



INTERNATIONAL ECONOMICS

ANNA PAKHLYAN

*PhD in Economics, Associate Professor
of the Chair of International Economic Relations
of Armenian State University of Economics,
Researcher at “Amberd” Research Center*

 <https://orcid.org/0000-0002-5854-2473>

SUSANNA AGHAJANYAN

*PhD in Economics, Lecturer
of the Chair of International Economic Relations
of Armenian State University of Economics*

 <https://orcid.org/0000-0002-5469-3995>

TATEVIK VARDANYAN

*Lecturer of the Chair of International Economic Relations
of Armenian State University of Economics*

 <https://orcid.org/0000-0001-6488-2717>

TIGRAN MIKAYELYAN

*PhD student, Chair of International Economic Relations
of Armenian State University of Economics*

ANI HARUTYUNYAN

*Master’s Degree Student, Specialty of
“International Economic Relations”
of Armenian State University of Economics*

IMPACT OF POSSIBLE UNBLOCKING OF ARMENIA BY TURKEY ON THE ECONOMIC DEVELOPMENT OF ARMENIA

One of the prerequisites for economic integration is the compatibility of countries' levels of economic development and market maturity. This means that the processes of economic cooperation are more actively carried out between countries that are almost at the same level of economic development. Despite the fact that Turkey is a developing country, the differences with Armenia are noticeable. Economic cooperation is manifested

to take advantage of the united market, create favorable conditions for the development of the country, strengthen its participation in international agreements on economic issues, exchange experience of market transformations and promote the development of national industry and agriculture.

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Introduction. Analyzing the relationship between political behavior and economic interests raises several challenges. First, there is the problem of measuring the sensitivity of one country's welfare to productivity growth in another country. Some studies use bilateral trade. However, one country's economic exposure to another does not only depend on bilateral trade frictions, but also on trade frictions with other nations. Even taking this multilateral resistance into account yields an incomplete picture, because productivity growth in trade partners typically has other general equilibrium effects through the terms of trade. Another approach is to undertake counterfactuals for productivity shocks within a non-linear general equilibrium trade model.

Different forms of trade have been in existence for thousands of years. Whether or not you are analyzing the trade routes of antiquity or modern times, trade and commerce have played a vital role in business expansion. Modern times have witnessed the birth of a global economy. Countries today engage in some form of global trade. Although, the United States has led the world in the new global economy, many countries are finding value in grouping together to form a regional free trade bloc or alliance.

Literature review. There are several studies that are devoted to predicting the likely results from opening the Armenian-Turkish border. It is widely accepted that border opening will have a positive economic effect on the countries in the region, but this raises the most debatable argument which is how to quantify economic gains that will accrue to different countries.

In his study "Changing Patterns after Conflict Resolution in South Caucasus"¹ Polyakov uses the results of gravity model developed by Baldwin for estimating the potential integration of East and West European trade to assess potential trade flows between Armenia and some of its trade partners, including Turkey. However, using the results of the model that was originally estimated for developed countries with intensive trade relations among themselves leads to overly optimistic conclusions. For example, Polyakov estimates that potential exports of industrial products from Armenia to Turkey (excluding natural resources) are estimated to increase to US\$230 million, thanks to the exports of electricity and construction materials. Furthermore, due to the multiplier effect, the increase in Armenian exports to Turkey is calculated to account for as much

¹ Polyakov, E. (2001). *Changing Trade Patterns after Conflict Resolution in South Caucasus*, The World Bank

as 38% of GDP. So, the main issue of this model is that it has optimistic highlights for developing countries because it is considered to be used for developed countries.

The other research which analyzes the impact of the border opening is AEPLAC's "Study of the Economic Impact on the Armenian Economy from Re-opening of the Turkish-Armenian Borders".² The authors estimate a gravity model of trade using data on trade between Armenia and its most important 20 trading partners to calculate short- and medium-term effects of border opening. The results are then used for a more complete analysis of border opening effects on Armenian economy based on a CGE model of Armenia. In our opinion, the authors of this research are too conservative in their estimates of potential economic effects of border opening. They have not comprehensively pictured the key consequences of the border opening for Armenia.

