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Economics of Innovation: The Problem of Technological Breakthrough

V. A. Sidorov

Doctor of Economics, Professor of Kuban State University (Russia)

I. E. Tursunov

Candidate of Economics, Associate Professor of the Karshi Engineering and Economics Institute (Uzbekistan)

Sharipov Tulkin Saidakhmedovich

Associate Professor, Candidate of Economic Sciences of the Department of "Real Economy", Samarkand Institute of Economics and Service

Mirzaeva Shirin Nodirovna

Assistant-Teacher of the Department of "Real Economy", Samarkand institute of economics and service

Abstract: The article is dedicated to the problems of internationalization of relations between Russia and Uzbekistan based on the innovative component. The problems of market stability of the two countries are considered, and the prospects for the development of this form of management in the conditions of technological innovations are revealed. The possibilities of innovative development are shown, in which the issues of the new appearance of production are revealed. Proposals were made on priority directions for the formation of a new image of production. The author formulated the conceptual directions of forming an innovative model of development: departure from the principle of methodological individualism, orientation to national needs, internationalization of partnership relations.

Keywords: competitiveness, innovation, technology, high-tech products, nanotechnology, startup, sensors, innovation

Analysis of the used literature

Modern trends in the development of the world economy are closely related to the growing role of innovative technologies and knowledge in the life of society. The economy is changing, becoming more innovative, and these changes are based on the use of new technologies, high-speed telecommunications and the transformation of the education system.

Prospects for the development of Uzbekistan are associated with the formation of an innovative economic system, which is designed to ensure an increase in the innovative activity of economic entities and an increase in their number to ensure the technological modernization of enterprises, increase the competitiveness of the national economy and, ultimately, increase the welfare and quality of life of the population. In this regard, in the process of implementing reforms, it is required to improve and develop new tools for innovative development adapted to modern conditions and focused on solving the tasks set in the Action Strategy for the five priority areas of development of the Republic of Uzbekistan in 2017-2021.

The state action strategy is being implemented in 5 stages, each of which provides for the approval of a separate annual State program for its implementation in accordance with the declared name of the

year. 2018 announcement by the President of the Republic of Uzbekistan Sh.M. Mirziyoyev, the year of supporting active entrepreneurship, innovative ideas and technologies, is of great importance for the development of all sectors of the economy. The document provides improving the system of state and social construction, ensuring the rule of law and further reforming the judicial and legal system, developing and liberalizing the economy, as well as the social sphere, and priority areas in the field of security, religious tolerance and interethnic harmony, as well as the implementation of a balanced, mutually beneficial and constructive foreign policy of the country.

Thus, Uzbekistan has all the prerequisites for the development of an innovative economy. In the conditions of innovative development of the economy, the most important development factors are the intellectual potential and its effective use in the economy, the integration of education, science and production. This follows from the reports of the President of the Republic of Uzbekistan Sh.M. Mirziyoyev, as well as in the Action Strategy for five priority areas of development of Uzbekistan in 2017-2021 [1].

Recently, interest in interstate cooperation between Russia and Uzbekistan has increased dramatically. This was especially evident after October 2018, when the first Forum of Interregional Cooperation between the two countries was held. Uzbekistan is one of the largest states of the CIS, in terms of population, ranking second after Russia, which confidently holds the lead among the trade partners of Uzbekistan, occupying almost 16% of the foreign trade turnover of the republic. Among the promising objects of cooperation, it is necessary to highlight the preparatory work for the construction of the first nuclear power plant in Central Asia with an investment of more than 11 billion rubles. Uzbekistan has significantly increased the supply of food, textiles and other products to various regions of Russia. Expansion of sales markets, attraction of investments, humanitarian, military and political cooperation are in the focus of attention of countries. Work is underway to change the structure of exports (more than 50% of which is raw materials: gas, gold, silver, copper, zinc, polyethylene, etc.), the conjuncture of foreign markets and the position of Uzbek business on them.

Analysis and results

Despite the COVID -19 coronavirus pandemic, Russia's share in Uzbekistan's foreign trade turnover increased by 1.3% in the first half of 2020, while the trade turnover itself increased by 18.2%. The main areas of cooperation between the two countries continue to be the fuel and energy complex, metallurgy, mechanical engineering, telecommunications and the agro-industrial complex. In the structure of Russian exports, the leading place is occupied by metals and products from them (24.21% of total exports), machinery, equipment and vehicles (16.22%), mineral products (15.24%); food products and agricultural raw materials (14.20%), wood and pulp and paper products (13.42%), chemical industry products (11.20%). The structure of imports from Uzbekistan is as follows: textiles and footwear (70.46% of Russia's total imports from Uzbekistan), food products and agricultural raw materials (12.33%), chemical products (8.91%), machinery, equipment and vehicles (3.57), metals and products from them (2.43%) [2].

