Impact assessment of the mutual trade depth on the economic growth rates of the EAEU states

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Abstract. The record growth of mutual trade within the EAEU last year highlights the issue of the balance of benefits and costs for the countries of the Union in the context of the spillovers risks of macroeconomic shocks from the leading economy of the integration association to other members of the integration association. The purpose of the study is to assess the impact of the depth of mutual trade on the economic growth rates of the member states of the integration association. Hypothesis of the study: there should be a direct (statistically) significant relationship between the indicators characterizing the depth of mutual trade of the EAEU countries, and the rate of economic growth of the member states of the integration association. At the first stage of the study we determined the depth of mutual trade of the EAEU countries; at the second stage we verified the relationship between the indicators characterizing the depth of mutual trade of the EAEU countries, and the GDP growth rates of the EAEU member states using correlation analysis. The results of the study show the direct impact of the rate of mutual trade of the EAEU countries on the dynamics of their economic growth.

Introduction

According to the analysts at the Eurasian Development Bank (EDB), the volume of mutual trade of goods in the Eurasian Economic Union (EAEU) reached its maximum value in 2022, and totalled \$80.6 billion (an increase of 10.3%), despite the intensification of unprecedented sanctions pressure on the Russian economy. This alltime high can be explained by the significantly increased exports of former Western partners to Russia's neighbouring countries against the background of a practical complete cessation of trade turnover with Russia. Moreover, the risks of secondary sanctions have not yet outweighed the possibility of benefiting from the established channels of parallel imports. Hence, Armenia, Belarus, Kazakhstan, and Kyrgyzstan increased their exports to the EAEU by \$9.8 billion (1.4 times), including \$9.5 billion to Russia. Therefore, Armenia's exports to the EAEU increased by \$1.6 billion (2.8 times), Belarus – by \$5.6 billion (1.3 times), Kazakhstan – by \$1.9 billion (1.2 times), Kyrgyzstan – by \$646 million (1.8 times)[1].

Meanwhile, the macroeconomic shocks associated with the Special Military Operation (SMO) affect both the Russian and other EAEU economies. In this regard, it is interesting to consider whether the benefits arising from the intensification of mutual trade outweigh the costs of macroeconomic shocks from the leading economy of the integration association.

Recent publications on this subject do not provide a conclusive explanation of this issue. However, Kot, Barsukova et al. (2023) in their research identified the strengths (institutional and legal structure of the EAEU single market, historical, cultural, and economic proximity of the EAEU member states, transit potential of the territory, high level of internal trade, and increase in the share of ruble transactions in trade turnover, etc.) and weaknesses (low efficiency of the institutional structure, gap in the socio-economic level of the member states development, unstable geopolitical situation in some of the member states, low level of the EAEU recognition on the global market, economic and political conflicts of the member states interests,

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[1] *https://ilex.by/kak-strany-eaes-postavili-rekord-v-torgovle-na-fone-sanktsij/#:~:text=%D0%92%D0%B7%D0%B0%D0%B8%D0%BC%D0%BD%D0%B0%D1%8F%20%D1%82%D0%BE%D1%80%D0%B3%D0%BE%D0%B2%D0%BB%D1%8F%20%D0%95%D0%90%D0%AD%D0%A1%20%D0%B2%202022,%E2%80%94%20%D0%BD%D0%B0%20209%2C5%20%D0%BC%D0%BB%D1%80%D0%B4%20%D0%B4%D0%BE%D0%BB%D0%BB%D0%B0%D1%80%D0%BE%D0%B2*

dependence on Western technologies in some key sectors, etc.) of the EAEU.

Andronova & Ryazantsev (2023) use correlation analysis to study the impact of educational and labour migration on the social-investment model of economic growth in the EAEU.

Cieślik & Gurshev (2023) assess the benefits of economic integration for the above-mentioned economies using a multiregional gravity model with interdependent trade flows as well as bilateral trade data for Tajikistan and Uzbekistan. The authors concluded the economies under study would benefit most from joining the EAEU (compared to integration with China or Iran).

