INCREASING THE COMPETITIVENESS OF THE MACHINE-BUILDING INDUSTRY OF THE REPUBLIC OF KAZAKHSTAN

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ABSTRACT

Mechanical engineering is an important sector of the economy of any industrialized country. Ensures the sustainability of the production of all types of equipment, machinery, devices, engineering, agriculture, energy and metallurgy, transport and other important sectors of the economy.

Sustainable development and reliable operation of the engineering industry often determine the energy and material costs of the economy, labor productivity, the level of environmental safety of industrial production and, ultimately, the economic security of the country.

During the years of independence, the number of engineering enterprises in Kazakhstan has decreased by more than 10 times, the number of industrial workers has decreased from 350 thousand to 75 thousand. However, Kazakhstan's economy has overcome the crisis, active state support for economic diversification, selective measures to support specific sectors of the economy have helped to stop the decline in Kazakhstan's engineering sector. Today, the engineering industry is one of the priorities of industrial and innovation policy of the Republic of Kazakhstan.

Keywords: engineering, industrial policy, technical potential, efficiency, industrial production, technical re-equipment.

INTRODUCTION

The problem of developing an effective industrial policy in the Republic of Kazakhstan has become more and more urgent recently and is actively discussed in scientific circles. This is largely due to the fact that the economic crisis has once again demonstrated the flaws of the model of "raw material" development of the economy, which still dominates in Kazakhstan. As you know, the vector and level of development of any industrial complex, and even more so capital-intensive, energy-intensive, resource-intensive as the machine-building complex, largely depends on the availability and competent implementation of industrial policy. Despite numerous theoretical and practical developments, today there is no unified industrial policy developed at the state level to support machine-building enterprises. The main reasons for the non-competitiveness of domestic machine-building products in comparison with foreign counterparts are its higher cost and low quality caused by the use of outdated production technologies at most enterprises of the republic, an excessively high share of imported components, materials, energy carriers, etc. In addition, most of the products of domestic plants are morally obsolete and are much inferior to foreign counterparts in terms of technical and operational indicators. It should be especially noted that there is a shortage of engineering and technical personnel and workers in the industry.

In the structure of the economy of different countries, the role and place of the engineering industry is not the same. So, for example, in Germany, the machine-building industry accounts for 8.1% of gross value added, in Japan - 7.2%, in Belarus - 7.1%, in Russia - 2.9%, in Kazakhstan - 0.6% ... Currently, out of 37 subsectors of mechanical engineering in Kazakhstan, 14 subsectors and metalworking are developed. At the same time, about 16 large enterprises of the industry produce products for the oil and gas sector, about 12 large enterprises produce products for the mining and metallurgical sector, 15 - large enterprises for transport and communications, 20 - agricultural machinery, 13 - the defense complex, many of which are based on assembly production of imported units, assemblies and components. A serious problem for the machine-building industry of Kazakhstan is the lack of production capacities for machine-tool building, capacities for the production of a component base, adequate to the lines of equipment assembled in the country. For example, only one national operator of the railway industry - JSC “NC“ Kazakhstan Temir Zholy ”requires spare parts for 2,800 items, of which only 500 are covered by local manufacturers [1]. Another key problem in the development of the industry is the lack of available funding. As a result, machine building enterprises often do not have the opportunity to invest in the expansion or modernization of production, which leads to technological lag and low labor productivity[2]. Therefore, improving the system of financing machine building, including through development institutions, can dramatically improve the state of the industry.

MATERIALS AND METHODS

For the purpose of the study, the following methods were used: dialectical for economic processes and phenomena, methods of grouping, classifications, synthesis and analysis (economic, statistical, didactic, comparative and descriptive).

