

Problems and Prospects of Infrastructure and Innovative Development of Kazakhstan

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ABSTRACT

This article is devoted to the research of solving the problems of innovative development and infrastructure of Kazakhstan. The article presents many examples of the development of innovation from foreign countries and a comparison with the current situation in Kazakhstan. The main problems in the development of innovative industry are identified and appropriate solutions and recommendations are proposed. In order to accelerate the slow development of economic growth in this area, the article raises the issues of attracting investment, the development of high-tech technologies, the elimination of technological backwardness, the development of the scientific sector, as well as issues of financing.

Keywords– Innovative Development, Investment, High-Tech technologies, Technological Backwardness

I. INTRODUCTION

In the modern world at the stage of crisis phenomena, the economy of Kazakhstan does not lose the dynamics of its development, a competitive economic environment is emerging, radical changes are being made in the scientific and technical sphere. At the same time, a significant role is assigned to cardinal transformations - overcoming technological degradation, mastering the techniques of the modern fifth and future sixth technological orders. The task of the transition to industrial-innovative development of the economy, an orientation to support high-tech industries, the sector of small and medium enterprises.

The rapid development of large markets in Russia and China makes it promising to form export markets to meet the demand for high value-added products produced on the basis of specialized raw materials for Kazakhstan.

Nowadays it is the scientific and production potential of the leading industrial centers that determines the country's chances to take a leading place in the future, providing its citizens with decent living conditions. Effective use of the available scientific and production potential, resource and technological capabilities is the task of any socio-economic formation, the condition of its well-being, and sometimes survival. The vast majority of gross domestic product growth in developed countries in recent years has been obtained through new scientific knowledge embodied in technology, services, equipment,

skills, production organization. A significant increase in the competitiveness of knowledge-based innovative products in the total GDP becomes the main means of increasing profits by better meeting market demand and reducing production costs compared to competitors.

II. ECONOMIC DATA

Economic transformation can be seen in the following directions

- Increasing the share of final products in exports and services, while reducing the share of minerals and fuels;
- Increased integration of efforts and potentials in the framework of the EurAsEC for a technological breakthrough;
- Improving the competitiveness of economies and joint performance in world markets.

Economic growth in Kazakhstan is mostly provided by the intensive development of non-renewable mineral resources. The technical and technological backwardness of some enterprises, the lack of an effective connection between science and production pose a certain threat to the economic security of the country. According to preliminary statistics, in 2015 Kazakhstan's total exports of mineral products accounted for 78.7%, and only 0.8% for machinery, equipment, vehicles, devices and apparatus.

The experience of the economically developed countries shows that the share of new knowledge embodied in technologies, equipment and organization of production in the industrialized countries accounts for up to 75-80 % of GDP growth. In Kazakhstan, this figure is characterized by significant growth in 2015. In the same year 219571.2 million tenge was allocated for technological innovations, which is 7 times more than in 2010 (30867.3 million tenge). [1]

The level of innovation activity is determined by the presence of a strong knowledge base and mechanisms for the implementation of existing intellectual potential. Although the number of innovative active enterprises in the country is growing, this figure is below the level of many countries - 4.3%, in some regions this figure is even lower. Meanwhile, the share of innovative enterprises in the US is about 50%, Turkey – 33, Hungary – 47, Estonia – 36, Russia – 9.1%.

Low innovation activity is associated with the lack of interest of foreign investors in the implementation

of breakthrough projects in production, lack of incentives for domestic entrepreneurs and skills of commercialization of projects.

World practice shows that the level of innovation activity in the region's industry is directly related to the role of science in economic reform, as well as the amount of funding.

Country	GDP
US	2,9%
Japan	3%
Germany	2,35%
France	2,25%
Sweden	4,0%

Table 1 –Number of GDP allocated for research funding

It should be noted that the EU recommends its members to increase the level of investment in science to 2.5 % of GDP. In Kazakhstan, over the past 10 years the volume of funding for science has increased, but in comparison with 2005 when it was 0.18% today's funding is only about 0.38 % of GDP.

