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Assessment of Industries with Competitive Advantages of Kazakhstan and Eurasian Economic Union Member Countries

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Abstract

The modern history of the trade policy of the countries covers the most important processes of socio-economic development of the world in the era of globalization. Globalization contributes to the acceleration and modernization of economic growth. Today, almost all countries are covered by the process of world integration. However, it should be noted that countries face a huge number of problems of a different nature. The purpose of the article is to identify industries with the comparative advantages of Kazakhstan and all countries of the Eurasian Economic Union, and the integration association as a whole. For the evaluation, an index of the revealed comparative advantage proposed by B. Ballasa was used. Data of all EAEU member countries for 2017 on export revenues for 6 industries, whose products account for almost 94% of the total export volume of Kazakhstan were collected, and for analyzing the dynamics of export revenues, data on the export of Kazakhstan over the past 10 years were considered. As a result of the assessment, 3 industries with competitive advantages of Kazakhstan were identified. Also analyzing the dynamics of exports for 2008-2017, the sustainability of the advantages of these industries is noted. The conclusion contains recommendations on maintaining competitiveness and modernization of these industries, as well as measures for embedding the EAEU into the global value chain.

Keywords: Eurasian Economic Union, competitive advantage, index of the revealed comparative advantage, industry, export revenue.

Introduction

In recent years, the integration processes in the world are experiencing rapid development. Many countries began to unite in various trade blocs and associations. This process, in turn, contributed to the problems in the global economy. In crisis conditions, the removal of tariff and non-tariff barriers is seen as one of the ways to spur trade, and thus help out of the economic crisis.

In the past, the creation of integration associations was only aimed at increasing the turnover, and now they are trying to create full-fledged industrial trading complexes through integration (Analytical review of the integration processes in Kazakhstan, KIDI).

And pursuing these goals, Kazakhstan in 2007 signed the Treaty on the creation of a single customs territory and the formation of the Customs Union with Belarus and Russia. In 2015, this integration association grew into a Eurasian Economic Union, which includes Russia, Kazakhstan, Belarus, Kyrgyzstan and Armenia. Within the Union, program documents are developed for all EAEU member states, one of which is the Main Directions of Industrial Cooperation. The objectives of the implementation of industrial policy in the framework of the Eurasian Economic Union are to accelerate and increase the sustainability of industrial development, increase the competitiveness of the industrial complexes of the EAEU member countries, and implement effective industrial cooperation within the EAEU. One of the most important conditions for the development of industrial production in Kazakhstan is the integration into the production chains of global manufacturers of

finished products, the development of manufacturing small and medium businesses and the acquisition of modern technologies through the deep localization of production by foreign companies.

Literature Review

In a market economy, ensuring competitive advantages is the basis for the development of economic entities. This, in turn, is not only contribute to sustainable economic development of the territory, but also helps to strengthen its competitive immunity, that is, the ability to successfully compete with other countries, to withstand potential risks from external and internal shocks. In this regard, the definition and measurement of the competitive advantages of industries is reflected in the work of many researchers.

A relevant theory for the definition of modern concepts of increasing the competitiveness of economic sectors is D. Ricardo's theory of comparative advantage. D. Ricardo believed that the country does not necessarily have an absolute advantage on a competitive product. It is enough that it has a comparative advantage, i.e. so that costs for this product are lower than those of a competitor country (Titova, 1997).

The technological concept of Marshall (1984) competition justifies the advantages of large-scale production over small-scale production.

The American scientist M. Enright (1992) determined in his theory that competitive advantages are created at the regional level, where the main role is played by the historical prerequisites for the development of regions, the diversity of business cultures, the organization of production and education.

Russian scientists associate sustainable competitive advantages with possession of valuable or unique, unparalleled resources and competencies by a market entity (Belkin et al., 2012).

Researcher A.S. Barabanov says that competitive advantages are created on the basis of competitive factors, to which he attributes such indicators as “per capita GRP”, “labor productivity”, “per capita technological innovation costs” and many others, grouped according to from “target groups”: population, enterprises, small business, investors, tourists (Vokhmyanin, 2016). Sadykhanova, G., & Zhuparova, A. (2013) discuss the influence of human capital efficiency within innovative economy. Thus, it identifies competitive advantages with indicators characterizing the socio-economic development of the region.

