

Kazakhstan Innovation System

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ABSTRACT: Analysis of strengths, weaknesses, opportunities and threats in the field of industrial development. When forming the industrial policy until 2020 the strengths and weaknesses of the industrial potential of Kazakhstan should be considered, as well as the opportunities and threats for its development. The Republic of Kazakhstan occupies the 6th place in the world in terms of mineral resources, the 10th place in the world in terms of proven hydrocarbon reserves, is the largest exporter of uranium. Rich reserves of mineral provide the basis for active development in the country with mining industry. 99 of 117 elements from the periodic chart of chemical elements have been found in Kazakhstan, among them 70 have been explored, 60 elements are extracted. The northern part of Kazakhstan has a wind map, attractive for wind energy development. The southern part of Kazakhstan has a sufficient solar activity. The Republic of Kazakhstan has sufficient gold and foreign currency reserves, substantial amount of funds in the National Fund and stable political system for maintaining macroeconomic and political stability. There is formed, legislatively approved and act the system of institutions for development and government support measures. National holdings create a framework for an active state industrial policy.

1 INTRODUCTION

Investment activity of private companies in the manufacturing sectors remains low and is far below the level of investment in China, Russia and Brazil. Weak development of the financial market does not allow attracting sufficient volumes of financial resources [1].

Domestic companies and foreign investors note shortage of human resources with sufficient qualifications as a key barrier to the development of production in the country. WEF, World Bank, OECD and other international organizations research results confirm the importance of this problem.

The country is located outside the main international maritime trade routes. Due to the limited domestic market, access to foreign markets and increase exports are crucial for industrial development of the Republic of Kazakhstan. Export development depends on access to foreign port and road infrastructure [2].

Industrial enterprises of the Republic of Kazakhstan lose their competitors from other countries due to insufficient energy system caused by geographical specificity of energy producing organizations location, general wear and tear of the electrical energy industry infrastructure and inefficient system of relations between economic entities of the industry. The

level of depreciation of generating assets in the energy sector is more than 60%, and losses in distribution networks reach 13%, twice the level which is characteristic of the developed countries.

The share of small and medium-sized enterprises in the production of manufacturing industry is only 16%, which is twice less than in the developed countries. Medium business generates only 8% of industrial production. Dominance of state companies in the industry reduces the possibilities of SMEs in industrial production [3].

Industry of the Republic of Kazakhstan tails off other countries in the development of innovative and high-tech manufacturing. According to the report of the Eurasian Competitiveness Institute, innovation system of the Republic of Kazakhstan occupies 45th place (among 50 countries participating in the ranking) in terms of competitiveness among developed and developing countries.

By the level of energy efficiency economy of Kazakhstan is one of the last in the world, and in the manufacturing industry of the country dominate the industries with traditionally high energy and resource consumption: metallurgy and chemical industry. Given the global trend of increasing importance of resources and the share of commodities in the economy of Kazakhstan there are necessary measures aimed at increasing resource efficiency,

shift to the "green economy" and increase of economic returns from the resource sectors for the development of the processing industry.

3. Opportunities for industrial development:

- 1) improving the depth and complexity of extraction in the resource sectors;
 - 2) demand of resource sectors companies for equipment, spare parts and semi-finished materials, materials and specialized services;
 - 3) access to market of the CU and new market opportunities in China, Central Asia and Caspian states;
 - 4) increasing productivity and resource efficiency due to modern production and management technology in the industry;
- formation of domestic demand by increasing the efficiency of public procurement and increasing the local content in the procurement of subsoil users and quasi-public sector.

2. METHODOLOGY

Data for this study was collected using largely qualitative methods. Interviewers were conducted in 2011 both in Russia and Kazakhstan with two groups of informants:

- *governmental support organisations* in the area of innovation (to examine entrepreneurship programmes that support the development of innovation and technologies),
- *R&D organisations* (to get updated data from R&D managers what has changed since the introduction of the marketing reforms in Russia and Kazakhstan using 5Ps framework and thus obtain insights into contemporary enablers and barriers of technology management in emerging economies).

3 MAIN PART

Significant potential for growth in industrial production is in the production rates increase per each unit of extracted minerals, increasing the complexity of production of all minerals and components that are contained in the subsoil assets extracted. Currently production efficiency in the Republic of Kazakhstan does not exceed 70%, significant amounts of minerals and ores remains unused in the waste rock. Active development of the resource sectors creates a large market demand for specialized industrial machinery and equipment, maintenance, and professional services [4].

Potential combined market of the Customs Union, available for dutyfree exports of consumer and industrial goods is over \$ 2 trillion. dollars coming into the world's top ten markets - along with the markets of the United States, European Union, China, India, Brazil and Japan. In the next 5-10 years new market opportunities in the macro region opens up

for the development of the manufacturing industry. According to IMF estimates, there is expected strong economic growth in China, India, Iran, which will lead to the expansion of their markets and growth potential for sales of the Kazakhstan industry.

