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Kazakhstan Way of Innovation Clusterization

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Abstract

During implementation of the Strategy "Kazakhstan-2030" dynamic economic development allowed the Republic of Kazakhstan increasing the average per capita income more than twice. All the goals of the Strategy "Kazakhstan-2030" have been achieved ahead of schedule. The aim of the new Strategy "Kazakhstan-2050" is entering the country among the 30 most developed countries in the world by 2050. Its achievement will require maintaining high rates of economic growth for a long time. Such basic factors of competitiveness as natural resource endowments, favorable macroeconomic environment and political stability have helped the Republic of Kazakhstan to succeed in socio-economic development and attracting foreign investments today.

Keywords: innovation, cluster, Kazakhstan, management

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1. Introduction

To maintain high rates of economic growth, the Republic of Kazakhstan needs to implement structural changes in the economy necessary for the transition to a new stage of development. These changes include the active creation of new productive jobs in the manufacturing industry, including through cross-flow of labor from the agricultural sector.

Lack of effective public policy in the field of natural resources and revenues from commodities, the high cost of raw materials in the domestic market of Kazakhstan may lead to the possibility of the sector operators to gain excessive profits, upon this limiting the ability of manufacturing sector to develop effectively.

Currently manufacturing industry occupies almost the third part in the structure of the economy of the Republic of Kazakhstan, the high share of the mining sector provides more than 2.5% of employment and 18% of GVA in the economy. Investments in the fixed assets in the mining industry today represent more than 30% of the total volume, and in the manufacturing industry only 12%.

Kazakhstan being the leading exporter of extractive sectors (especially due to the export of crude oil), in terms of per capita exports is ahead of all the CIS countries. However, manufacturing sector exports is relatively low in the Republic of Kazakhstan - approximately twice lower than in Russia.

Level of manufacturing industry development was quite low. State program on industrial-innovative development for 2010-2014 (hereinafter - SPIAD) allowed creating background for the further development of the industrial sector: a system of institutions for development has been established, a number of the necessary legal acts has been adopted, separate tools developed.

As a result of SPIAD implementation a trend has shifted towards improving the manufacturing industry, although it is still relatively low. Manufacturing sector generates less than 7% of employment and 12% of GVA in the country's economy. Employment in manufacturing sector of the Republic of Kazakhstan is lower than in all member countries of the Organization for Economic Cooperation and Development (hereinafter - OECD), and the level of performance is 2 times lower.

The Republic of Kazakhstan has been one of the first countries that expressed the need for industrial-innovative development of the economy, with account of the new technologies' importance. Development and launch of SPIAD was a respond of the country to the challenges generated by the economic crisis. This program has laid the foundation for further industrial growth and is one of the examples of public systems approaches to develop its own industrial base. SPIAD aim is to ensure sustainable and balanced economic growth through diversification and increase of its competitiveness. SPIAD has become one of crisis management tools to support the industry during the global financial crisis.

2. Literature review

Over the last decades, technological advances have been the most important determinant of growth rate for many countries (Mitchell [1]). Additionally, a number of cross country studies identified innovation as a key factor of productivity growth (Grossman and Helpman [2]; Coe and Helpman [3]). Moreover, increase in productivity promotes international competitiveness of economy (Gustavson [4]). Recent studies have been focused on explaining growth rates of countries through endogenous technological change. Modern theories of economic growth aimed to explain the growth patterns of world economies; technological innovation is created in the research and development (R&D) sectors using human capital and the existing knowledge stock. According to these

studies R&D, human capital and current stock of knowledge are the foundations of technological innovation (Frantzen [5]).

According to Porter [6], “To compete effectively in international markets, a nation’s businesses must continuously innovate and upgrade their competitive advantages. Innovation and upgrading come from sustained investment in physical as well as intangible assets”. Sophistication of financial markets is vital for innovative growth (Schumpeter [7]). As suggested by existing literature, decline in economic growth is observed when government imposes restrictions on banking system (introducing interest rate ceiling, increasing reserve requirements) (Shaw [8]). The purpose of the paper based on the foregoing discussion is to posit following hypothesis.

3. Main part

Following the results of 2012 year in comparison with 2008, Kazakhstan has seen positive growth dynamics of the main indicators of the SPAIID: gross domestic product has grown by 22.5%, the gross value added of non-resource industry - by 23.4%, output in the manufacturing industry - by 20, 5%, labor productivity in the manufacturing industry - by 70%, the volume of non-resource exports - by 6.4%, the level of innovation activity of enterprises - by 3.6%, the volume of innovative products and services - by 240%.

The main positive results of the SPAIID:

1) it laid the foundations of modern industrial policy in the Republic of Kazakhstan. There have been adopted the basic legal acts, tested different tools to support industrial development and new policy directions. In particular, the mechanisms have been launched to attract FDI and export support, the process of transformation of the special economic zones have been started;

2) diversifying of the economy has been started by accelerating development of the manufacturing industry, increase of non-oil exports and attracting FDI in non-source sectors. Production of more than 150 new products has been set up. These are high-tech products of engineering, pharmaceuticals, chemical industry;

3) major new industrial projects implemented within the Industrialization Map have got the support, which allowed avoiding production cuts. To date there have been introduced more than 500 new products. Specified objects produced goods worth 2.5 trillion. tenge, their share in industry was 6.3%, in manufacturing - 9.5%;

4) number of people employed in industry (for 4 years) has increased by 9.3% and exceeded 1 million people (1004.4 thous.).

