Systematisation of effectiveness indicators for international economic integration

Abstract. To understand current trends in international economic integration, it is crucial to consider indicators of their effectiveness. This article examines prerequisites of international economic integration, and provides insight into quantitative and qualitative indicators of efficiency. Specific focus is made at integration processes within the Eurasian Economic Union. The stages of its transformation, the intensity of integration processes, and the achieved results of integration are considered. The article verifies the assumption that quantitative and qualitative indicators of the effectiveness of economic integration depending on the particular stage of integration. Reasons for not receiving the expected effects are substantiated. At the end of the work, a grouping of quantitative and qualitative indicators is proposed according to the type of effect and to the stage of integration.

Keywords: International Economic Integration; Quantitative and Qualitative Indicators of Efficiency; Integration Conditions; Systematisation of Indicators.

JEL Classification: F02; F15; F29
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1. Introduction

International economic integration is a major trend of the world economy. Decisions on integration are based on the expected economic, geopolitical and other benefits of each member. Synergy is seen as an ideal conclusion of the integration. Often, new economic and political alliances, like the Eurasian Economic Union (EAEU) are criticized for lack of socioeconomic products, such as increase in commodity turnover, rise of gross domestic product, etc. However, every type of integration and every stage define specific set of economic effect as well as specific set of indicators. The problem this research addresses is the lack of unified methodological base for evaluation of international economic integration effects at different stages of integration.

2. Brief Literature Review

Many renowned scholars touched upon this problem, to name few like Wiener (1975), and Balassa (1950). Their research headed in two theoretical directions: study of trade effects, and of integrated production factors impact on economic growth. Lately these issues were addressed by Aiyer (2016), Kharchenko (2016), Magashazi (2015). Complex approach to assessment of the effectiveness of economic integration is represented in the works of Samitas & Kenourgios (2005), Bonilla Bolano (2017), Marzinotto (2017), Podisinnikov & Lapidus (2012), Soskin & Matviychuk-Soskina (2014), Uskhalov (2015). Sala-matov (2016) claimed that interregional trade agreements represent next stage in the evolution of international relations. Aytuğ et al. (2017) introduced number of quantitative indicators of the effect of trade interaction between the EU and Turkey. Campos et al. (2017) presented the econometric model based on qualitative parameters to assess the EU integration effects. They saw impact of British political reforms on economic growth as crucial. Deichmann et al. (2017) grouped the EU member-states according to several indicators of dynamics of their change, measuring the strength of convergence. However, current academic works lack systematisation of the performance indicators of international associations with respect to various criteria, for example, depending on the stage of integration.

Features of performance indicators within the framework of the EAEU were studied by Alimbekov et al. (2017), Apokin et al. (2016), Kondratyeva (2016), Khitakhunov et al. (2017),
Petrov & Kalinichenko (2016), Roberts & Moshes (2016), Taitorina et al. (2016). We find approach by Kondratyeva (2016) most interesting, as she combined retrospective analysis of the prerequisites for the formation of the EAEU with evaluation of qualitative parameters of economic interaction. Yet it remains common for the studies of the empirical data on the EAEU that the integration effects are considered only with respect to quantitative indicators. The above works do not pay much attention to quality performance indicators, based on the collection of primary data.

3. Goals
Considering the problem and the state of theoretical and methodological research, the main goal of the article was to systematise the indicators of international economic integration, including interrelated quantitative and qualitative performance indicators at various stages of the integration process. This goal precludes the following tasks:

- basing on the theoretical stipulations and practice of international economic integration, to substantiate statistically the feasibility of economic unification, and to compare level of integration within EAEU to the classical stages of economic integration;
- analysing indicators of the integration of the EAEU, to systematise quantitative and qualitative indicators of the effectiveness of economic integration.

4. Results
4.1. Substantiation of synergetic effects economic associations
To substantiate the feasibility of economic integration, global social and economic trends are to be considered. Synergetic effect from economic associations is observed in the following trends:

- increase in trade turnover between countries (North American Free Trade Agreement, NAFTA, produced in the time lapse from 1993 to 2000 an increase for more than 2 times in mutual trade between the USA and Canada, and more than 3 times between the USA and Mexico);
- growth of mutual direct investment, and external direct investment (Australia New Zealand Closer Economic Agreement, ANZCERTA, resulted in triple Australia’s direct investment in New Zealand in 1992-2010, portfolio investment - 1.7 times);
- smoothing of the differentiation in population income level (the Common Market of the South, MERCOSUR, saw decrease of the population living below the poverty line in the countries of the association from 40% to 26%) [23].