RESULTS AND DISCUSSION

In connection with the country's transition to industrial and innovative development in the machine-building industry, there is an upward trend. Laws have been developed and adopted that provide for the development of special economic zones and the reduction of administrative barriers for business, laws on state support for industrial and innovative activities, energy conservation and energy efficiency. For example, in Kazakhstan, the production of vehicles (railway, automobile) has recently been developing, including at joint ventures with Belarusian and Russian companies supplying products to the common market. So, since 2003, Asia Auto JSC has been producing Russian VAZ cars in Ust-Kamenogorsk. Kokshetau JSC KAMAZ-Engineering is a joint Kazakh-Russian project for the production of automotive vehicles of the KAMAZ model range. The Kostanay-based Agromash Holding JSC jointly with Russian companies produces engines and various agricultural machinery. At the end of 2012, an electric locomotive plant LLP “Elektrovoz krastyru zauyty” (EKZ) was launched in the Industrial Park of Astana. Over the past two years, 12 enterprises for the assembly of Belarusian equipment have been organized in Kazakhstan. Today, machinery and equipment are being assembled in the republic from PO BelAZ, RUE MTZ, PA Gomselmash, OJSC Minsk Motor Plant, OJSC Minsk Automobile Plant, RUE Plant Mogilevliftmash, OJSC Bobruiskagromash and OJSC Belcard" [3].

The analysis of statistical data showed that the volume of industrial production in 2018 compared to 2014 increased by 528,906 million tenge, the share of the industry in the total volume of industrial production in 2018 was 4.9%, investments in fixed assets amounted to

51,872 million. tenge (compared with 2014 increased by 45.8%), profitability increased by 1.0% (Table 1).

Table 1 - Dynamics of economic indicators of the machine-building industry of the Republic of Kazakhstan for 2014 - 2018

Indicators	2014	2015	2016	2017	2018
Industrial production volume, million tenge	376 184	536 876	687 235	859201	905090
Index of the physical volume of industrial production, as a percentage of the previous year	133.6	119.0	116.5	116.6	99.8
Share of industry products in total industrial output,%	3.1	3.4	4.1	4.8	4.9
The number of industrial enterprises and industries - total. Including:	1 483	1 550	1 646	1626	1565
with the main activity	933	994	1 040	1048	1147
Number of personnel in the main activity, thousand people	78.2	83.4	83.1	45.8	88.3
as a percentage of the previous year	96.3	106.6	99.6	550.6	19.3
Average monthly salary of core business personnel, tenge	76 577	87 061	101 258	138502	124846
Profit (loss) before tax, KZT mln	24 138	58 269.4	53 124.3	209699	1832979
Profitability, percentage	4.9	10.0	6.6	9.4	4.5
Investment in fixed assets, million tenge	23 782	44 433	39 710	42445	51872
Note: data from the Agency of the Republic of Kazakhstan on Statistics (2019)					

In the mechanical engineering industry in 2018, the volume of production amounted to 905,090 million tenge, the volume index decreased compared to 2017 by 16.8% and amounted to 99.8%. In 2018, the number of industrial enterprises decreased by 61 compared to 2017 and amounted to 1,565 units. Investments in fixed assets of the industry for five years from 2014 to 2018 increased by 28,090 million tenge. The production of computers, electronic and optical products has almost doubled compared to 2014 and amounted to 37,006 million tenge in 2018 (Table 2).

Table 2 - Dynamics of economic indicators of the machine-building industry by type of activity for 2014-2018, million tenge

Activities	2014	2015	2016	2017	2018
Production volume of computers, electrical and optical products	16555	23428	26848	33169	37006
Manufacture of electrical equipment	49259	63607	70045	77889	84867
Manufacture of machinery and equipment not elsewhere classified	56898	77383	98132	97003	103391
Manufacture of motor vehicles, trailers and semi-trailers	15754	35389	78404	157137	187912
Manufacture of other vehicles	27429	78415	118489	156735	140198

Table 2 continuation

Repair and installation of machinery and equipment	210291	258654	295319	337268	351415
Note: data from the Agency of the Republic of Kazakhstan on Statistics (2019)					

Electrical equipment in 2018 was produced in the amount of 84,867 million tenge, which is 1.7 times more than in 2014. Machines and equipment not included in other categories were produced in the amount of 103,391 million tenge, which is also almost twice as much as in 2017. The production of vehicles, semi-trailers for the same period increased by 11.9 times and amounted to 187,912 million tenge in 2018, the production of other vehicles increased by 1.7 times. Repairs and installation of machinery and equipment were carried out in 2018 in the amount of 351,415 million tenge, which is more than 1.6 times.

