THE ANALYSIS OF INNOVATIVE DEVELOPMENT OF THE REPUBLIC OF KAZAKHSTAN IN WORLD COMPARISON

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Abstract- The key objects of research are: the current state of technology and innovation in Kazakhstan (based on statistics); national innovation system of Kazakhstan. The research in this article analysis the statistical indicators of innovation development in the Republic of Kazakhstan in comparison with the leading technologically developed countries, in particular on such indicators as a share of innovative enterprises, the volume of domestic expenditure on research and development (percentage of GDP), export of high-tech products.

Index Terms- business, export of high-tech products, innovation, investments, new technologies, raw materials.

Kazakhstan’s economy is in condition of independence and the reformation, now it has key task which is improving innovate activities and practical using scientific and technological achievements that provide competitiveness in the global market [1]. At a later date due to conversion, small business development, joint business it will be possible to high-tech industries on the basis of existing facilities for the production of instruments, automation, radiotechnics, start to shape the industry of computer science, new materials based on composites, ceramics and plastics.

The innovations are realized by complex dynamic systems, its efficiency depends on using internal mechanisms and from interaction with the external environment. Today in Kazakhstan are explored three directions of innovations:

First, least effective-public sector of economic, there state is mediator between the community with its and the science.

Second direction-communication between science and big business.

Third- the creation small innovation firms to find new ideas, its rating and realizing.

To realize the innovate solutions are required to attract big investments. But this task resolves slowly. For example, investments in pre-crisis period to research work were 0,6-0,7% GDP, in post-crisis period this index is only 0,2-0,3% [2].

Now the state budget preferable is financing the research and development. Its funds and grants trust funds are spent mainly on basic research and for scientific and technical developments, applications and services from the budget appropriations practically stopped. The main source of small-volume financing innovation in industrial enterprises are own funds and client funds. Lack of funds from potential customers caused a decrease in demand for the development, scientific and technical services.

The share of R & D expenditures relative to GDP is calculated using the following formula:

\[ DE_{gdp} = \frac{DE}{GDP} \times 10 \]  \hspace{1cm} (1)

Where: \( DE_{gdp} \) - the share of R & D expenditures in GDP;

\( DE \) - gross domestic expenditure on R & D (GERD);

\( GDP \) - gross domestic product.

In recent years, funding of fundamental research and development work is increasing. The bulk of the cost structure belongs to the public sector. However, in relation to GDP expenditure on research increased slightly, and in the period from 2006 to 2007 they even declined. The scale of domestic expenditure on R & D Kazakhstan still lags behind technologically advanced countries. The country is experiencing growth in domestic expenditure on research and development in 2012, which amounted to 51.2 billion tenge with growth of 18.2% compared to 2011 (43.3 bln) [2].
In 2014, domestic expenditure on research and development activities compared to last year increased by 7.6% and amounted to 66,347.6 million tenge. The total volume of domestic spending, the proportion of the costs of applied research was - 57.9%, basic research - 23.0% and experimental development - 19.1% [2].

As part of the financing sources of domestic spending on research and development activities at the expense of borrowed funds was financed - 70.1% of R & D at its own expense - 29.9%. At the moment, expenses for research and development as a percentage of GDP are at the level of 2006 and does not exceed 0.25%, which is very low. For comparison, the highest share of domestic expenditure on research and development in the GDP according to 2013 have Israel (4.21% of GDP), South Korea (4.15%), Finland (3.32%), Japan (3.49%) [3], [4].

Translation economy on an innovative way of development has allowed many countries of the world in a short historical period to achieve tremendous success in the economy.

Effective promotion of innovation within the innovation cycle can only be achieved through close organizational and economic cooperation (up to integration) research teams and industrial enterprises. In all industrialized countries, scientific departments of industrial companies carry out the bulk implemented in these countries applied research and development. Most industrial companies have their own research institutions and laboratories. These units provide continuous in-house development of high-performance innovation, giving real practical orientation of the research, the accelerated use of research results in production.

The scope of work in Kazakhstan in the final stages of research, so developing and communicating the results to the state of finished products - several times lower than in the world.

The organizations analysis showed that a priority of R&D are research in the field of Engineering and Technology, whose share in total domestic expenditure on research and development activities amounted to - 40.5%. The expenditures on research in the natural sciences occupy 35.5% of research in the field of agricultural sciences - 11.1% of Medical Sciences - 4.2%, the humanities - 6.5% and social sciences - 2.2% [2].

Research and development works involved 25,800 people, including specialists, researchers are 18,930 people in 2014 [2].

The number of doctors who were carrying out research and development activities amounted to 2014 people, the doctors on the profile of 610 people, the number of doctors of philosophy PhD - 335 people, the number of candidates of sciences - 5335 persons and the number of masters - 3183 people [2].

Innovation activity in Kazakhstan has not yet received that the theoretical and practical level, that would contribute to overcoming the technological gap, changing the nature and the volume of production in all sectors of the economy. In the industrialized countries for the implementation of product innovation accounted for over 20% of national income growth.

The proportion of innovative products in the GDP is decreased. In 2004, it amounted 1.27%, the maximum was reached in 2005 (1.58%). Then there has been a decline in the production of innovative products, and by 2009, this ratio was 0.51% of GDP, having decreased more than three times compared to 2005 [5].

Kazakhstan needs to determine the range of macro technology on which it can become internationally competitive high-tech products to enter the international community on the terms an equal partner.

Business innovation activity - is the basis of innovative economic development. Innovative entrepreneurship is a multifaceted economic activity. Legal and physical persons are entrepreneurs exercising different kinds of initiative activities related with reproductive cycle of innovative products: creating innovative product; the broker function (provision of services related to the promotion of innovative products and passing it on to the consumer direct creator); exercise of the functions in the financial sector for innovation. For Innovative
Entrepreneurship can be defined as private investors, business angels, innovative enterprises, financing the promising scientific developments applications, as well as venture capital funds.

One of the main innovation indicators activities of the enterprises are the "level of activity in the innovation." Innovation-active enterprise is an enterprise which is manifested innovation activity during inspection, including continuing and discontinued. In other words, a company that carries out any activities related to the creation of innovations in monitoring recognized innovation-active - without paying attention, did the work to the emergence of real innovation.

This indicator is formed once a year based on a survey of innovation activities of enterprises in the republic, by regions, by industry. This is determined by the ratio of the number of innovation active enterprises, has engaged in any form of innovative activity, to the total number of existing enterprises and multiplying by 100:

\[
L_{act} = \frac{N_{hi}}{N_{tre}} \times 100
\]  

(2)

Where: \( L_{act} \) - the level of activity in the field of innovation;

\( N_{hi} \) - the number of enterprises with innovation;

\( N_{tre} \) - the total number of existing enterprises.

In 2014 as compared to 2003, the share of innovation active enterprises increased from 2.1% to 8.1% [2].

For comparison, the share of innovation active enterprises in the United States is about 50%, among the European Union countries have the highest rates of Germany (79.3%), Sweden (60%), Finland (58%). The average for the countries of the European Union is approximately 53% [6], [7].

Economic aspects of the problem of innovative activity development are constantly in the focus of many researchers and practitioners. The many facets of the innovation process has given rise to different approaches as to the definition of innovation and the theoretical foundations of innovative entrepreneurship.

However, some problems of development and enhance innovation insufficiently investigated, especially the problems of formation of effective organizational and economic mechanism in the new phase of transformational change. Thus, the theoretical and methodological bases of innovative activity require further development and generalization.

REFERENCES


Figure 5. The level of activity in the field of innovation, %