Presented effects are diverse, which confirms the need to systematise indicators into a single methodological basis. Cause-effect models between indicators at the level of international economic associations are often problematic to construct because of geopolitical and economic reasons, influence of various external factors. The use of popular regression, gravity models, the method of searching for «low-bearing fruits» (Hausmann-Klinger) do not allow to assess the influence of various external factors. The use of popular regression, gravity models, the method of searching for «low-bearing fruits» (Hausmann-Klinger) do not allow to assess the influence of various external factors.

In addition to the stages of the integration, special conditions or prerequisites for integration deserve special attention. The most common prerequisites of integration is the expansion of trade markets. The second most popular prerequisite is the possibility of cooperation with the neighbouring economies. In this case, the differences in the commodity structures of the countries’ exports become a necessary condition. The political will of the leaders is the third precondition for integration. It is also possible to single out such phenomenon as the demonstration effect. The prerequisites for the EAEU are somehow different: from the positive impact on national production of goods (works, services) to nostalgic sentiments for the Soviet past.

The data by the CIS Interstate Statistical Committee on the structure of exports and imports show the historically close economic ties between countries, as the creation of the same economic union allowed to preserve the share of exports and imports with the CIS countries. Low shares of exports to the CIS countries in Russia and Kazakhstan comparing to other Commonwealth countries are due to the prevalence of products by extractive industries in their foreign trade. Another specific feature of the EAEU is Russia’s leading role as the main exporter for the rest of countries, and their main foreign market.

According to statistics released on the official website of the Eurasian Economic Commission, the role of Russia as a central force for the EAEU economy remains the same. The volume of mutual trade inside association in January-March 2017 amounted for Russia - USD 7,381.41 mn, Republic of Belarus - USD 2,936.2 mn, Republic of Kazakhstan - USD 1,181.9 mn, Republic of Kyrgyzstan - USD 164.2 mn, and Republic of Armenia - USD 102.5 mn.

4.2. Analysis of the dynamics of individual indicators for the EAEU
We analysed key indicators of integration effects since the establishment of the Eurasian Economic Community.

Export. According to statistics released on the official website of the Eurasian Economic Commission, the positive dynamics in the total mutual export in 2010-2012 were replaced by recession in 2013-2016. Thus, in Russia, the maximum value of exports to the EAEU countries was observed in 2012 (USD 44,511.4 mn), while in 2016 exports amounted USD 26,554.1 mn. In Republic of Belarus the maximum value of exports to the EAEU countries was observed in 2013 (USD 17,708.4 mn), and in 2016 it was at USD 11,255.1 mn.

Freight turnover. According to the CIS Interstate Statistical Committee, the dynamics of freight turnover of transport enterprises (without pipeline) was positive since the abolition of customs barriers, especially in countries with a high proportion of foreign trade with Russia (Belarus and Kyrgyzstan). The growth rate of cargo transportation in Belarus in 2007 and 2010 amounted to 106% and 111%, respectively, but in 2008, 2013 and 2015 decrease of goods turnover was observed. But for the first two months in 2017 the growth was 110.8%, compared to the same period in 2016. In 2016, the growth rate of Armenia’s freight turnover reached 119.1% compared to the same period last year, Russia’s - 101.8%, Kazakhstan’s - 100.8%.

Classical stages of international economic associations were examined, using the provisions of the theory of Balassa (1975), on the example of the EAEU. At the end of the 20th century, former Soviet republics could not compete with established international economic unions. The need for survival in such economic conditions pushed them to form their own associations, such as the Commonwealth of Independent States (CIS) and the Eurasian Economic Community (EurAsEC). It was EurAsEC that turned out to be the most «viable», EurAsEC according to the classical stages of international economic associations passed following transformations (Fig. 1).