One of the most important functions of the state in developed countries is to create favorable conditions for innovative activity of the sector's entrepreneurship. There are economic and budgetary policy measures such as:

- Inclusion of costs for R&D of the private sector in the cost of production;
- Write-off of a significant part of scientific equipment according to accelerated depreciation rates;
- Application of a system of targeted tax benefits aimed at increasing the volume of scientific expenditures in large corporations and attracting small and medium-sized businesses to innovative activities in the field of new technologies;
- Preferential crediting of scientific and technical developments and equity financing of large projects, creation of institutional conditions for the development of venture financing;
- Free transfer or provision on preferential terms of state property or land for the creation of innovative enterprises, as well as scientific infrastructure in the regions.

III. STIMULATING FACTORS OF INNOVATION PROCESS

Innovative processes can be successfully developed on the basis of the creation of appropriate infrastructure, including consulting and engineering firms, services of "incubators", techno parks, information centers, leasing, venture capital. [2] Risk Finance is a long-term investment of capital placed not in the form of loans, but in the form of mutual contributions. The capital of risk companies is formed at the expense of pension

funds, insurance companies and banks, the population. However, the bulk of all risky investments go to the high-tech industry.

The availability of modern production and social infrastructure is a necessary factor in the accelerated and qualitative development of the economy. A large area of Kazakhstan and its geo-transitory nature dictate the need for dynamic development of energy, transport and telecommunication complexes. With regard to the model of industrial and innovation strategy of the country, the criterion of optimality is the functioning of the model, which is recognized as more effective of the possible options for the development of the national economy. [3]

In this aspect, it should be noted that the stimulation of production and innovation occurs through the use of the mechanism of state regulation and economic stimulation. Innovation policy involves a system of measures to selectively support strategically important sectors of the national economy. They are intended to affect economic growth, structural transformation of the economy, including the innovation sector.

The following criteria are applicable: a favorable combination of factors of production; the availability and implementation of scientific and technical potential and know-how that can provide a technological breakthrough; resources of skilled workers; the possibility of using information technology; the possibility of inflow of foreign and domestic investment in the restructuring of production and its innovation; the availability of competitive related industries, making it possible to transfer of skilled personnel and technology from sector to sector and from region to region; the stability of reproductive relationships.

Stimulation of innovative processes is implemented within a complex dynamic system, the effectiveness of which depends on both internal mechanisms and interaction with the external environment. [4]

In foreign practice, there is a wide variety of organizational structures and methods of innovation management. However, all of them are used so that at each stage of the innovation cycle the rapid transfer of innovations to the consumer is ensured. The choice of specific structures and methods of management is determined by factors such as the importance of innovation, the degree of its development and logistics, the duration of specific stages.

The main organizational element of innovation regardless of the organizational form and structure of management should be the scientific and engineering team, formed on the principles of voluntariness, functional subordination, production and economic independence.

In comparison with the industrialized countries, real insignificant capacity of domestic market of the national economy of the Republic of Kazakhstan limits the potential of economic growth. [5] For the sustainable

development of the economy of Kazakhstan it is necessary to solve the issues of improving the competitiveness of the national economy.

Due to promotion in the structure itself qualitative changes in the economy of the region can occur without major quantitative changes. Within the framework of a relatively constant quantitative composition of the economy, there may be a number of qualitatively different states. [3] This form of structural development is typical for developed regions. In such regions, the qualitative structure of the economy can be formed due to the redistribution of resources, in particular, the reduction of the absolute scale of hypertrophied developed industries, while accelerating the development of other industries. At the same time, it is necessary to increase the depth of processing of mineral, hydrocarbon and agricultural raw materials, to master the production of final products in metallurgy, recycling of secondary raw materials. Subsequently, through the conversion, development of small business, and joint venture, it will be possible to lay the core of high-tech industries on the basis of existing capacities for the production of devices, automation, radio engineering. Also to begin to form the industry of computer science, new materials based on composites, ceramics and plastics.

