the shares of the participants to strategic investors after the implementation of an innovative project, considering the peculiarities of the national economy.

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