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THEORETICAL AND APPLIED ASPECTS OF ECONOMIC PROCESSES IN UKRAINE AND IN THE WORLD ECONOMY

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INCREASING THE ROLE OF INNOVATION IN THE ECONOMIC SYSTEM AT THE MACRO LEVEL, TAKING INTO ACCOUNT GLOBALIZATION PROCESSES

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Key words:
innovation policy, national innovation system, green economy, competitiveness, innovation infrastructure, globalization, knowledge economy, technological development.

The article highlights the significance of innovation in the modern economic system at the macro level, taking into account the challenges of globalization and the necessity to adapt national economies to new conditions. The work emphasizes the importance of developing the national innovation system (NIS) of Ukraine as a key tool for increasing the country's competitiveness in the global economy. A comprehensive approach is used to analyze the functioning of the NIS, which includes studying the relationships between its main components: education, science, innovation infrastructure and state regulation.

The methodological basis of the study is a comparative analysis with the experience of leading countries in the field of innovation development, in particular Finland. The article analyzes the strategic directions of the formation of the NIS, defined in the Concept of the Development of the NIS of Ukraine until 2025, and suggests ways to increase the effectiveness of the implementation of its tasks. Particular attention is paid to the problems of coordination between the public and private sectors, the insufficient level of financing of innovation activities, as well as the development of mechanisms for stimulating innovation through interaction with international markets.

The results of the study demonstrate that the effective functioning of the NIS of Ukraine requires the integration of world practices, investments in science and education, and stimulation of cooperation between universities, research institutions and business. The prospects for the implementation of innovations in the field of green economy, energy and high-tech production are determined.

The conclusions emphasize that the successful modernization of the national economic system is possible only under the conditions of active implementation of innovations. Recommendations are proposed for the creation of a favorable innovation climate, the development of effective mechanisms of state regulation and investment in infrastructure, which will contribute to increasing the innovation capacity of Ukraine.

ПІДВИЩЕННЯ РОЛІ ІННОВАЦІЙ В ЕКОНОМІЧНІЙ СИСТЕМІ НА МАКРОРІВНІ З УРАХУВАННЯМ ГЛОБАЛІЗАЦІЙНИХ ПРОЦЕСІВ

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Ключові слова:
інноваційна політика, національна інноваційна система, зелена економіка, конкурентоспроможність, інноваційна інфраструктура, глобалізація, економіка знань, технологічний розвиток.

Стаття досліджує значущість інновацій у сучасній економічній системі на макрорівні з урахуванням викликів глобалізації та необхідності адаптації національних економік до нових умов. У роботі підкреслюється важливість розвитку національної інноваційної системи (НІС) України як ключового інструменту підвищення конкурентоспроможності країни у світовій економіці. Для аналізу функціонування НІС використовується комплексний підхід, що включає вивчення взаємозв'язків між її основними складовими: освітою, наукою, інноваційною інфраструктурою та державним регулюванням.

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Методологічною основою дослідження є порівняльний аналіз з досвідом провідних країн у сфері інноваційного розвитку, зокрема Фінляндії. У статті проаналізовано стратегічні напрями формування НІС, визначені в Концепції розвитку НІС України до 2025 року, та запропоновано шляхи підвищення ефективності реалізації її завдань. Особливу увагу приділено проблемам координації державного та приватного секторів, недостатньому рівню фінансування інноваційної діяльності, а також розвитку механізмів стимулювання інноваційної діяльності шляхом взаємодії з міжнародними ринками.

Результати дослідження свідчать, що ефективне функціонування НІС України потребує інтеграції світового досвіду, інвестицій у науку та освіту, стимулювання співпраці між університетами, науковими установами та бізнесом. Визначено перспективи впровадження інновацій у сфері зеленої економіки, енергетики та високотехнологічного виробництва.

У висновках підкреслюється, що успішна модернізація національної економічної системи можлива лише за умов активного впровадження інновацій. Запропоновано рекомендації щодо створення сприятливого інноваційного клімату, розвитку ефективних механізмів державного регулювання та інвестування в інфраструктуру, що сприятиме підвищенню інноваційного потенціалу України.

Statement of the problem

Globalization, accompanied by the rapid development of technologies, changes in world economic processes and increased competition in international markets, puts forward new requirements for national economies. In such conditions, innovations play a key role in ensuring the competitiveness of the country. However, in Ukraine, despite the existence of conceptual documents and programs aimed at the development of the national innovation system (NIS), its effectiveness remains low due to the imperfection of the infrastructure, insufficient funding and weak coordination between the public and private sectors.