An innovative oriented business, based on the latest technological advances, creating high value-added products that are in high demand by consumers, is able to take advantage of the opportunities provided by the internationalization of economic relations. In terms of the share of exports of science-intensive products in world trade volumes, the undisputed leader is the Philippines - 60.5%, followed by Malaysia (52.3%) and Singapore (51.7%), a group of countries (China, South Korea, France, Israel, Great Britain) confidently exceed the 20% mark. The USA (18.9%), Japan (17.3%), Germany (15.7%) close the top three. Russia completes this series with 11.0%. The share of Uzbekistan is 1.2% [3].

In the Standard International Trade Classification (SITC), the group of key technologies is represented by 16 science-intensive products: radioactive materials, pharmaceutical products, automatic

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information processing equipment, semiconductor devices, telecommunications equipment, aerospace and medical equipment. The high-level technology group includes 41 types of products from the automotive, mechanical engineering, electrical and chemical industries. These areas can be considered a key benchmark for the development of innovative production in partner countries. In this regard, it is interesting to analyze trends in the development of knowledge-intensive industries abroad (see Table-1).

Table 1. Sectoral structure of the economies of the leading countries of the world *2019*

Country	Place in GII 2019	GDP at PPP, billion dollars	Leading industries, % of GDP		
			Services sector	Industry	Agriculture
China	14	27 331	44.0	48.1	7.9
USA	3	21345	79.9	19.0	1.1
India	52	11468	58.0	27.0	15.0
Japan	15	5750	72.0	27.0	1.0
Germany	9	4467	64.6	34.6	0.8
Russia	46	4358	57.9	37.9	4.2
Indonesia	85	3743	40.0	46.0	14.0
Brazil	66	3496	63.0	30.0	7.0
United Kingdom	5	3128	74.5	24.2	1.3
France	60	3055	79.8	18.3	1.9

The presented table characterizes the high share of the service sector in the country with the highest level of GDP production in terms of purchasing power parity. In some cases, these figures exceed 70%. An interesting fact is that countries with a large volume of gross output are not always among the most innovative. This is evidenced by the value of the global innovation index, given in the second column of the table. China, which is in first place here, according to the authors of GII 2019, occupies only 14th place in the global innovation index; 46th in the Innovation Index. Uzbekistan is not in the index, because there was not enough information for analysis; in 2015, the country was on the 122nd line.

Thus, the priority areas of development in Japan are: medicine, high technology, robotics, automotive, energy conservation and space research. In 2019, $170 billion was allocated from the budget to support science here.

The American Innovation Strategy focuses on education, energy, and entrepreneurship. The country confidently occupies a leading position in spending on scientific research, the annual volume of which is estimated at approximately $520 billion.

Germany is focused on increasing technological capabilities and research intensity, improving its approaches in sectors related to diesel fuel, digital communications and artificial intelligence. The annual amount of funding for research and development work here is 130 billion dollars.

South Korea, which is a six-time winner of the Innovation Index ranking, cannot be bypassed in this analysis. Its success lies in its R&D industry funding and start-up incentive program, encouraging highly concentrated chaebols (South Korean form of financial-industrial groups) and family conglomerates.

It should be emphasized that there is a tendency to change the structure of world research and development in the period from 2000 to 2019, the share of China increased from 5% to 26%, while the share of the United States decreased from 40% to 28%, and Japan - from 15%. % to 9%. [four]

Another feature of modernity is the outsourcing of innovations, which indicates the processes of formation of a single scientific and technical space. In conditions when the global economy has cracked, the concept of a techno -industrial system of production comes to the fore, structuring self-regulating local systems that build exchange relations according to the network principle. As a result, a system is emerging in which direct manufacturers of high-tech products do not fully manufacture their products - a model is in place when part of the business is transferred to third-party contractors, often scattered across different countries. A new type of division of labor is being formed - scientific research, development and innovation are taken over by the "core countries", and the " semiferal countries" are engaged in the direct production of the final product.

Methodology and Research

Imperatives of the New Model of Economic Development - this question about the model of economic development is a hot topic for discussion in both Uzbek and Russian society. In the current conditions, when forming a new model of socio-economic development, the only correct, one might even say necessary, is only an innovative way of development and the systemic modernization of the economy associated with it. At the same time, it is useful to use foreign experience, taking into account national specifics, the historical path of development, as well as psychological, moral, and universal factors.

Movement at the market rate of Russia and Uzbekistan is a multifaceted phenomenon. It touches on such key points as the formation of a general theoretical model of a modern market economy, the disclosure of the specific conditions of countries that have an impact on the design of the national component of market development, and the determination of the vector of transformations in market coordinates.