M. Porter (2005) believes that competitive advantages are expressed in lower costs than competitors, or in the ability to change and control value added, which exceeds the additional costs of differentiation.

Russian scientist V.P. Obolenskiy (2008) according to Porter’s theory of competitive advantage – Porter’s diamond – analyzed the potential for competitive development of industries of the Russian Federation. In addition, he concluded that the reason for the successful entry of national industries and firms to foreign markets is the macroeconomic environment within the country, the maturity of which ensures the maintenance of competitive advantages in dynamics.

With regard to methods for assessing competitive advantages at the industry level, many scientists also use different methods of assessment.

For example, Sun K. et al. (2009) in their study uses the GIS-based analysis system to determine the competitive direction of the agricultural sector, paying particular attention to the classification of agricultural economic indicators for regional competitive industries.

A.A. Gnidchenko (2015) compared two assessment methods – the Balassa index and the method for evaluating trade variation; as a result of comparing the advantages and disadvantages of these methods, a new index is proposed – the estimated level of trade imbalance.

Method, Data and Analysis

Evaluation of competitive industries is carried out using the index of the revealed comparative advantage (RCA), which is calculated as the ratio of the share of exports of products of a certain type in the total export volume of the country to the share of the same type of products in the global export volume.

The index was proposed by B. Balassa in 1965 in order to identify ideas about the country's trade advantages in relation to industrial products, which, in his view, most closely matches the comparative advantages available in countries: its volumes are influenced by both price and non-price factors.

$$RCA_{ij} = \frac{\frac{x_{ij}}{X_{it}}}{\frac{x_{wj}}{X_{wt}}} \quad (1)$$

where RCA_{ij} – the index of the revealed comparative advantage, calculated on the export of products;

x_{ij} and x_{wj} – revenue from exports of goods j for country i and world exports of goods j;

X_{it} and X_{wt} – total exports of the selected country and world.

Index values can vary from 0 to 1, in the absence of specialization in a certain sector of the economy, and from 1 to infinity with a competitive advantage in it (Balassa, 1965).

For the analysis, the World Bank data on exports of the EAEU member countries for 2017 were used (Data of World Integrated Trade Solution of World Bank).

As the main industries were selected 6 industries: chemicals, machinery and transport equipment, metals, food products, fuels and minerals.

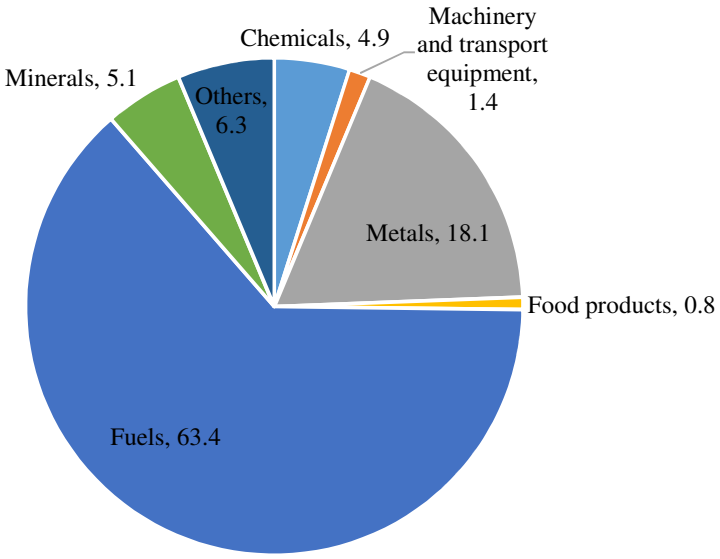

Figure 1: Distribution of the share of industries in total exports of Kazakhstan for 2017, %

Note: compiled by the authors based on data World Integrated Trade Solution of World Bank

These industries are not chosen randomly. The products of these 6 industries account for 93,7% of the total exports of Kazakhstan in 2017 (Figure 1). The similar indicator for other EAEU countries is lower: in Russia – 82,6%, in Armenia – 72,4%, in Belarus – 67,4%, in Kyrgyzstan – 33,6%. But the indicators of other countries participating in the EAEU are analyzed for comparison, and the main purpose of the article is to determine the competitive industries of Kazakhstan. For this reason, an assessment has been conducted for these industries.