There are reserves of the use of public procurement as a tool of industrial development, promoting the growth of small and medium-sized industrial companies. There is necessary decrease of administrative barriers in procurement, increasing of efficiency and transparency of procurement to stimulate productivity and innovations development. Government procurement should stimulate the development of small and medium-sized businesses.

All this creates a significant advantage for existing companies' business expansion, creation of new companies and attracting foreign manufacturers.

4. Threats in the field of industrial development:

- 1) impact of the ongoing financial crisis on the economy and industrial development of the Republic of Kazakhstan;
- 2) environment in the world raw materials markets;
- 3) low level of competitiveness of some domestic enterprises compared with subjects of the Customs Union's markets;
- 4) risks of structural deceleration of the economy;
- 5) unfair competition on both external and internal markets.

The probability of a new wave of the global financial crisis remains high. Its manifestations may be a slowdown of the world economy and the deterioration in access to investment in developing economies.

There continues a high probability of price volatility and market demand for raw materials associated with the slowdown of the world economy or uneven regional economic development. Ongoing regionalization of the world economy may lead to an increase in trade barriers.

Within the CU Kazakh companies have faced increased competition from foreign manufacturers in the domestic market. Imports from Russia, Belarus, China, in some segments has led to the substitution of domestic goods.

The analysis of strengths, weaknesses, opportunities and threats reveals the following basic options for the development of the manufacturing industry of the Republic of Kazakhstan.

Development of the manufacturing industry relates to the opportunities to meet the demand in the mining industry of Kazakhstan for equipment, spare parts, components and materials, as well as demand of macro-markets consumer sectors. For this purpose it is necessary to solve the complex task of transforming the manufacturing industry in Kazakhstan into attractive investment project

4 RESULTS OF RESEARCH

A comprehensive system of institutions for development, including specialized commissions and councils for inter-agency coordination, as well as industrial development agencies to improve the efficiency of government support, is created in international practice, to implement the programs. Although the functions and budgetary resources of these agencies may differ, their most important task is to coordinate activities in support of industry and organization of reforms affecting the industry [5]. A specialized agency allows focusing efforts and resources on solving a limited range of issues, which is especially important for the Republic of Kazakhstan, where the vast majority of problems associated with industrial policy, are identified in the implementation phase.

5 CONCLUSION

Successful industrial development in Kazakhstan depends on many factors with varying degrees of uncertainty. It is appropriate to consider various scenarios that allow timely adjustments of the set priorities according to the changing trends. Industrial development of the Republic of Kazakhstan is largely dependent on two strategic conditions:

global resources market environment and the degree of integration within the macro-region.

Global resources market environment is formed depending on the state of the global economy, strongly influences the activity of the backbone enterprises of the mineral sector in Kazakhstan. As a consequence, it is reflected in the state budget revenues, domestic demand and welfare of the citizens [6].

Integration processes in the macro-region define distribution channels for domestic industrial products, as well as influence the development of cooperation with foreign investors in the field of technology transfer and innovation development. Degree of integration of the macro-region largely determines the opportunities and prospects for economic diversification.

Industrial development of the country can be represented by the following 4 scenarios:

"Favorable Environment" - this is the most positive scenario possible in the presence of a favorable environment of global resources market and subject to close integration of the macro-region countries. When this scenario public support should be aimed at both the extractive industries, and the non-oil sector of the economy. This will allow achieving significant growth in industrial production and increase export potential [7];

"Raw Materials Sector Growth" - this is the scenario with the best resources market conditions, but in terms of a weak macro-region integration. In this case, the steady growth of industrial production will be provided by the mineral sector. Relatively low growth can be expected in the manufacturing industries. Therefore, the government needs to focus on the development of sectors and clusters associated with the extraction and processing of natural resources;

"Growth Through Technology" will be implemented with the active integration of the macro-region countries, but under unfavorable resources market environment. However, production will grow at the expense of non-extractive industries, which implies a qualitative development of human capital. At this the rate of industrial growth is expected to be lower than in the previous two scenarios;

"Slowdown in Economy" - worst-case scenario, the potential in conditions of commodity market depression and in the absence of integration of the macro-region countries. As a consequence, economic isolation in the absence of access to new technologies can lead to a reduction in investment activity in the country. In such circumstances, in order to avoid the slowdown in industrial production, the state will play a key role through the use of anti-crisis measures, coupled with an effective policy for allocating of resources.

So the alternative scenarios mentioned above give us a general description of options for the future development. In long view it makes possible to shift the priorities according to their relevance. The most likely scenario is "Kindly Soil" and "Raw Materials Sector Growth". This Concept of industrial development for 2015-2019 (hereinafter - the Concept) is designed to meet the basic principles of the "Kindly Soil" scenario.

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