In his research entitled "Economic Impacts of Re-Opening the Armenian-Turkish Border" Khachatryan also discusses economic consequences of the possible re-opening of the Armenian-Turkish border.³ According to the article, opening the Turkish market to Armenia would greatly improve the investment rating of Armenia as the limited volumes of markets nearby make it a risky site for investments. The second major benefit for Armenia would be the additional way of communication with the outer world. Opening the Turkish-Armenian border would bring economic benefits to Turkey as well. First of all, this would be a stimulus for the regions of Turkey bordering Armenia. The second obvious benefit for Turkey would consist of using the Armenian railroads for easier access to Georgia, Azerbaijan and Central Asia. But the author does not take into consideration the challenges and problems of border opening for Armenia. There is no analysis about the Armenian market readiness of competing with Turkish products. Moreover, it is very important to consider the impact of Turkish investments on Armenia's economic and political environment.

Academician Ruben Safrastyan refers to the issue in his policy paper "Armenian-Turkish Relations: From Interstate Dispute to Neighborliness".⁴ In his research he addresses the issue, taking into consideration the different levels and measurements of the problem, and according to this analysis, he provides some recommendations to overcome the abnormal situation between the two states.

Another research was conducted by independent analysts James Bosbotinis and Irina Ghaplanyan, who examined the regional implications of the reopening of the Armenian-Turkish border within the context of geo-economic and geopolitical analysis.⁵ This analysis is focused on assessing the costs and benefits

² Jrbashyan, T. et al, (2005). *Study of the Economic Impact on the Armenian Economy from Re-opening of the Turkish-Armenian Borders*, Armenian-European Policy and Legal Advice Center (AEPLAC), Yerevan, Armenia

³ Khachatryan, H. (2014). *Economic Impacts of Re-Opening the Armenian-Turkish Border*, https://ge.boell.org/sites/default/files/2019-11/Economic_Impacts_of_Re-opening-Khachatryan.pdf

⁴ Safrastyan, R. (2004). *Armenian-Turkish Relations: From Interstate Dispute to Neighborliness*, [Policy Documentation Center] <http://pdc.ceu.hu/archive/00001921/>

⁵ Bosbotinis, J. Ghaplanyan, I. (2006). *The Economic and Social Consequences of Reopening the Armenian Turkish Border: The Implications for the South Caucasus, Turkey, and Europe*.

of re-opening the border for Armenia, the region, in particular economic development, regional stability, governance and foreign direct investment. The research also focuses on wider regional and political-economic implications for Turkey. What is found out is that the opening of the Armenian-Turkish border will significantly contribute to the improvement of relations between Armenia and Turkey, provide the framework for economic development in the region, and aid the process of regional integration, reconciliation and conflict resolution. This will enhance the prospects for the integration of the South Caucasus within the Black Sea regional community, and the extended Euro-Atlantic Community.

Research methodology. The analysis in the paper is based on methodology and method. It is necessary to make a distinction between these two concepts. Methodology refers to “the general logic and theoretical perspective” of a study, whereas methods only refer to specific strategies, procedures, and techniques of analyzing and interpreting data. In this paper, the authors have used three research methodologies: quantitative, qualitative, and mixed-methods. With quantitative methods authors did statistical analysis to answer their research questions, and using qualitative methods they made observations and content analysis. In addition, for comprehensive understanding of issue, the authors used the methods of statistical, mathematical (Figureic), comparative, structural and econometric analysis in the framework of this research.

Sources of information collection were the Statistical Committee of the Republic of Armenia and Turkey, publications of international organizations such as the World Bank, Eurostat, the International Labor Organization, the European Bank for Reconstruction and Development and authoritative international research and reports. The theoretical, informational and methodological basis for the paper was the foreign and national literature about the impact of closed borders on Armenian and Turkish economies, the analysis of researchers in scientific publications, Internet links and data about this issue. This study used time series of some indicators such as import and export of goods and services of Armenia and Turkey, GDP of Armenia and Turkey, Economic Openness Index, Global Competitiveness Report 2019.

Correlation and regression analysis was performed using the smallest squares method by Eviews 10 SV software package.

Analysis. It is very essential to determine the competitive industries of Armenia in the conditions of an open border with Turkey. To discover the impact on the real sector of the economy the authors performed the calculation applying the widely used Comparative Advantage Model (CAM) proposed by Bella Balassa.⁶ The main idea of CAM is that if a country exports a large amount of any product, then it produces the product in an efficient way and has a comparative advantage in its production. This model can be useful for determination of the goods that the country can export, and will provide an opportunity to prove that Armenia has a comparative advantage in the production of these goods.