Table 1: Index of revealed comparative advantage of the EAEU countries for 2017

Industry / Country	Chemicals	Machinery and transport equipment	Metals	Food products	Fuels	Minerals
Kazakhstan	0,36	0,03	2,34	0,20	6,56	3,43
Russia	0,38	0,12	1,34	0,35	6,10	0,77
Belarus	1,08	0,38	0,91	1,04	2,44	0,62
Kyrgyzstan	0,06	0,27	0,53	0,73	0,51	5,86
Armenia	0,11	0,05	1,62	6,19	0,35	18,90
Note – calculated by the authors based on data World Integrated Trade Solution of World Bank, 2017						

Table 1 shows that for Kazakhstan the priority sectors are: metals, fuels and minerals industries. Moreover, in the fuels industry, the comparative advantage index is even higher than in Russia, although the volume of fuel exports in Russia is significantly higher than in Kazakhstan. For comparison, fuel for the total amount of $ 211993 million was exported in Russia in 2017, while in Kazakhstan in the same period $ 30679 million was earned from the export of fuel (Figure 2).

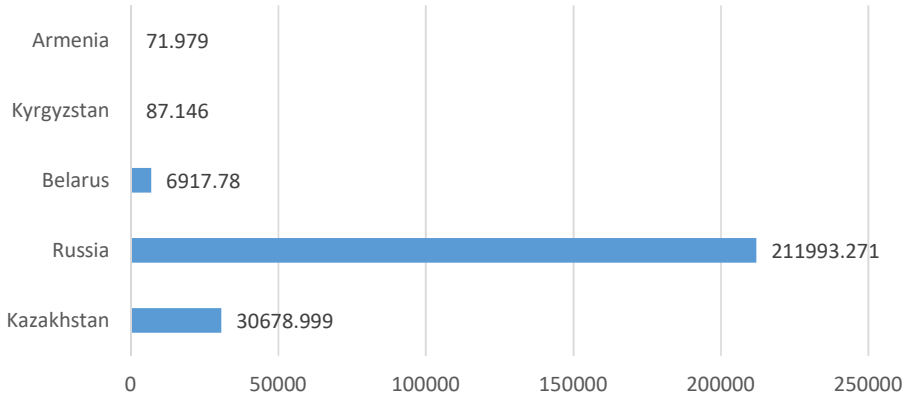

Figure 2: Revenue from fuel exports by country for 2017, million dollars

Note: compiled by the authors based on data World Integrated Trade Solution of World Bank

Here should note the advantage of this index – it does not estimate the volume of exported product, export revenue, but estimates efficiency and feasibility of exporting a certain product.

As shown in Table 1, each country of an integration association has a comparative advantage in certain industrial sectors. For example, Armenia specializes in food products and minerals, and the value of the indices of Armenia in these sectors is much higher than in other countries. The food industry has become the leading sector in Armenia in recent years: it produces about 37% of the gross industrial product in the whole country.

Kyrgyzstan has an export advantage in only one industry out of six – minerals. Kyrgyzstan is a mountainous country, famous for its rich subsoil, containing a huge amount of various minerals, among which there are quite unique species.

Belarus has a comparative advantage of exporting products to the fuels industry, even though Belarus produces more than 500 types of fuel products and over 70 percent of these products are sold on the foreign market, the comparative advantage index shows that fuel export efficiency of other EAEU member countries – Kazakhstan and Russia – still higher. Also, judging from Table 1 in Belarus, chemicals and food products industries have a comparative advantage, but the table shows data only for 2017, and indicators 1.04 and 1.08 cannot be considered sufficiently informative to clearly conclude about the comparative advantage of data industries.

In Kazakhstan and Russia, in addition to the fuels industry, the metals industry also has the advantage. Russia ranks fourth in the world in steel production and third in the export of products made from steel.