Pizzolo (2023) proposes to examine the establishment and functioning of the EAEU through the prism of Carl Schmitt's concept of the "Great Space". According to the researcher, the EAEU resembles Schmitt's "Great Space" in four main aspects: the existence of a regional hegemon with spheres of interest outside its fixed borders; cultural and historical proximity of countries; overcoming the rigid Westphalian governmental model; and the occurrence of the Earth Nomos (as an ideological opponent of the Sea Nomos). The author believes the establishment of the EAEU is a confirmation of the ongoing global shift from rigid Westphalian Nation States to highly integrated political-economic blocs based on civilisational identity in a multipolar world.

Ivliev & Shakhnazarov (2023) emphasize parallel imports as a tool for the development of international trade and increasing the availability of goods in different countries. The researchers believe it, in some respects, an instrument of international competition giving rise to a number of legal issues on the solution of which depends the stability of trade relations, the availability of goods in the markets of different countries, and the observance of the intellectual property rights. The authors analyze the legal approaches to parallel imports and the issue of exhaustion of rights in the EAEU. The study revealed the absence of a normative definition of the "parallel import" concept at the international level. Moreover, there are no international legal grounds allowing the right holder to prevent the implementation of the international principle of the total rights exhaustion in a particular state. Indeed, the regional principle of the exclusive rights exhaustion within the EAEU can serve as an important mechanism for completing the markets of goods and services of the EAEU member states, replenishing the missing goods in their markets, increasing competition and optimizing prices for goods in the region.

Braun, Gromilova & Melnikovová (2023) consider the EAEU as an undemocratic regional organization. They possess the EAEU's activities aimed at eliminating non-tariff barriers are resisted by the EAEU member states which maintain that cooperation between the countries should be exclusively economic.

Makhmutova (2019) assumes the EAEU member states' political behaviour is based on political pragmatism, hence, while providing official support for Eurasian integration the countries of the Union are also interested in acceding to alternative projects strengthening their sovereignty. Therefore, the main challenge to the Union originates primarily from the political sphere, since the number of Eurasian integration alternatives is gradually increasing, disrupting relations between the EU members and Russia. In this regard, the correlation between Western sanctions and the EAEU's economic growth rate is very important. Moreover, the main purpose of sanctions is to limit Russia's ability to pursue an independent and active policy, including the development of foreign economic projects. Consequently, anti-Russian sanctions should have affected the EAEU and its key members. In 2016, Russia demonstrated a decrease in gross domestic product (GDP) which had an even greater negative impact on Belarus and Kazakhstan. Nevertheless, they have not only managed to regain lost ground on economic performance but also achieve some growth in GDP. Such dynamics confirms the author's hypothesis on the EAEU members have room for manoeuvre if an external player influences their political and economic development.

Abdykappar, Yuriy & Mukhit (2020) performed a study based on the developed dynamic multi-sector and multi-country computable general equilibrium model. The model describes the functioning of the economies of nine regions. It includes five countries of the Eurasian Economic Union (EAEU). The results demonstrate greater efficiency for each EAEU country using a coordinated economic policy to counter sanctions, compared with the implementation of such policy separately at the level of each country.

Spartak (2021) highlights the strong concentration of EAEU countries mutual trade on Russia, which

