INVESTING IN SCIENCE AND INNOVATION AS A FACTOR OF DEVELOPMENT

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Abstract: One of the crucial components in the development and spread of innovations is financial resources. The world's top nations demonstrate the characteristics of sponsoring innovative activity. The thesis demonstrates how a successful innovation depends on a balanced interaction of financial and non-financial components.

The innovative process of creating an innovation from an idea to its commercialization requires certain financial costs, labor and mental efforts. The size of investments (corporate and state) are the most important imperative to enhance innovation and are traditionally considered as the main "input" indicators of the development of innovation infrastructure, in this case, the financial infrastructure of innovation activity. At the same time, the modern theory of innovation development assumes a systematic approach to the organization of innovation activity, which provides for the close interaction of several subsystems: human (including intellectual) potential, financial and technological capital, as well as relevant institutions and methods of regulation.

The practice of the leading countries in the field of innovation confirms the thesis about the extremely high importance of the harmonious connection of the key subsystems of the economy and society in an integral innovation system. Specific methods of such connection, forms of innovation systems, mechanisms for coordinating economic agents, participants in innovations - researchers, technology developers, investors, producers of new goods and services - are determined by the features of the national economy model, historical, spatial, sociocultural and other factors. In this regard, the study of the conditions for successful innovation common to most countries and the analysis of the features of innovation financing are an urgent scientific task.

Features of financing innovations: international trend

The capital required for the implementation of innovative developments, continuous investment in fundamental science and R&D represent the most important group of factors for the activity of innovation. The developed capital market in the United States includes the finance of private investors and companies, numerous venture capital funds and business angels. In the US, there is little centralized strategic planning for the innovation process, because of the short duration of public funding,

which creates uncertainty for advanced research. The United States is characterized by relatively low-risk government funding policies for innovation, and, on the contrary, risky, avant-garde projects in the private sector. On the other hand, the ability of market mechanisms to form a good solvent demand for potential products of new technologies and their promotion creates a fairly solid foundation for the rapid commercialization of research results.

The American economy is distinguished by an extremely developed network of financing institutions adapted to the promotion of ideas at the early and other stages of the innovation process - both from the banking sector, and from the venture business and various non-state funds. In the United States, where the financial sector and venture business are developed, there is a wide network of venture capital and other financial funds, from which most of the money for innovation comes. Opportunities of financial institutions: joint-stock companies and credit institutions greatly facilitate access to sources of financing, which is especially important for start-ups, small and medium-sized enterprises. A wide network of American venture funds is spreading deep into the world economic community; they are not afraid to take risks. In the US, the contribution of venture capital to innovation is estimated at $50-60 billion a year. During the crisis of 2008-2009 the venture capital system was greatly shaken, venture investments in the early stages were reduced, the access of new companies to venture capital was limited to 25 billion dollars. Simultaneously with the reduction of financial resources, the importance of individual investors is growing

On the contrary, many of the problems of financial support for the innovation process in Japan are due to the lack of appropriate funds and the system of bank financing of innovation projects. The conservatism of Japanese thinking adds barriers to the unwillingness to risk money and the stability of the business. Unlike the American model with a relatively developed banking system and a system of interactions between participants in innovative processes that has been debugged for decades, the Japanese model is focused on other principles for implementing innovative processes: the birth of ideas, in particular, their further promotion, is concentrated in large private corporations (in electronics – Panasonic, Sony etc). At the present stage in Japan, there is no great need for state participation in financing these areas of science and technology, the state prefers to invest in industries closely related to life: biotechnology, "green" technologies, nanotechnologies, "alternative" energy, information and communications.

In Western countries, the main share of R&D costs is made up of private business funds: on average for the OECD - 70%. For these purposes, endowment funds have become widespread abroad - special-purpose financial funds, as, for example, the

Gatsby charity in the UK. In the UK, the Council for Technology Development Strategies provides innovators with up to 50% of the funds from the budget of an innovation project. The creation of an extensive venture capital system in the UK is a significant part of the success of the market implementation of discoveries.

Continuous and effective financing of innovation processes in the United States is ensured by joint efforts - on the part of both private companies and individual investors (business angels) on a contract basis, and within the framework of federal agencies. The US innovation funding infrastructure includes several development institutions and disbursement mechanisms, including institutions such as the Office of Science and Technology under the President's Office; special committees in the US Congress; Federal agencies: National Science Foundation, formed in 1950, National Institutes of Health, etc. Education The National Science Foundation has stepped up support for research at the federal level. For example, one of programs – Research Center for Industry-University Collaboration – designed to provide government funding and support for collaboration between business and academia in the field of innovation. Federal funding for research occurs through government agencies: NASA, the National Institute of Standards and Technology, the National Science Foundation, the National Institutes of Health, the Department of Defense, etc. The annual budget of the US National Science Foundation is $ 7 billion, National Institutes of Health spends about 35 billion dollars on research, plus the expenses of the Ministry of Defense and the Ministry of Energy, as a result, the total costs amount to 50-60 billion dollars. Public funding is most important in the early stages of a project.

Unlike many economies in the world, the problem of financing at the initial stage of the project is solved in the USA with the help of Federal grant programs such as Small Business Innovative Research.

The advancement of society and the economy depend on investments in science, technology, and innovation. By constructing greener, more inclusive communities, research and development (R&D) can promote sustainable development. However, for them to be successful, public and private R&D, technology transfer, and infrastructure development need to be supported and governed by efficient policies.