In recent years, the metals industry in Kazakhstan has become one of the leading industries, after fuel production. Today, Kazakhstan is among the world leaders in metallurgy. According to official data, this country is the eighth in the world ranking of iron ore reserves. The share of Kazakhstan in the world on this indicator is about six percent. The country's enterprises are engaged in the production of metals such as zinc, lead, copper and other, and also smelts rare metals. In addition to copper and other metals, Kazakhstan does not occupy the last position in the world market for the extraction and production of gold. At the present stage, more than 170 deposits of this precious metal have been officially confirmed in the republic (Metallurgical portal).

It should also be noted that no EAEU country has a comparative advantage in the machinery and transport equipment industry, although the global export revenue in this industry is more than 7 trillion dollars for 2017, which is almost 5 times more than the global revenue from fuels exports.

Using the index of the revealed comparative advantage, not only the preferential industries of the EAEU member countries were evaluated, but also the entire integration association as a whole (Table 2).

Table 2: Assessment of the index of the revealed comparative advantage of the EAEU

Industry	RCA
Chemicals	0,421
Machinery and transport equipment	0,131
Metals	1,424
Food products	0,409
Fuels	5,861
Minerals	1,159
Note – calculated by the authors based on data World Integrated Trade Solution of World Bank, 2017	

If we consider the integration association as a whole, then the indices are lower than for each country separately. For example, the index in the food products industry of Armenia is 6.19, which is quite a high indicator on a global scale, but as can be seen in table 2, the EAEU does not have a comparative advantage in this industry. This is due to the fact that this indicator does not significantly exceed 1 in any other country except Armenia.

Analyzing tables 1 and 2, it can be noted that the EAEU as a whole has a comparative advantage only in those industries in which 3 or more countries of the association have the advantages, namely, in industries - metals, fuels and minerals.

Comparative advantages are not a static indicator: some of them weaken over time and can be lost, others are acquired. Actual for each country is the analysis of the dynamics of changes in comparative advantages, which allows you to build a specific strategy for the development of foreign economic relations of the country. Below we consider the dynamics of export revenues in Kazakhstan over the past 10 years (2008-2017).

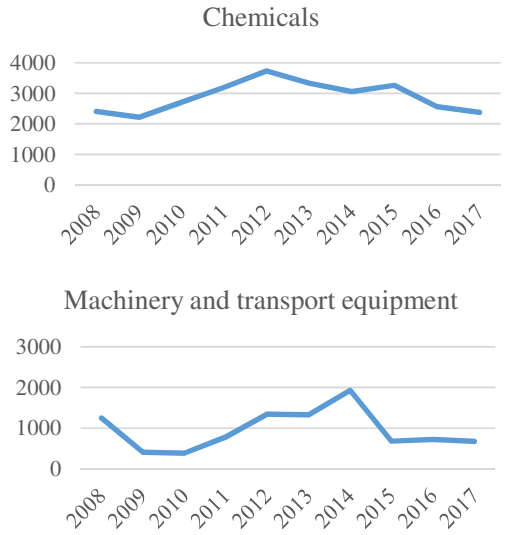

Figure 3: Dynamics of export revenues of Kazakhstan's industries with no comparative advantage for 2008-2017, mln dollars