strongly depends on the state of the Russian domestic market and the terms of Russian energy supplies to its EAEU partners. Smaller EAEU countries-Belarus, Kyrgyzstan, and Armenia – are most focused on mutual trade, while for Russia the role of trading partners in the EAEU is much lower. For the Union as a whole, the share of intra-regional trade in total foreign trade turnover is still very low – 12-14 % in the last decade-but for the participating countries, the quality of this trade is very important as, in contrast to supplies to third countries, a significantly larger share belongs to manufacturing products and the nomenclature of trade is much wider. There is a slight but steady increase in the role of mutual trade in meeting the internal demand of the EAEU in agricultural and industrial products. The low level of competitive regional supplies of technological goods and services, the weak development of intra-industry trade, large trade imbalances in favor of Russia, violations of the Customs Union rules by the parties, and the deviation of trade flows in favor of major non-regional players, primarily China and the EU, are all factors which have a restraining effect on mutual trade. Calculations based on the CGE-model predict the possibility of a significant increase in mutual trade in the case of the complete elimination of non-tariff barriers, as well as the stimulating effect on intra-regional trade in the case of Uzbekistan's accession to the EAEU. The real prospects for a substantial expansion of trade within the EAEU are small, due to the existing restrictions and contradictions between partners, as well as due to the already existing phenomenon of overtrading in the EAEU region.

A special attention is drawn to the report "Assessment of the EAEU integration processes in trade" which has been published since 2020 as part of the Annual Yasin (April) International Scientific Conference on Problems of Development of Economy and Society of the Higher School of Economics. Currently, this is probably the most thorough study of the EAEU in the post-Soviet area: the report offers not only an original methodology for calculating integration indices in the goods and services trade, but also provides detailed analysis of various aspects of mutual investments, problems of small and medium-sized enterprises development, etc. Hence, the purpose of this study is to assess the impact of the depth of mutual trade on the economic growth rate of the integration association member states.

Methods

Hypothesis of the study: there should be a direct (statistically) significant relationship between the indicators characterizing the depth of mutual trade of the EAEU countries and the rate of economic growth of the integration association member states.

Explanation: intensification and complication of mutual trade in the EAEU area lead to an increase in trade turnover between countries, create new jobs and ultimately increase the GDP.

Research algorithm: at the first stage of the study we will determine the depth of mutual trade of the EAEU countries. At the second one, we will verify the relationship between the indicators characterizing the depth of mutual trade of the EAEU countries, and the GDP growth rates of the EAEU member countries using correlation analysis.

Research Methodology:

1. The research period is 7 years (long-term).

2. Indicators used: Trade Intensity index, GDP of EAEU countries (see Table 1), Import Penetration Index, volumes of mutual trade (see Table 2).

3. Sample: EAEU countries, 2015-2021.

4. Research Methods:

- the first stage: to assess the depth of mutual trade of the EAEU countries, we will use a number of indices proposed in the report "Assessment of EAEU integration processes in the sphere of trade" (2022). To calculate the Indices of Import Penetration (it shows the role of member states in satisfying each other's domestic demand) and Trade Intensity (it shows the level of mutual trade intensity compared to the level of participation in world trade, advantages on the markets of the states of the block compared to the position on the world market as a whole), data from the Eurasian Economic Commission were used[2].

- the second stage: we use correlation analysis to verify the hypothesis. In this study we set a significance

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[2] *Foreign and mutual trade statistics of the EAEU. https://eec.eaeunion.org/comission/department/dep_stat/tradestat/*

level (p-value) of 5% to test the significance of the correlation coefficient.

Table 1 – Mutual trade of EAEU countries, 2015-2021, in $ USD, bn

Period	Armenia	Belarus	Kazakhstan	Kyrgyzstan	Russia
2015	0,256	11, 007	5, 120	0,410	28, 821
2016	0,393	11, 384	3, 930	0,447	26, 804
2017	0,570	13, 651	5, 262	0,541	34, 685
2018	0,688	13, 932	6, 046	0,640	38, 953
2019	0,767	14, 569	6, 406	0,641	39, 247
2020	0,709	14, 009	5, 671	0,554	34, 108
2021	0,888	17, 463	7, 648	0,803	45, 806

Source: composed by the author from: https://eec.eaeunion.org/comission/department/dep_stat/tradestat/

Table 2 – Annual GDP of the EEU countries at the exchange rate in current prices, 2015-21, in $ USD, bn