IV. FINANCING PROCESS

The main source of funds for the financing of innovative industrial policy programs is income from commodity exports. Therefore, the achievement of the strategic objectives of structural adjustment requires, firstly, the prevention of leakage of revenues from commodity exports and, secondly, the establishment of effective mechanisms for their conversion into productive investment. Capitalization of revenues from traditional commodity exports is one of the most fundamental problems of industrial policy. [6]

Support for competitive sectors of the economy should go hand in hand with a package of innovative development factors. The most important instruments of such policy include: improvement of tax legislation aimed at replenishing budget revenues by expanding the tax base and shifting the focus to the taxation of natural rent; improvement of technology for tracking loans to prevent their use in speculative operations.

It should be noted that Kazakhstan was the first of the CIS countries to create a National Fund designed to stabilize the situation on the currency and financial markets and accumulate additional revenues from the export of raw materials for the future innovative development of Kazakhstan's economy. In order to intensify investments in priority sectors, the development Bank of Kazakhstan was established for the purpose of medium-term and long-term lending to investment projects aimed at the development of industrial infrastructure and manufacturing. [7]

In Kazakhstan, the implementation of innovative solutions requires investments. In recent years, this problem has not been solved enough. R&D is financed from the state budget. Funds of the state budget and grants of trust funds are spent mainly on fundamental works, while funds from the budget for the implementation of scientific and technical developments, applications and services are almost stopped. The main source is the own funds and customer's funds.

V. STRATEGY OF INDUSTRIAL AND INNOVATIVE DEVELOPMENT

The leading countries in the world of technological and economic progress adhere to the model of development in which they create the most advanced production technology and effective mechanisms to ensure the growth of national wealth. Another model - catching-up development - is typical for countries that are in the next "echelons" of world technical and economic progress. [8] In Kazakhstan, there is no need to repeat this stage of development, there are reserves in the country which in case of accelerated modernization can become points of growth.

The strategy of industrial and innovative development includes the optimal choice of industries of the fourth technological mode, and its basis in the world economy is auto and tractor construction, nonferrous metallurgy, durable goods, synthetic materials, organic chemistry, production and processing of oil. The main interests of the development of production of the fifth technological order is to use its base - electronic industry, computer technology, software, telecommunications, robotics, gas production and consumption, information services. It is advisable to form the prerequisites for the emergence of the future of the sixth technological order in biotechnology, space technology, fine chemistry.

The initial stage of implementation of the Strategy of industrial and innovative development of the Republic of Kazakhstan is associated with solving the problems of overcoming technological backwardness, modernization of basic industries. [9] This involves the development and implementation of high technologies that increase the impact of important sectors of the economy.

The widespread introduction of innovative technologies requires the creation of high-tech centers, considered in many countries as incubators of new technologies and knowledge-intensive products. Kazakhstan has embarked on the integration of science and production through the creation of techno parks. The weak side of attracting high technology is the lack of scientific base.

Trends in the world economy of the "third wave" show that high technologies are not generally exported to underdeveloped countries.

At the present stage of development, the leading role in formation the innovation process should be played

by the state not only through its direct financing, but also on the basis of stimulating taxation for high-tech businesses, as well as creating a system of incentives for investment in the knowledge economy and the export of knowledge-intensive products and services.

VI. CONCLUSION

Today in our country there are development institutions dealing with the problems of production of high-tech products, but they are not enough for the implementation of ideas on a large scale. To achieve the effectiveness of the work it is necessary to develop the financing of projects for research and development, initiative and risk research of applied nature; to ensure the quality of investment in the industrial and innovative sector; intensive development of information and communication technologies; promotion of the most promising science-intensive technologies to the domestic and foreign markets through regional techno parks. In order to further stimulate scientific and innovative activities, proposals have to be made to amend the tax legislation in terms of stimulating scientific and innovative research and work, as well as the introduction of scientific achievements and innovative developments into production. These measures together will allow to achieve a synergetic effect in the development of the economy of our country.

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