⁶ Թորոսյան, Թ., Հայրապետյան, Գ., Գալոյան, Դ., Հովականյան, Ն., Կոտիկյան, Ն., Սարգսյան, Լ. (2012). Հայաստանը և Թուրքիան փարածաշրջանային տնտեսական ինտեգրման գործընթացներում, Երևան, ՀՀ ԳԱԱ «Գիտություն» հրատ., էջ 176:

However, if this model shows that Armenia does not currently have a comparative advantage (CA) in the production of certain types of goods, this result may not be accurate due to the blockade. It is well known reality that Armenia's economy is small, while Turkey's is relatively large. As the Armenian market is relatively small, it is not obligatory that opening border with Turkey has the same impact on all the groups of products in which the country has a comparative advantage.

The CA of the commodity groups of the economic sectors of Armenia and Turkey can be calculated using the following formula:

$$RCA_i = (X_i - M_i) / (X_i + M_i), \quad (1)$$

where

X_i : the export value of each of the commodity group i ,

M_i : the import value of each industry i ,

RCA_i : comparative advantage of each industry in the product group.

If the comparative advantage of a commodity group is equal to one (1.0), then the import is zero, i.e. the country produces this product, satisfying domestic needs and exporting the part of it. This means that the country can effectively produce this product and has a comparative advantage in its production. On the other hand, if the comparative advantage of a commodity group is equal to -1, it means that the country cannot export this product and only imports it to fully or partially meet its own demand:

Table 1

Coefficients of maximum comparative advantages of commodity groups produced by Armenia and Turkey (2015-2020)⁷

| | 2015 | | 2016 | | 2017 | | 2018 | | 2019 | | 2020 | |
|---|--------|---------|--------|---------|--------|---------|--------|---------|--------|---------|--------|---------|
| | Turkey | Armenia |
| Live animals | -0.807 | -0.047 | -0.911 | -0.325 | -0.944 | -0.013 | -0.937 | -0.504 | -0.784 | 0.063 | -0.685 | 0.475 |
| Meat and edible meat offal | 0.612 | -0.904 | 0.797 | -0.667 | 0.723 | -0.629 | 0.375 | -0.650 | 0.759 | -0.817 | 0.769 | -0.995 |
| Fish and crustaceans, mollusks and other aquatic invertebrates | 0.452 | 0.602 | 0.620 | 0.617 | 0.563 | 0.633 | 0.653 | 0.722 | 0.673 | 0.700 | 0.743 | 0.873 |
| Dairy produce; birds' eggs; natural honey; edible products of animal origin | 0.565 | -0.190 | 0.687 | -0.449 | 0.706 | -0.497 | 0.707 | -0.644 | 0.642 | -0.693 | 0.668 | -0.625 |
| Edible fruit and nuts; peel of citrus fruit or melons | 0.807 | -0.396 | 0.755 | -0.035 | 0.747 | -0.441 | 0.751 | -0.374 | 0.661 | -0.331 | 0.685 | -0.098 |
| Products of the milling industry; malt; starches; inulin; wheat gluten | 0.833 | -0.970 | 0.821 | -0.979 | 0.798 | -0.970 | 0.818 | -0.974 | 0.844 | -0.979 | 0.800 | -0.960 |

⁷ Calculated by the authors based on TRADEMAP statistical data - <https://www.trademap.org/>.