Period	Armenia	Belarus	Kazakhstan	Kyrgyzstan	Russia
2015	10,60	56,30	184,40	6,70	1356,70
2016	10,50	47,70	137,30	6,80	1280,60
2017	11,50	54,70	166,80	7,70	1575,10
2018	12,50	60,00	179,30	8,30	1653,00
2019	13,60	64,40	181,70	8,90	1695,70
2020	12,60	61,30	171,10	7,80	1488,10
2021	13,90	68,20	197,10	8,70	1836,60
2022	19,50	73,10	225,80	11,10	2215,30

Source: composed by the author from: https://eec.eaeunion.org/comission/department/dep_stat/tradestat/

Results

Hence, at the first stage of the study we will assess the depth of mutual trade of the EAEU countries using two indices.

Figure 1 shows the results of the Import Penetration index calculation for the EAEU countries.

The high value of the Import Penetration index for the Republic of Belarus and the Republic of Kyrgyzstan indicates a significant part of local demand is satisfied by external supplies. This can be explained in terms of re-export a large amount of goods to neighbouring countries due to their geographical location. The consistent growth of the Import Penetration index for the economies of Armenia and Kazakhstan can also be explained by the increase in re-exports of products to Russia as a result of the introduction of new sanctions against Russia. However, the low value of the Import Penetration index in the case of Russia indicates the presence of its technological advantages and a high degree of self-sufficiency.

Figure 2 shows the results of the Trade Intensity index calculation for the EAEU countries.

The high value of the Trade Intensity index for the Republic of Belarus, the Kyrgyz Republic, and Armenia indicates their trade flows orientation towards the internal market of the EAEU countries, while the trade flows of Russia and Kazakhstan are more oriented towards third countries, primarily China.

We will assess the impact of the depth of mutual trade of the EAEU countries on the dynamics of their economic growth at the second stage of the study.