<table>
<thead>
<tr>
<th>Year of foundation</th>
<th>Year of entry into force</th>
<th>Document</th>
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<tbody>
<tr>
<td>2000</td>
<td>2001</td>
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<tr>
<td>Founding agreement of the Eurasian Economic Community</td>
<td>Agreement on establishment of single customs territory and the formation of customs union</td>
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<tr>
<td>Declaration on the establishment of the Eurasian Economic Integration</td>
<td>Common Economic Space: Republic of Belarus, Republic of Kazakhstan, Russian Federation</td>
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<tr>
<td>Customs Union: Republic of Belarus, Republic of Kazakhstan, Russian Federation</td>
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<td>EurAsEC: Republic of Belarus, Republic of Kazakhstan, Kyrgyz Republic and Russian Federation</td>
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Fig. 1: Stages of economic associations of the EAEU
Source: Elaborated by the author
Dynamics of investment in fixed assets. We also examined the dynamics of investments in fixed assets to reveal the growth of the investment attractiveness of the countries. The accession of Armenia and Kyrgyzstan to the EAEU also affected the dynamics of investments in fixed assets: the rate of growth in 2014 for Kyrgyzstan was 124.9%, and for Armenia - 100.2%. Kyrgyzstan showed growth of investment until 2016, while in Armenia we witnessed slight decline. This indicator had a stable growth trend for the Republic of Kazakhstan: its maximum value was for 2013 (106.9%), and in 2016 it was 105.1% compared to the previous period.

Changes in GDP. The rate of GDP growth for the period 2000-2016 for countries of the EAEU has similar dynamics. In 2015-2016 Russia and Republic of Belarus growth was displaced by a fall. The countries that joined the EAEU in 2015 (Armenia and Kyrgyzstan) were able to maintain GDP growth in 2015-2016: for Armenia, growth in 2016 was 100.2%, and for Kyrgyzstan - 103.8%. In Kazakhstan for the period 2007-2016 GDP was not falling, yet the maximum growth was observed on the eve of the Customs Union. Despite the general decline in investments in the fixed capital of the economies, stable trends in freight turnover were observed throughout existence of the Customs Union, even under negative influence of external economic factors. Expansion of trade markets had a positive impact on agriculture.

Wage level. According to the CIS Interstate Statistical Committee, despite the decline in the average monthly wage in Russia and Kazakhstan, its level remains higher than in other countries. The growth of the average monthly salary was observed only in Armenia. However, Armenia and Russia have the maximum income ratio among the 20% of the most and least well-off groups among the countries of the union. For example, among the EU countries this indicator is minimal in Germany - 5.1 times, the maximum in Romania - 8.3 times (2015); in the United States it constitutes 8.1 times, in Brazil - 17.4 times (2013). For the three years that have been considered, this ratio across all the countries of the EAEU is declining. It is too early to talk about the role of the integration union in changing employment picture, but it is possible to compare employment rates across countries: maximum values in Kazakhstan are 74.4%, and in Russia it is 68.8%. In general, in the CIS the employment rate in 2015 was 65.4%, for the EU28 - 65.6%. In terms of GDP per capita, Kazakhstan and Russia were also leaders.

Our analysis showed that it is expedient to consider the systematisation of the performance indicators of integration lies in the context of the following criteria:

- depending on the stage of the integration process, various effects from cooperation can be considered. For example, at the stage of formation of an economic union, it is necessary to consider the dynamics of macroeconomic indicators, rather than separate industry data and effects from separate projects.
- integration strategies are chosen according to the objectives of each country. The Eurasian Economic Commission outlines seven strategic schemes of international economic integration. Each scheme is characterized by its own prerequisites and, consequently, performance indicators. For example, at the initial stage it is preferable to develop system-forming industries, therefore, the effectiveness of integration should be considered in line with their development. The agricultural production of the EAEU countries in 2016 showed significant growth. However, according to the data of Eurasian Development Bank, the priorities for financing are following: inter-state infrastructure, development of industrial cooperation, growth of production of new competitive products, therefore it is rather difficult to single out a separate strategy for the analysis of efficiency.
- with regard to the rate of reaction of integration processes, social and economic indicators are distinguished by static and dynamic effects. The static and dynamic indicators of the EAEU were significantly influenced by external economic factors. Perhaps, the decline in macroeconomic development indicators for some countries could be more significant without an integration union. Therefore, it is necessary to separate special criteria for the economies of developing countries.
- influence of external economic and political factors of the development of the integration union. We found it necessary to apply economic and mathematical models of smoothing out the influence of external development factors, which can significantly affect the results of evaluating the effects of the integration union.

Based on the criteria for the effectiveness of integration processes described above, it is possible to propose a matrix method for selecting a group of performance indicators of an international association. We will use the stages of integration and the speed of reaction of integration processes on socio-economic indicators as our criteria. Table 1 shows example of grouping of integration effects.