The production of such types of non-food products as: air conditioners - by 5.6 rubles, energy-saving lamps - by 4.1 rubles, electric kettles - by 27.7%, electric irons - by 24.8%, refrigerators and freezers - by 18.5%. The production of new types of washing machines, microwave ovens, gas stoves and vacuum cleaners has been mastered.

Compared to 2017, the production of agricultural equipment has increased: mowers - by 3.6 rubles, balers - by 2.5 rubles, sprayers and dusting machines - by 2.2 rubles, tractor plows - by 2.5 rubles, tractor seeders - by 66.6%, cultivators - by 8.6%. The machine-building enterprises of the republic have begun production of modern cotton pickers.

By the corresponding period of last year, there has been an increase in the production of the following types of electrical products: uninsulated wires for overhead power lines - by 2.7 rubles, winding and enamel wires - by 1.3 rubles, long-distance communication cables - by 9.7%, radio frequency wires and cables - by 7.7%., control cables - by 4.4%.

The share of Kazakhstani products in the domestic market of engineering products is about 13%, the remaining 87% of the country's needs are covered by foreign supplies.

The main trading partner of Kazakhstan is Russia - its share is 19% in the import of engineering products and 31% in exports. Apart from Russia, the main importers of engineering products are Germany (11%), China (11%), the USA (10%) and Japan (6%). After Russia, the main directions of export of engineering products from Kazakhstan are: Great Britain (15% of exports), Turkey (13%), Germany (7%) and Switzerland (6%).

In the structure of imports, more than 40% are cars, machine tools, products of oil and gas, mining and metallurgical engineering, household appliances and equipment for agriculture. The export structure is dominated by components, electrical and electrical equipment, as well as cars.

When developing a strategy for the development of the machine-building industry, it is necessary to take into account the regional characteristics of Kazakhstan, so regional placement should be carried out in the following areas:

-agricultural engineering - in the regions with the greatest agricultural activity - the northern and eastern regions;

- oil and gas machine building - in the western region for the purpose of technological support of intensively developing oil and gas production with a focus on the demand of oil and gas producing and processing enterprises in specialized equipment, consumables and components for them and existing production facilities - in Almaty, North Kazakhstan and East Kazakhstan regions;

- mining engineering - in the central and eastern regions, with a focus on the demand of large enterprises of the mining and metallurgical complex;

- electrical engineering - in the southern and central regions, with a focus on the existing production base;

-transport engineering - in the northern, central and eastern regions, with an orientation to the availability of qualified labor resources, the production of components and spare parts for related industries.

The competitiveness of Kazakhstani machine building is a key tool for the development of not only the machine building itself, but also for increasing business activity in the country as a whole. According to government programs to improve the competitiveness of mechanical engineering, priority is given to state financing of the leading sub-sectors of the complex, whose development dynamics are characterized by an increase in competitive potential. However, such narrow support for several sub-sectors will lead to the fact that enterprises in those sub-sectors that are left without support will come to an even more deplorable state than they are now. Therefore, the support of priority industries should be combined with a thorough structuring of the complex.

On June 26, 2019, the Republic of Kazakhstan approved the Roadmap for the development of mechanical engineering of the Republic of Kazakhstan for 2019-2024, developed by the Ministry of Industry and Infrastructure Development of the Republic of Kazakhstan together with the Union of Mechanical Engineers of Kazakhstan [4]. This document is aimed at defining the main tasks for achieving the competitiveness of domestic machine-building enterprises, introducing new technologies and increasing the export potential of the industry. The roadmap provides for a set of actions aimed at studying and developing support measures, including measures to provide domestic enterprises with raw materials, increasing the share of local content in procurement, improving technical regulation measures, and introducing economic incentive mechanisms. In addition, the results from the implementation of the roadmap will also affect the social aspect - there will be an increase in employment in the industry and wages will increase.

The support of the industry will be concentrated. The Roadmap provides for a clause initiating the creation of the Industry Development Fund of Kazakhstan under the Ministry of Industry and Infrastructure Development of the Republic of Kazakhstan. Similar successful analogs work in Russia, Belarus, OECD countries. These Funds provide loans at a rate of 1-4% per annum, for leasing projects the interest rate on a loan is 1%.