Figures 3 and 4, Table 3 show visual interpretation of the data, and the results of the correlation analysis.
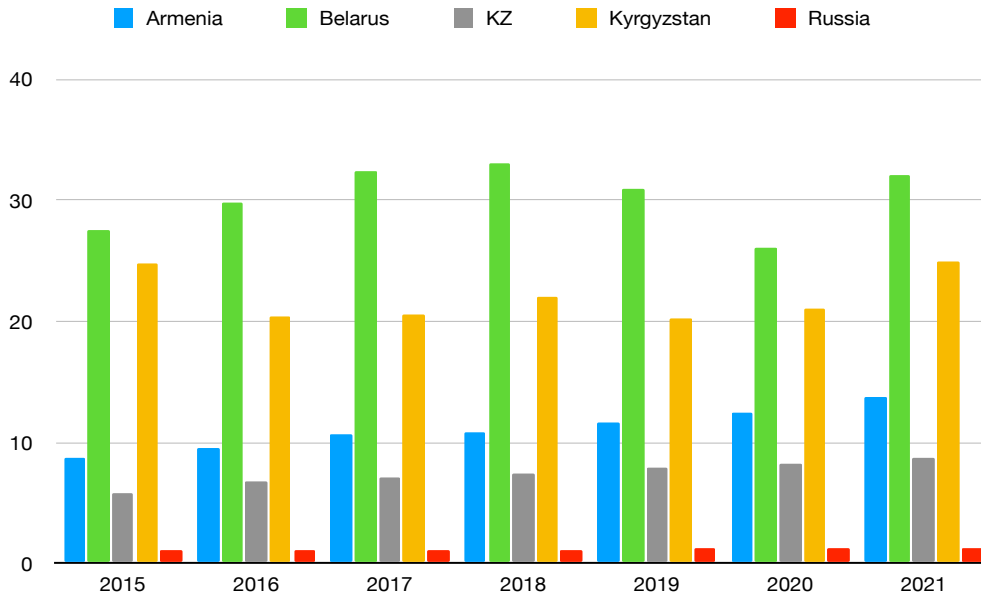
Figure 1. Import Penetration index for EAEU countries, 2015-21
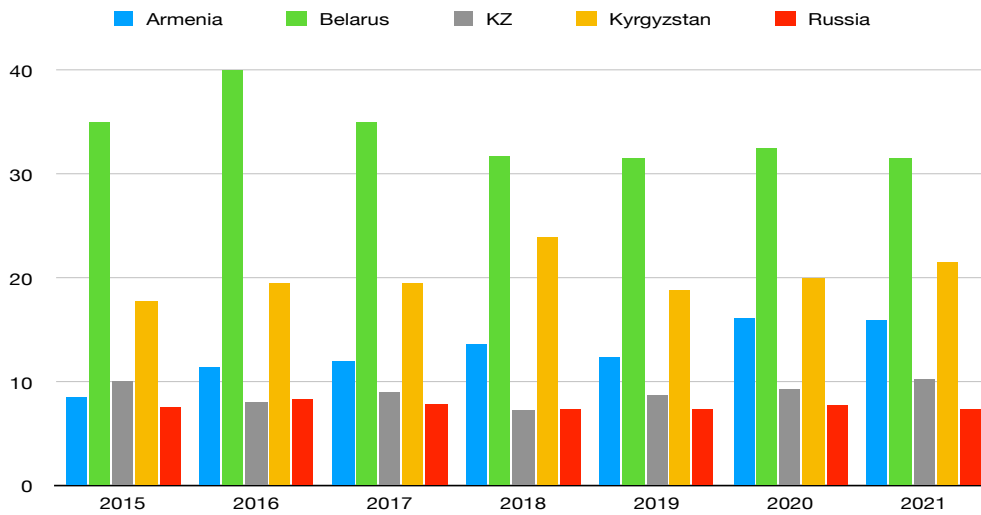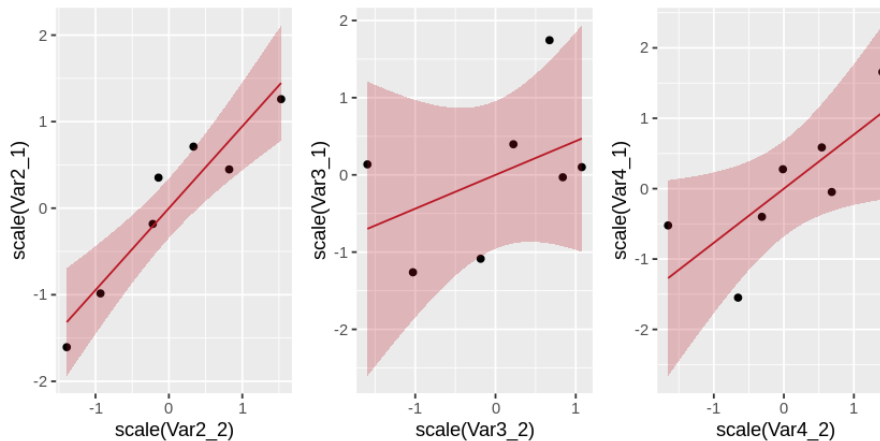
Source: composed by author

