Analysis Of Comparative Advantage Of Kazakhstan’s Export Within The Eurasian Economic Union: Assessment Through Balassa Index

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1. Abstract

The main objective of this paper is to analyze the comparative advantages of Kazakhstan’s export within the Eurasian Economic Union in the period of past 4 years (since the establishment of EEU-5) and to understand whether the specialization of production capacities has suffered modifications. For the study of the comparative advantage of Kazakhstan’s exports compared to the Eurasian Economic Union in the period of 2015–2018, we analyzed the modifications in the structure of each section included in the “Integrated commodity groups” in the list of Commodity codes of Foreign Trade activities (list officially approved by EEU) using the Balassa index.

2. Introduction

The Eurasian Economic Union (EEU) is an international organization created for deepening of regional economic integration of states located in Central and Northern Asia and Eastern Europe. The treaty aiming for the establishment of the EEU was signed on 29 May 2014 by the leaders of Kazakhstan, Russia, Belarus and came into force on 1 January 2015. Treaties aiming for Armenia’s and Kyrgyzstan’s accession to the Eurasian Economic Union were signed on 9 October and 23 December 2014, respectively. Armenia's accession treaty came into force on 2 January 2015, while Kyrgyzstan's accession treaty came into effect on 6 August 2015. It participated in the EAEU from the day of its establishment as an acceding state.

The EEU provides with free movement of goods, services, capital and labor, pursues coordinated, harmonized and single policy in the macroeconomic sphere, industry and agriculture, transport, foreign trade and investment, customs and other sectors. Provisions for a single currency and greater integration are envisioned in future.

The evaluation of the dynamics of comparative advantages of Kazakhstan’s exports in comparison with the Eurasian Economic Union is an important part of the diagnosis for a national economy, it is also needed for understanding Kazakhstan’s current position within EEU.

Data source: Data from official site of Eurasian Economic Commission
3. Methodology

For this analysis was used the database in which the export trade flow in the period of time 2015-2018 is represented by the 8 sections in the “Integrated commodity groups” in the list of Commodity codes of Foreign Trade activities. The 8 sections mentioned above include:

- Provisions and agricultural raw materials
- Mineral products
- Chemical industry products (including rubber)
- Leather raw materials, furskin and articles thereof
- Wood, pulp and paper products
- Textile, textile products and shoes
- Metals and metal-made products
- Machinery, equipment, vehicles

This database was created after studying the statistics provided on official site of Eurasian Economic Commission.

To assess the degree of specialization of trade and the comparative advantages in exports was used the Balassa index. The Balassa index for specialization, is also known as the RCA (Revealed Comparative Advantage) index, is determined by reporting the share of a product in the total trade flow to the share of the same product in the total trade flow for a certain area. Consequently, the degree of export specialization is determined by the following formula:

\[ RCA_i = \frac{x_i / X}{\sum x_i / \sum X} \]

where:

\( x_i \) – exports of section i in Kazakhstan;
\( X \) – total exports in Kazakhstan;
\( \sum x_i \) – exports of section i in EEU;
\( \sum X \) – total exports in EEU.

4. Assessment of the comparative advantages of Kazakhstan over EEU-5

During of all the period of existence of EEU-5, the highest percentage in structure of Kazakhstan’s export was section “Mineral products”, which fluctuated between 68.7% - 78.7% over past 4 years. Since this section covers such a high percentage over the total export, it is evident that Kazakhstan’s economy is heavily dependent on production of mineral resources.

Figure 1. Percentage of the Kazakhstan’s export for the sections of the “Integrated commodity group” during 2015-2018
A different phenomenon occurred in the Eurasian Economic Union where, during the period subjected to the analysis, the percentage of Mineral products in the EEU-5 exports remained relatively constant (from 65.6% in 2015 to 67.2% in 2018).

Data source: Data calculated and compiled by authors on basis of statistics of the Eurasian Economic Commission

Figure 2. Percentage of the EEU-5 export for the sections of the “Integrated commodity group” during 2015-2018
Data source: Data calculated and compiled by authors on basis of statistics of the Eurasian Economic Commission

Over past 4 years, distribution in the export structure of both Kazakhstan and EEU-5 remains stable with domination of section “Mineral products”. Other sections with significant percentage in the total exports of Kazakhstan and EEU-5 are following:

- “Metals and metal-made products” – The percentage of exports slightly decreased in Kazakhstan (from 12.6% in 2015 to 11.8% in 2018) while EEU-5 kept stable level, remained at 9.6% in 2018 as it was in 2015;
- “Chemical industry products (including rubber)” – The percentage of exports decreased in Kazakhstan almost twice in past for years from 5.7% in 2015 to 3% in 2018, EEU-5 had a decrease as well from 7% in 2015 to 5.6% in 2018;
- “Provisions and agricultural raw materials” – The percentage of exports has positive dynamics both in Kazakhstan and EEU. Slight increase in Kazakhstan from 4.1% to 4.5% and EEU-5 from 4.4% to 5.1% in 2015 and 2018 respectively.

In order to assess the export specialization phenomenon for each section included in the “Integrated commodity group”, we calculated for Kazakhstan the Balassa specialization index reported to EEU-5. It is determined by reporting the percentage of product exports in the total national exports to the percentage of the product exports in the Eurasian Economic Union. The indicator has positive values, being higher than 1, when the economy has a great degree of specialization in manufacturing that product.

Figure 2. Evolution of the national Balassa indexes of specialization – reported to EEU-5 – for the export on the main sections included in the “Integrated commodity group” in 2015-2018
Data source: Data calculated and compiled by authors on basis of statistics of the Eurasian Economic Commission

For the sections with the highest percentages in the structure of the national exports, Kazakhstan has a high specialization level (constantly exceeding 1 during whole period) and consequently it has significant comparative advantages over the Eurasian Economic Union. The export of “Mineral products” during the whole period subjected to the analysis has slightly increasing comparative advantages in exports from 1.14 in 2015 to 1.17 in 2018. On the other hand, the export of “Metal and metal-made products” which is taking the second place in total share of national exports after “Mineral products” has negative dynamics, its fallen from 1.31 in 2015 to 1.23 in 2018. As it can be seen the section “Textile, textile products and shoes” has significantly increased comparative advantages over EEU-5 in manufacturing these products from 0.77 in 2015 to 1.08 in 2018, however these advantages don’t add great contribution to the Kazakhstan’s economy growths since they have low percentages in the total exports (constantly 0.2% during given period).

5. Conclusions

Although Kazakhstan has the values of the Balassa indexes remaining approximately constant during all the period of time subjected to the analysis, the stability isn’t desired results for the economy. Out of 8 sections included in the “Integrated commodity group” only 3 have values exceeding 1 and have comparative advantage over EEU-5, where two sections related to the natural resources and not man-made resources. The section “Textile, textile products and shoes” has significantly increased from disadvantage to comparative advantage over EEU-5, however as it was mentioned above these advantages don’t add great contribution to the Kazakhstan’s economy growths since they have low percentages in the total exports.
6. References