According to the experience of Russia, the fund directs its funds to finance machine-tool construction, conversion, production of components, digitalization of industry, and increase in labor productivity. The fund's effectiveness is due to the fact that the general policy of supporting the industry is concentrated in one organization, has a clear monitoring and analysis of the effectiveness of state support. Research has shown that the most import-dependent sectors of domestic engineering are: electrical equipment - $ 2.7 billion, automotive - $ 1.8 billion, oil and gas engineering - $ 1.3 billion, mining and metallurgical engineering - $ 1.04 billion. Domestic enterprises are ready to supply additional opportunities for import substitution of oil and gas engineering products worth 56.7 billion tenge from the total volume of imports. Kazakh enterprises are ready to launch production of new products for large operators in the amount of up to 100 billion tenge. It is proposed to finance the Industrial Development Fund of the Republic of Kazakhstan through the redistribution of unused funds from the republican budget based on the results of the quarter, six months and a year.

The formation of an effective system for increasing competitiveness in the machine-building industry of Kazakhstan, taking into account the requirements of the world market, should be based on the consistency and multidimensionality of the transformation process: the

technological aspect is the development of production resources; organizational - economic and socio - economic aspects - improving the forms of management and organization of an enterprise in a market economy, bringing them in line with the development of the technological aspect.

Depending on the competitiveness and science intensity of the products, four levels of development of the machine-building complex can be distinguished:

- production of the fourth technological order, which has potential, including export, for development and improvement at the level of their way. The industries of this mode include the traditional branches of mechanical engineering - power and electrical engineering, machine tools, instrument making, chemical and oil engineering. Here, state support can be limited to the regulation of financial, economic and institutional levers, depending on the selected scientific and technical priorities;

-production of the fourth technological order (import-substituting), already formed, where only individual improvements of a predominantly improving order are possible (improving the quality and appearance, packaging, ways of promoting to markets, etc.), depending on the market situation, which do not require large capital investments, and government intervention policies. These include tractor and agricultural, road-building machine building, machine building for light and food industries, trade and public catering;

-productions closest to the technologies of the fifth technological order (aerospace industry, high-tech electrical machine building, nuclear engineering, telecommunications and communications industry, including the electronic information sector, rocketry, optical instrument making and other industries that have groundwork for the development of high technologies) ... These industries (mainly export-oriented) most of all need various forms of state support (state scientific and technological policy, state targeted programs, state innovation centers, free economic zones, preferential tax and credit policies, etc.);

-production of the third outgoing technological order, producing the simplest products that will hold out on the market as long as there is demand for these products.

In the medium term, the main factors in the development of domestic mechanical engineering that create demand for its products should be: technical re-equipment and comprehensive modernization of the industry's own production apparatus based on domestic, and possibly mainly imported equipment in order to create conditions for the production of competitive engineering products, primarily , in knowledge-intensive industries; technical re-equipment of the existing production apparatus of other sectors of the economy of Kazakhstan, based on the consumption of progressive, both domestic and imported equipment.

CONCLUSION

In general, these areas should be developed in order to create a competitive technology school, infrastructure and business support system. This can be done through the creation of clusters (communities of decision-makers at the level of government, federal and financial bodies, company management, sales organizations), which, as it were, oversee the industry development project.

The solution to the problem of raising funds for modernization can be the diversification of production (as is done in the West), both civilian enterprises and military-industrial complex enterprises. Most of the enterprises of the machine-building complex are initially diversified and the unused capacities of enterprises can be used to expand the range of products.

Thus, the implementation of state strategic programs will make it possible to modernize the machine-building complex, saturate enterprises with circulating and investment funds, increase the competitiveness of manufactured products and, as a result, turn machine building into the technological core of the industrial sphere. The state is required to provide appropriate measures in the following areas: in the area of improving legal regulation; in the field of customs and tariff policy; in the field of budgetary policy; in the field of personnel policy; in the field of scientific and technical support for the development of mechanical engineering; in the field of insurance and export support.

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