Figure 2. Trade Intensity index for the EAEU countries, 2015-21

Source: composed by author

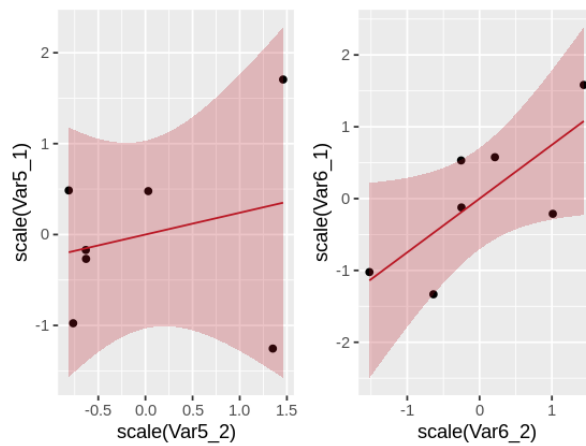**Figure 3.** The scatter diagram on Import Penetration index and the rate of mutual trade of EAEU countries, 2015-2021
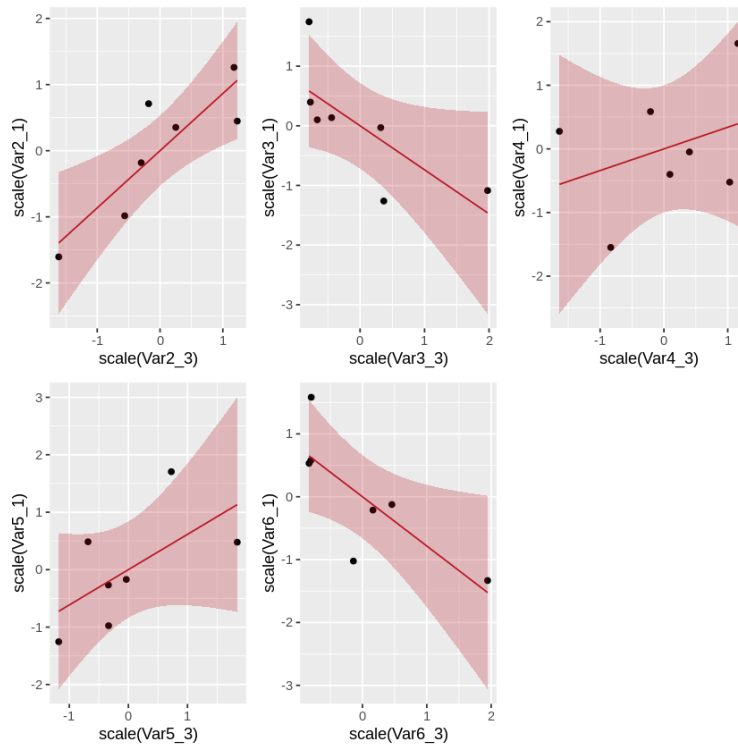
Source: composed by author

Figure 4. The scatter diagram on Trade Intensity index and GDP of EAEU countries, 2015-2021

Source: composed by author

Table 3 – Results of correlation analysis

Countries	Correlation between Import Penetration index and rates of mutual trade of EAEU countries	Correlation between Trade Intensity index and GDP of EAEU countries
Armenia	0.9459944 Very high direct correlation	0.8652796 High direct correlation
Belarus	Not significant	-0.7386099 Strong feedback
Kazakhstan	0.7692307 Strong direct correlation	Not significant

Countries	Correlation between Import Penetration index and rates of mutual trade of EAEU countries	Correlation between Trade Intensity index and GDP of EAEU countries
Kyrgyzstan	Not significant	Not significant
Russia	0.7484409 Strong direct correlation	-0.7832947 Strong feedback

Source: composed by author

Conclusions

The research revealed the following:

- there is a direct (statistically significant) correlation between the GDP and the rate of mutual trade of the EAEU countries;

- there is a direct (statistically significant) correlation between the Import Penetration index and the rates of mutual trade of the EAEU countries for a number of countries: Armenia, Kazakhstan, Russia;

- there is a direct (statistically significant) correlation between the Trade Intensity Index and GDP of the EAEU countries for a number of countries: Armenia, the Republic of Belarus, and inverse one for Russia.

Consequently, the results of the study demonstrate the direct impact of the rates of mutual trade of the EAEU countries on the dynamics of their economic growth.

Research limitations:

- data skewing the overall picture on the impact of the coronavirus pandemic and subsequent lockdown in 2020 and 2021;

- external shocks which have a significant impact on the dynamics of socio-economic development, primarily of the Russian economy;

- the possibility of non-optimality of correlation analysis application for solving the research problem (there are an approbation and search for an adequate research methodology).

However, the author hopes that the data obtained as a result of the study and the problems solved will activate a new wave of applied research on assessing the impact of sanctions shocks on the economies of the EAEU countries.

CONFLICT OF INTEREST

The author declares no conflict of interest.

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