Source: World Integrated Trade Solution of World Bank, 2008-2017

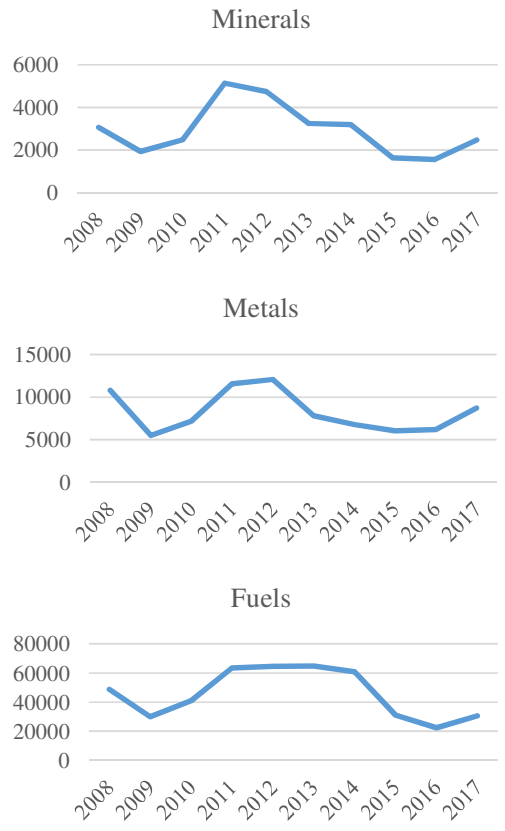

Figure 4: Dynamics of export revenues of Kazakhstan's industries with a comparative advantage for 2008-2017, mln dollars

Source: World Integrated Trade Solution of World Bank, 2008-2017

Figures 3 and 4 show the effect of global economic crises on the economy of Kazakhstan. For example, after the crisis of 2008, in all industries of Kazakhstan in 2009, a sharp decline in revenues from exports of products is noticeable. Then, the export volume gradually increases and reaches a

peak in 2011-2012, and in 2015, a sharp decline not only in exports, but also in the entire economy of Kazakhstan as a whole, is noticeable, which is associated with a rapid fall in the world oil price and devaluation of the national currency. It is worth noting that in 2016-2017 the situation is gradually leveling, and the export of industries with a comparative advantage is gradually approaching the level of 10 years ago.

However, all these fluctuations and shocks did not affect the indicators of the index of the revealed comparative advantage of the export of these industries (table 3).

Table 3: Index of revealed comparative advantage of Kazakhstan's industries for 2008-2017

Industry Year	Chemicals	Machinery and transport equipment	Metals	Food products	Fuels	Minerals
2008	0,383	0,050	1,849	0,098	4,575	4,015
2009	0,512	0,027	1,864	0,103	5,699	4,187
2010	0,498	0,019	1,749	0,110	5,106	3,185
2011	0,397	0,027	1,812	0,100	4,487	3,909
2012	0,450	0,043	1,912	0,127	4,432	3,792
2013	0,440	0,047	1,422	0,145	4,874	2,815
2014	0,421	0,070	1,277	0,160	5,349	3,164
2015	0,740	0,040	2,008	0,229	7,047	3,276
2016	0,718	0,052	2,694	0,266	7,329	3,827
2017	0,361	0,031	2,343	0,202	6,563	3,427
Note - calculated by the authors based on data World Integrated Trade Solution of World Bank, 2008-2017						

Based on the RCA assessment of Kazakhstan's industries for 2008–2017, which are reflected in Table 3, it can be concluded that 3 industries — fuels, minerals and metals — are always priorities for Kazakhstan's exports, as economic shocks are like a global economic crisis, fall of products prices and the devaluation of the national currency only slightly changed the value of the RCA index, and for all 10 years under consideration it changed in these industries by no more than 30% from the previous year.

Conclusion

Based on the assessment of the comparative advantages, we can conclude that Kazakhstan needs to support priority industries, namely, metals, fuels and minerals industries. For retaining the advantages, weaknesses of the industry such as aging of production assets, technological lag, threat of depletion of the raw material base should always be assessed; and take steps to modernize these industries. For example, to strengthen production facilities using innovative technologies, to export products not in the form of raw materials, but in the form of finished products, to finance R&D for the development of innovative technologies in these industries. Of course, all these measures require substantial funding. Solving this issue will be attracting significant budget and private resources, including through public-private partnerships, for the implementation of technological renewal, the introduction of resource-saving innovations in enterprises, support for cost-effective projects aimed at developing the infrastructure of production. It is advisable to use the mechanism of "financial leverage", that is, for every tenge invested by the state, to attract 3-4 tenge of private investment.

As for the competitive advantages of the Eurasian Economic Union, it should be noted that over the 3 years of its operation, the integration association cannot integrate into the global value chains. For successful integration and development in global value chains, it is necessary to create regional trade agreements, within which national producers have the opportunity to maximize their comparative advantage. In this case, the partner countries assume certain obligations, which are governed by the legal framework established for the fulfillment of these obligations, and the partner countries should work together to study the conditions for economic integration.

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