| | | | | | | | | | | | | |
|---|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| Preparations of cereals, flour, starch or milk; pastry cooks' products | 0.752 | -0.906 | 0.758 | -0.894 | 0.763 | -0.931 | 0.784 | -0.929 | 0.794 | -0.941 | 0.815 | -0.922 |
| Preparations of vegetables, fruit, nuts or other parts of plants | 0.901 | 0.125 | 0.918 | 0.151 | 0.922 | 0.174 | 0.933 | 0.166 | 0.867 | 0.090 | 0.881 | 0.180 |
| Mineral fuels, mineral oils and products of their distillation; bituminous substances | -0.787 | -0.759 | -0.789 | -0.805 | -0.792 | -0.794 | -0.814 | -0.786 | -0.663 | -0.835 | -0.720 | -0.812 |
| Plastics and articles thereof | -0.392 | -0.799 | -0.396 | -0.820 | -0.416 | -0.868 | -0.363 | -0.843 | -0.268 | -0.846 | -0.255 | -0.829 |
| Rubber and articles thereof | -0.077 | -0.982 | -0.075 | -0.984 | -0.084 | -0.973 | 0.003 | -0.929 | 0.055 | -0.961 | -0.007 | -0.896 |
| Carpets and other textile floor coverings | 0.902 | -0.921 | 0.934 | -0.762 | 0.947 | -0.746 | 0.954 | -0.564 | 0.955 | -0.830 | 0.967 | -0.952 |
| Articles of apparel and clothing accessories, knitted or crocheted | 0.824 | -0.650 | 0.836 | -0.446 | 0.846 | -0.300 | 0.871 | -0.227 | 0.874 | -0.356 | 0.878 | -0.317 |
| Natural or cultured pearls, precious or semi-precious stones, precious metals | 0.458 | 0.267 | 0.257 | 0.367 | -0.232 | 0.127 | -0.273 | 0.032 | -0.291 | 0.161 | -0.598 | 0.420 |
| Iron and steel | -0.385 | -0.085 | -0.340 | 0.067 | -0.341 | 0.021 | -0.229 | 0.081 | -0.201 | 0.193 | -0.264 | -0.014 |
| Articles of iron or steel | 0.332 | -0.955 | 0.250 | -0.939 | 0.309 | -0.928 | 0.396 | -0.951 | 0.439 | -0.948 | 0.442 | -0.920 |
| Aluminum and articles thereof | -0.169 | 0.006 | -0.123 | 0.058 | -0.160 | 0.041 | -0.128 | 0.001 | -0.077 | -0.040 | -0.054 | 0.014 |
| Machinery, mechanical appliances, nuclear reactors, boilers; parts thereof | -0.350 | -0.928 | -0.375 | -0.900 | -0.325 | -0.902 | -0.239 | -0.924 | -0.110 | -0.893 | -0.201 | -0.910 |
| Electrical machinery and equipment and parts thereof; sound recorders and reproducers, television | -0.361 | -0.927 | -0.443 | -0.887 | -0.447 | -0.862 | -0.310 | -0.890 | -0.226 | -0.913 | -0.296 | -0.897 |
| Vehicles other than railway or tramway rolling stock, and parts and accessories thereof | -0.002 | -0.900 | 0.052 | -0.773 | 0.157 | -0.831 | 0.316 | -0.794 | 0.458 | -0.851 | 0.182 | -0.840 |
| Furniture; bedding, mattresses, mattress supports, cushions and similar stuffed furnishings | 0.333 | -0.917 | 0.451 | -0.909 | 0.489 | -0.331 | 0.576 | -0.682 | 0.672 | -0.781 | 0.688 | -0.613 |

According to Table 1, during 2015-2020 there were several commodity groups (animals, fish and shellfish, and other aquatic invertebrates, etc.) in which Armenia had a positive comparative advantage, while Turkey had negative results. The results of comparative advantage of industries in Armenia and Turkey indicates that Armenia can successfully export these goods, and Turkey can import them in relatively large quantities. There are a relatively large number of commodity groups in which Turkey has a very positive comparative advantage, while Armenia's indicator is negative. Those are:

- meat and meat by-products,

- dairy products, poultry egg, natural honey, etc.,
- animal products,
- mill-cereals, malt, starch, inulin,
- products from wheat, flour, starch and milk, flour confectionery,
- carpets and other textile coverings,
- cast iron and steel, iron or steel products,
- furniture, bedding, mattresses, pillows and similar upholstered furniture.

It can be assumed that if there is an open border, Turkey will be ready to export these goods to Armenia, which may put local producers in a difficult position. The economies of Turkey and Armenia are incomparable in terms of volume, which suggests that the export and import opportunities of each branch of the Turkish economy are much greater. In this context, we can clearly state that the opening of the border will not impact on the Turkish economy as much, as on Armenian. At the same time, the impact and consequences must be considered not only from an economic point of view, but also from national security.

For Armenia, the opening of the border with Turkey is an opportunity to reduce costs and access new markets, which can become an incentive for economic development. Nevertheless, in this case, Armenian producers become vulnerable, and may not be able to withstand the competitiveness of cheap Turkish goods. On the other hand, the open border with Turkey is an opportunity for Armenian producers to enter international markets, reducing the cost of exported goods.