### Table 1: Systematisation of integration effects

<table>
<thead>
<tr>
<th>Stages of integration</th>
<th>Static effects</th>
<th>Rate of reaction</th>
<th>Dynamic effects</th>
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<tbody>
<tr>
<td><strong>Free trading zone</strong></td>
<td>1. Growth of the positive attitude towards integration among population of the participating countries.</td>
<td>1. Growth of preferences for consumer goods of the participating countries.</td>
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<td></td>
<td>2. Growth of orientation of producers of products (works, services) on the domestic market.</td>
<td>2. Growth of freight and mutual services between the countries of the union.</td>
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<tr>
<td><strong>Customs union</strong></td>
<td>1. Growth of positive attitude towards the union among other countries.</td>
<td>1. Growth of exports from the union due to the growth of preferences for the goods of the union.</td>
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<tr>
<td></td>
<td>2. Reorientation of producers to domestic turnover.</td>
<td>2. Growth of mutual exports and imports.</td>
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<tr>
<td><strong>Common market</strong></td>
<td>1. Growth of mutual inflow of capital (investments, arrival of companies and entrepreneurs).</td>
<td>1. Growth in the share of innovative products of the Union.</td>
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</tr>
<tr>
<td><strong>Economic and monetary union</strong></td>
<td>1. Growth of external capital inflow.</td>
<td>2. Growth of remittances between countries, which will lead to equalization of income level of population of the countries.</td>
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<td></td>
<td>2. Growth of labour emigration (for temporary employment in one of the countries of the union).</td>
<td>3. Growth in the number of transactions in the intellectual property market.</td>
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<tr>
<td></td>
<td>3. Increase in number of mergers and acquisitions within the union.</td>
<td>4. The growth of passenger turnover between countries through domestic tourism.</td>
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<tr>
<td><strong>Political alliance</strong></td>
<td>1. Growth of positive attitude towards supranational institutions (single currency, laws, army, governing bodies).</td>
<td>1. GDP growth per capita.</td>
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<tr>
<td></td>
<td>2. Growth of political interest of other countries in the union.</td>
<td>2. Growth in number of members of the union.</td>
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Source: Compiled by the author
increase in preferences for the goods from the countries of the union. An increase in positive popular attitude towards the Union in 2015 caused the growth of investment flows and earnings assets for 2016. In turn, the reduction of the positive popular attitude towards integration in Kazakhstan, Russia, and Armenia led to decrease in consumer demand and decrease in export of domestic goods to the EAEU members. Growth in inflow of investments into fixed assets in Kyrgyzstan and Kazakhstan in 2015-2016 had a positive impact on GDP growth and agricultural production growth. Thus, before making conclusions about the dynamics of the effects of the integration, it is necessary to monitor the dynamics of static or «instantaneous» effects. The reduction of positive relations with the EAEU in the early stages of the country is blocking move to higher stage of integration.

In general, the indicator of integration effects in international statistics is the dynamics of trade turnover. As other members of the EAEU are mainly oriented to the Russian economy, we are making our initial conclusions about the effect of integration based on the data of Russia's trade turnover. The data on foreign trade by the Federal Custom Service of Russia show the following trend: despite the fall in Russia's foreign trade turnover with the EAEU countries in 2016, compared to the same period last year, its share in the structure of foreign trade increased from 7.8% to 8.4%. The growth rates of Russia's foreign trade with the EAEU countries were higher than average, with the EU and the OIS. Only growth in trade with APEC was higher due to imports. Russia's exports to the EAEU countries for the period under review decreased by more than 10%, but there was a significant increase in imports, primarily from the new EAEU member countries: Armenia and Kyrgyzstan, 213% and 237%, respectively. Import from Kazakhstan decreased by 28.6% due to changes in the commodity structure of imports and change in the positive attitude towards integration.

5. Conclusions
Integration of the EAEU contributed to the expansion of trade markets, and to the development of inter-country economic cooperation. Historical experience of interaction between industries in the EAEU member-states enabled the establishment of the efficient technological chains. However, geopolitical, historical and external economic factors of development are interfering with the formation of indicators of the effectiveness for the integration process in the EAEU, making cause-effect relationships over-complex. The system of indicators we are proposing will contribute to the solution of this issue.

We found it reasonable to consider effects of the creation of the EAEU in the context of integration stages and type of reaction rate for the indicator (static and dynamic effects). In addition to quantitative indicators of effectiveness, it is necessary to consider qualitative indicators of population and business surveys, which are the basis for observing static effects. Moreover, the conduct of economic statistics of the EAEU in the currency of other states makes it much more difficult to calculate the integration effects during the period of financial and economic crises. While analysing empirical data for the EAEU, we concluded that it is possible to move to next stage of integration only when static effects of the previous stages are obtained.

References