An important problem is the low level of Ukraine's integration into the global innovation space. This complicates the implementation of modern technologies, the creation of competitive goods, as well as the development of the knowledge economy. Thus, the need to improve the NIS through the analysis of its components, interaction mechanisms and taking into account successful global practices, such as the experience of Finland, becomes obvious.

The formation of an innovation-oriented economy requires overcoming a number of challenges, including: insufficient funding for scientific research and development; weak integration of science, education, and business; and the lack of effective mechanisms to stimulate innovation activity.

These aspects require systematic research in order to form a comprehensive approach to the development of innovation infrastructure, increase the share of public spending on innovation and R&D, and ensure sustainable economic growth in Ukraine.

Analysis of recent studies and publications

The topic of enhancing the role of innovations in the modern economic system, taking into account the globalization challenges in recent years, has found wide coverage in scientific discourse. The authors consider it through the prism of national innovation systems, their impact on competitiveness and sustainable development. Attention was paid to this topic by P. P. Mykytyuk, Zh. L. Krysko, O. F. Ovsyanyuk-Berdadina, S. M. Skochylyas, V. S. Naydyuk, and others.

Despite a significant amount of research in the field of NIS development and the existence of conceptual documents, some aspects (coordination mechanisms between the public and private sectors; a comprehensive methodology for assessing innovation capacity at the macro level; ways of international scientific and technical cooperation) remain insufficiently studied, which requires additional analysis.

Objectives of the article

The purpose of this article is to study the role of innovations in the macroeconomic system, taking into account the peculiarities and challenges of the global world, as well as to identify mechanisms for increasing the efficiency of the Ukraine's NIS to ensure its competitiveness. In particular, the implementation of the stated goal involves solving the following tasks: analyzing the significance of innovations and their impact on the country's economic development; assessing the state of the Ukraine's NIS and comparing it with other countries; developing recommendations for improving the mechanisms for the functioning of the Ukraine's NIS; studying the prospects for the development of innovations in the areas of the green economy, high technologies and energy; formulating strategic directions for the development of the Ukraine's NIS.

Together, the aim and objectives are aimed at creating effective mechanisms for the modernization of the NIS, which is a prerequisite for economic growth and integration of Ukraine into the global economy.

The main material of research

Before solving the outlined problems, it is necessary to review the theoretical and historical foundations of the NIS construction.

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The term «innovation system» appeared in the 1980s. This concept was first introduced by K. Freeman during the study of Japan's technological policy.

M. V. Sharko defines NIS as «an economic mechanism based on the creation and use of new knowledge, an entrepreneurial approach, integration into external markets, and accelerated development of the country's and its regions' competitiveness» [1, p. 26].

The modern process of NIS formation and development is considered through the organizational and methodological approach of innovation [2], which should provide conditions for creating an innovative environment at different levels of management. It includes the formation of a favorable innovation and investment climate and ensuring the efficiency factors of innovative development at the level of the state, regions and enterprises in the global economy.

A national innovation system can be characterized as: an interactive network of public and private sector institutions that create, adapt, import, modify and disseminate new technologies; infrastructure that contributes to the technological development of companies that can effectively use knowledge and innovation; a system for managing and using technology at the national level to implement innovations and organize collective learning processes; a mechanism that stimulates innovation development through the use of technology [4].

In view of the above, it can be summarized that the national innovation system is a complex of relationships between innovation entities aimed at creating, applying and disseminating innovations within a particular country. Its formation is determined by cultural, historical, scientific and technical, economic and informational conditions.

The NIS of Ukraine has a long history, around which there are often discussions about its structure, components and functions. As stated in the Concept for the Development of the National Innovation System [3], it includes state regulation, education, knowledge creation, innovation infrastructure and production. Each of these components must implement certain directions and perform tasks stipulated by the Concept.

The structure of Ukraine's NIS is quite extensive (Fig. 1). It combines both the public and private sectors, which interact with each other in generating, disseminating new and advanced knowledge, as well as their effective use to create new competitive goods.

The effectiveness of the NIS functioning depends largely on the level of cooperation between the private and public sectors. The presence of both the desire and the resources for interaction on the part of both institutions is an important condition for a successful partnership.