An access to international markets will definitely have a positive impact on the competitiveness of local producers, which, in turn, will lead to the expansion of local production. If the border is opened, Armenia will have the opportunity to enter the Mediterranean and Black Seas through Turkey, including the possibility to export certain goods to Turkey. When building economic relations with a neighboring country, the main risk is Turkey's ability to produce agricultural products, as well as low-quality and high-quality industrial products. In this regard, it is very important to take into account the issue of food security in Armenia.

One of the characteristic features of the modern world economy is the development of integration processes. Those countries that are not part of integration, cannot effectively resist modern comprehensive competition and counteract the challenges of globalization. This fully applies to the economy of the Republic of Armenia.

In the case of Armenia and Turkey, an important indicator in terms of trade relations is the *Complementarity Index*. It makes possible to assess the prospects for trade between countries or a group of countries. It shows how the export and import structures of the trading partner countries correspond to each other (how much the export of one country corresponds to the import profile of the partner country).

The Complementarity Index is calculated using the following formula:

$$TC_{ij} = 100 \left(1 - \frac{\sum_i |M_{iK} - X_{iJ}|}{2} \right) \quad (2)$$

where

M_{iK} - The share of the product i in the total imports of the country K ,

X_{iJ} - The share of the product i in the total exports of the country J .

Our calculations show that in 2020, the degree of compliance of Armenia's import structure with Turkey's export structure was 64%. The data analysis of Figure 1 shows that the average figure for 2004–2020 is 58.7%. It must be stated that the closer the indicator is to 100%, the more benefits from mutual trade for the countries. For comparison, it should be noted that in 2020, the degree of compliance of Armenia's import structure with Russia's export structure was 44.3%. The analysis of The Complementarity Index suggests that both the development of an alternative import policy and the concept of replacing import of some products are important for Armenia. Thus, a good opportunity for import is the Russian market of building materials, where the available goods are inferior neither in quality nor price, and can be considered as equivalent substitutes for Turkish products. Another vital reason is that EAEU makes it possible to provide access to the Armenian market through simplified customs procedures.

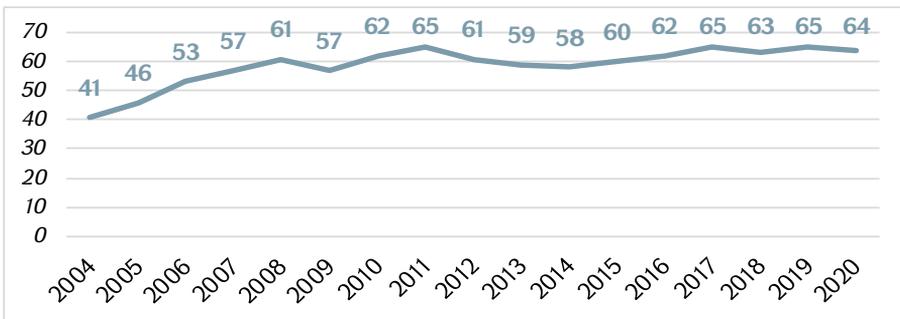


Figure 1. Complementarity Index for Armenian imports and Turkish exports, %⁸

For many years, Armenia's most serious economic challenges have been high unemployment, poverty and emigration. In this case, the competitiveness of the economy is the ability of the economy to create jobs with relatively high wages. At the same time, 2020 has revealed new challenges and obstacles for the whole world and especially for Armenia. Since the beginning of 2020, the world economy has been paralyzed by the global COVID-19 pandemic. On the other hand, the 44-day war unleashed by Azerbaijan on September 27, 2020 was another serious shock for Armenia. These events, of course, have had a direct impact on the competitiveness, pace and directions of the Armenian economy.

In the current development processes of modern world economy, no economy of any country can develop in a closed form. Active participation in international trade processes is considered one of the necessary conditions for the development of the economic system. The deepening of economic processes

⁸ Calculated by the authors based on the TRADEMAP statistical data - <https://www.trademap.org/>

in the context of integration and globalization of the world economy are the main reasons for effectiveness and competitiveness of the economies.