More than 60,000 new jobs in manufacturing have been created within the Industrialization Map, which allowed avoiding an increase in the unemployment rate;

5) following the results of 2012 compared with 2008, labor productivity in manufacturing industry increased 1.7 times (the schedule was 1.5 times by 2015), from 37 thousand of U.S. dollars to 61.8 thousand of U.S. dollars;

6) since 2010 there have been attracted more than U.S. \$ 90 billion in foreign direct investment, accounting for over 50% of the total gross FDI inflows since 2005;

7) a system of industry institutions for development has been created, allowing to implement effective measures to support;

8) broad industry focus has revealed a potentially competitive sectors. However, during the implementation of SPIIAD a number of systemic lessons has been identified, which should be considered while forming the policy of industrial development of the Republic of Kazakhstan for 2015-2019 (hereinafter - the Policy), including the following:

1) unnecessarily wide range of industries for public support has not allowed effective focusing of limited resources available to support the industries with the greatest potential for development;

2) insufficiently focused budget funding distribution between activities that directly affect the achievement of the stated objectives of the SPIAD (direct), and activities not related to the immediate implementation of the industrial policy (indirect). Less than half of the budget resources allocated to the SPIAD, has been spent on the implementation of the direct and more than 60% - on indirect activities;

3) defects in implementation and monitoring of the SPAIID. There have been adopted 25 different programs to support 14 industries within SPIAD. Several activities of sectoral programs have not been aimed towards the achievement of goals and objectives of the SPAIID;

4) inadequate operational cooperation between state, local agencies and institutions for development, which has led to increase in terms of decision-making and reduce the effectiveness of state support;

5) SPIAD have not been fully financed for several reasons related to insufficient functioning of the financial system. One of the problems is the state of the STB system, limiting access of enterprises to debt financing. Capital markets of Kazakhstan are characterized by low liquidity and do not allow sufficiently cover the needs for investment capital.

Policy will be a logical continuation of the SPIAD and should take into account the experience of its implementation.

Emphasis will be focused on sectors of the economy, which will help reducing the economy's dependence on the mining sector.

The ratio of budget financing of direct and indirect activities aimed at implementing the Policy will be reviewed in the light of the previous experience.

4. Conclusion

To improve coordination and cooperation in the implementation of industrial policy between state, local agencies, institutions for development and other actors of industrial policy, a formation will be continued in the prescribed manner of a competence center for industrial policy at the National Institute of Development in the industry.

2. Global trends in industrial development.

In developing policy documents on industrial development the impact of global trends must be taken into account and assessed.

1. Increasing importance of resources.

Shrinking resources and fluctuations of their price form two divergent trends. The first one is increasing the cost of resources in the medium term and "resource nationalism", characterized by reduced availability, the second trend - the development of resource-saving and resource-efficient technologies.

2. Globalization and transformation of production chains.

TNCs being major participants of world trade, are constantly seeking more efficient production sites and partners, including local ones. Value added chains are in constant transformation. Geography and level of their globalization is changing.

3. Strengthening the role of markets in developing countries.

Formation of a middle class in developing countries leads to a shift in demand towards emerging markets.

4. International restrictions and narrowing of opportunities for government intervention.

In recent decades a number of countries participating in international organizations voluntarily assumed obligations to limit government intervention in the economy to benefit from participation in international organizations, from the reduction of tariffs and barriers is growing. Participation in regional economic unions may impose additional restrictions on the industrial policy of the country. However, in some cases, countries deliberately violate commitments in order to support domestic industries.

5. Competition of countries for the location and development of production.

Importance of production sites in developing countries in recent decades has grown steadily and competition between them has increased. Production moves to countries with lower costs and developed resource base.

6. Increase in the proportion and importance of services.

With the increasing technological complexity of the product and transition to modular designs the services play an increasing role in modern manufacturing sectors. Economic activity is shifted from manufacturing to services sector, capacious in terms of human capital. Services such as research and development, engineering and design, develop successfully only if there is demand from the competitive manufacturing sector.

7. Entrepreneurship role growth.

Industrial development in the world is based on the entrepreneurial potential. In many sectors integrated companies give way to multi-level providers systems, the role of small and medium-sized businesses grows. Countries having developed small and medium businesses are most likely to develop successfully on their territory new segments of global industry chains.

8. Development of new production technologies (The Third Industrial Revolution). New technologies are changing the global organization of production and determine competitiveness of the companies. Business Process and supply chain Management using information and communication technologies, new materials and new ways of using robotics, smart modeling and additive technologies provides competitive advantages and opens up the opportunities for the development of high-tech industries in the developing countries. This leads to a reduction in production, increase in resource efficiency, rapid response to consumer demand and labor productivity growth, which affects the benefits of the developing countries in the cost of labor, helps to preserve jobs in manufacturing sector in the developed countries.

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