Currently, government programs are being implemented aimed at developing the state's innovation policy, which define the key tasks of forming the NIS. However, they do not sufficiently detail the relationships between the main elements of the system and the mechanisms for managing innovative development. This creates difficulties in coordinating the state industrial, financial, tax policy with the policy in the field of education, science, scientific, technical and innovation activities. As a result, the NIS of Ukraine is in poor condition.

The strategic goal of the functioning of the NIS is its development based on the achievements of scientific and technological progress. In each case, the strategy for the development of the NIS depends on the national macroeconomic policy, regulatory and legal support, mechanisms of direct and indirect state regulation, the state of scientific, technological and industrial potential, the volume of the domestic market, as well as on the cultural traditions, customs and specifics of the country.

In Ukraine, the main document regulating the development of NIS is the Concept for the Development of the National Innovation System [3]. Its purpose is to determine the key principles of creating and implementing a balanced state policy aimed at developing the NIS and increasing the competitiveness of the national economy. The tasks and directions envisaged by the Concept include: creating conditions for the effective work of innovation entities; integrating the Ukrainian research sector into the global scientific and technological space; increasing exports of high-tech products and technologies by 5-7 times by 2025.

The Concept is financed from the state budget, and an action plan is created every three years to ensure the development of the NIS. However, analyzing the realities of today, we understand that the objectives were not achieved due to martial law and other problems of modern Ukraine.

Trends in the development of the world economy clearly show that there is no other path for Ukraine to progress than the formation of a knowledge-oriented economy, that is, an intellectual and innovative type. Ignoring this fact may lead to the country's marginalization in the high-tech products market.

Globalization requires Ukraine to make certain transformations and adaptations, and to more actively implement innovations into the economic system. Therefore, Ukraine should be actively considering and studying the experience of other countries in resolving this issue.

We believe that Ukraine can benefit from the experience of Finland [6] in forming a national innovation system, as well as in developing macro technologies, clusters, and innovation infrastructure. Ukraine has much in common with Finland, in particular, a significant potential for economic growth based on innovation.

Finland's success in building a knowledge economy proves that such a level is achievable for countries with different levels of economic development. Several main areas of reforming the innovation system at the macro level can be identified:

– focusing on the policy of developing internal competition among producers of innovative products;

– full deregulation and liberalization of the telecommunications sector to spread innovative thinking and popularize innovative products;

– economic openness and liberalization, creating conditions for attracting venture capital;

– priority investment in the quality and accessibility of general and vocational education;