The historical experience of developed countries shows not only the private property constituting the market economy, but also the inevitability of its evolution in its content. Today, the market model is based on a combination of various forms of ownership, within which the property of joint-stock companies occupies an economically dominant position. Its dominance is manifested in the formation of the institutional basis of the economic model of property polyformism. This, in turn, indicates the fact that the market model is functioning on a mixed basis.

The innovative development path provides for the continuous achievement of progressive shifts in economic development. This can be achieved only by awakening the enthusiasm of the masses. Achieving this requires a fundamental reform of income distribution and modernization of the economic order. This trend indicates an unfavorable investment climate, lack of proper trust in the government. The problem of modernization of the Russian economy lies in the low rates of economic growth, the absence of a large-scale policy of public-private partnerships, the poverty of the population, low wages, and dependence on external factors.

Nevertheless, the competitive advantages of Russia in the field of fundamental and theoretical science make it possible to create a model of interdisciplinary innovation that allows producing discoveries at the intersection of sciences. The projected model of economic development can be based on the following factors:

1. Departure from the principle of methodological individualism;
2. Focus on national needs;
3. Development of partnerships.

The principle of methodological individualism presupposes the rationality and selfishness of economic agents. It assumes a certain homogeneity of economic interests that form the selfish behavior of economic entities. This state of affairs has established itself in a market economy and is supported by

the relevant institutions regulated by the governments of developed countries. There is a situation known as Pareto efficiency: no one can increase his level of well-being without lowering the well-being of another. This rule has taken the form of an axiom in the works of liberal economists, and in economic practice has led to an imbalance of private and public interests.

In this regard, the solution to the problem of transition to a new model of economic development should begin with a departure from the principle of methodological individualism. For this, it is necessary to consider society as an integral system, in its content not adequate to the sum of its agents.

Conclusion and suggestions

The problems of creating an innovative reproduction environment in Russia are well known: insufficiently high technical and technological level of production, relatively high depreciation (both physical and moral) of fixed capital, low investment in renovation and renewal of production. However, the most serious obstacle to building a digital economy is the low quality of investment in innovation, which produces the reproduction of obsolete technologies.

In Uzbekistan, innovative developments are concentrated mainly in the sectors of agriculture, construction, healthcare, industry, and education. Within the framework of the strategy of innovative development of the Republic of Uzbekistan, the main goal is the development of human capital, as the main factor determining the level of competitiveness of the country. The main tasks to achieve the main goal:

- Improving the quality of education;
- Strengthening scientific potential and efficiency of scientific research;
- Increasing investment in innovation;
- Introduction of modern methods and management tools;
- Development of public-private partnership;
- Creation of a sustainable functioning socio-economic infrastructure.

Despite the relatively high investment potential of Uzbekistan and the creation of favorable conditions for investment activities, investments in innovation are used rather poorly, as evidenced by the low level of investment activity of business entities. In this regard, the implementation of innovation policy in the republic should be closely linked with the restructuring of the economy, the target of which should be scientific and technological progress, and the provision of large-scale qualitative changes in the economy.

The gradual elimination of internal disproportions, the agglomeration of private and public interests, and the focus on national needs in constructing a new image of the economy convince us of the need to develop partnerships. In the foreseeable future, they will make it possible to form an original civilizational project of economic development. For this, borrowing of managerial forms and technologies, development of conceptual creativity, experimental modeling of economic life, development of initiatives for designing advanced development territories can be used for this (following the example of China).

In the economy, there is an objective relationship and interdependence between investment, innovation and efficiency. The competitive advantages of economic entities in the domestic and foreign markets are realized more efficiently if the predominant part of investments is systematically directed to innovative modernization and renewal of the production and technological base of the real and private sectors of the economy. In our opinion, to ensure the innovation-oriented development of Uzbekistan, it is necessary to solve the following priority tasks:

- Strengthening the role of the private sector, which can increase exports through more effective competition. Such enterprises lack the initiative that is so important in the competitive struggle in world markets;
- Improving the stability parameters of the macroeconomic environment (in particular, reducing inflation);
- Expanding access to the main export markets by negotiating with the main consumer countries to remove trade, primarily non-tariff barriers for export goods of Uzbekistan;
- Increasing the competitiveness of the economy and modernizing production assets using advanced technologies and production management methods in advanced industries;
- Strengthening the scientific and technical potential necessary for further expansion of the production of investment goods and diversification of products;
- Stimulation of technological re-equipment of production and introduction of innovative technologies;
- Creation of a unified system of continuous training of personnel for small enterprises that are able to quickly adapt to the constantly changing market conditions.

Thus, improving the national innovation system in the Republic of Uzbekistan is a key task in the development of the scientific and technical sphere and ensuring scientific and technological progress in our country.

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