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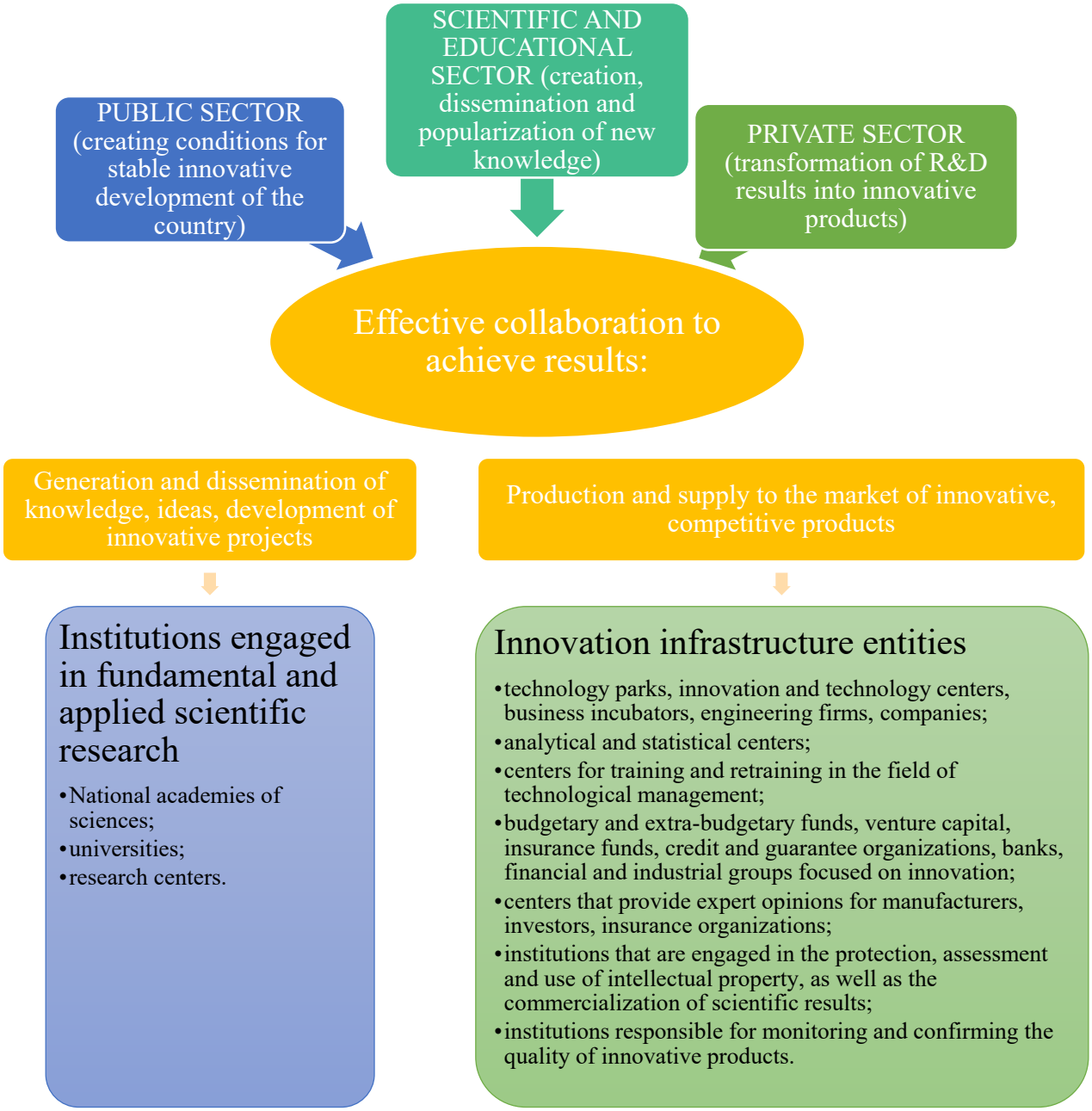

Fig. 1 – Structure of the Ukraine's NIS

Source: developed by the authors based on [4, 5]

– application of a systemic approach to industrial and innovation policy based on technological forecasting.

Finland's experience shows that education is a key area of investment in creating a knowledge economy, as it affects the demand and supply of intellectual capital. The essence of a systemic approach to industrial and innovation policy, taking into account Finland's experience, is to organize cross-links between research centers, universities, enterprises, industrial associations, financial centers and state agencies. For this purpose, it is advisable to apply methods and mechanisms that stimulate partnerships between these economic entities. This will allow achieving the desired results through prioritizing investment in R&D and an effective system of cooperation.

From the experience of Finland's development [6], several important aspects can be highlighted that should be taken into account for the development of Ukraine. First, the crisis can be turned into an opportunity. In Finland, GDP was quickly restored and a large-scale restructuring of the economy was carried out thanks to a high-quality education system. The high level of education of the population turned into a powerful impetus for economic growth. In addition, the education system responded quickly and flexibly to new opportunities.

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Secondly, Finland has constantly improved its technology and education system at the state level to maintain the competitiveness of the Finnish economy in a demanding global environment.

Third, it is important to anticipate and prepare for the future. The constant pursuit of progress and the strategic vision of institutional leaders have helped Finland transition to a knowledge economy.

Conclusions

The analysis conducted allowed us to draw the following conclusions:

1. The effective functioning of the NIS is an important condition for Ukraine's integration into the global market and the formation of an intellectual-innovative economy. This requires the use of world experience, in particular Finland, which demonstrates successful examples of implementing innovation policy.

2. One of the main problems preventing Ukraine from building an effective NIS is the insufficient level of coordination between the public and private sectors. This necessitates the development of mechanisms to stimulate cooperation between education, science, business, and government.

3. Taking into account the experience of Finland, it has been determined that investments in education and scientific research, the development of innovation infrastructure, and the promotion of a green economy are strategic priorities for the development of Ukraine's NIS.

4. Specific steps are proposed to improve the NIS, including reforming financial mechanisms, deregulating certain sectors, and developing innovative thinking through education and technology promotion.

Thus, ensuring Ukraine's competitiveness in the international arena is possible only if innovations are actively introduced, strategic economic management is implemented, and best practices are used. Further research should be aimed at a detailed analysis and improvement of coordination mechanisms between innovation actors, and at developing practical recommendations for their implementation.

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