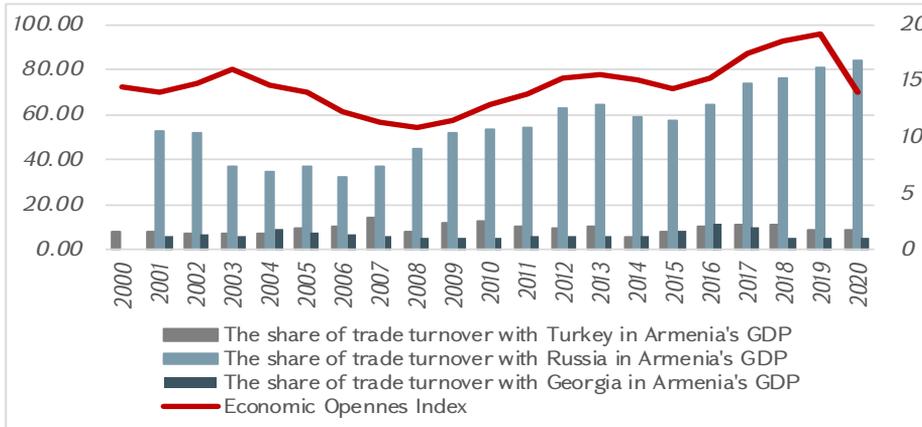


Figure 2. Armenia's Economic Openness Index, as well as trade turnover between Turkey and Russia in Armenia's GDP, %⁹

As the analysis of the data in Figure 2 shows, the Openness Index of the Armenian economy was 95.7% in 2019 and 70.06% in 2020. At the same time, especially due to the rate of coverage of the COVID-19 global pandemic, in 2020 the same indicator was 70%, which is explained by the reduction of both export and import volumes.

During the observed 2000-2020 period, the Openness Index of the Armenian economy was 72.7% on average. For comparison, in 2020, the overall Economic Openness Index, calculated for 153 countries, accounted for 86.4% on average (91.31% in 2019). Turkey is far behind in terms of economic openness - at 60.89% in 2020. However, in terms of economic openness, Armenia is behind Georgia, where the index is 93.27%, and Azerbaijan, which achieved the level of 72.16%.¹⁰ It means that Armenia is more integrated to the world economy, than Turkey, but less integrated than Georgia and Azerbaijan. However, it should be considered that the indexes of 2020 cannot reflect the real situation, as due to the COVID-19 pandemic, the majority of countries worldwide had to implement restrictions, which in turn led to the distortion of economic openness indicators.

The data in Figure 2 give an opportunity to conduct a comparative analysis of the shares of trade turnover with Russia, Turkey and Georgia in the GDP of Armenia. Thus, we can clearly state that in 2020 the share of trade with Russia is about 17 times higher than the share of trade with Georgia and over 9 times higher than the share of trade with Turkey. In 2020, the share of trade with Turkey in the GDP of Armenia is 1.8%, Georgia - 1.0% and Russia - 16.9% on average.

Hence, in case of reopening the border between Armenia and Turkey, Armenia will have at least two problems: to find ways to get as much use as

⁹ Source: <https://data.worldbank.org/>

¹⁰ Trade openness - Country rankings - https://www.theglobaleconomy.com/rankings/trade_openness/

possible from the trade with Turkey while reducing its negative impact on domestic production.

In order to understand the competitiveness of the Armenian economy and compare it with Turkey, the indicators of international organizations and economic forums are presented through a comparative analysis. The World Economic Forum (WEF) in its Annual Global Competitiveness Report examines and presents the key factors that enhance national competitiveness. Competitiveness is defined as a set of institutions, policies, and activities by the WEF that determine a country's productivity.

According to the "Global Competitiveness Report 2019", Singapore tops the list of 141 countries, followed by the United States, Hong Kong and the Netherlands. It should be noted that Armenia ranks 69th out of 141 countries in the Global Competitiveness Index (GCI) and Turkey is the 61st. The structure of the 12 pillars of GCI for Armenia and Turkey is presented in Table 3.

Table 3

The structure of the 12 pillars of GCI of Armenia and Turkey ¹¹

| <i>Pillar</i> | <i>Name</i> | <i>Rank Armenia</i> | <i>Rank Turkey</i> |
|---------------|--|---------------------|--------------------|
| 1st | Institutions | 62th | 71th |
| 2nd | Infrastructure | 60th | 49th |
| 3rd | Information and communication technologies | 55th | 69th |
| 4th | Macroeconomic environment | 64th | 129th |
| 5th | Healthcare | 68th | 42th |
| 6th | Skills | 61th | 78th |
| 7th | Commodity market | 44th | 78th |
| 8th | Labor market | 32th | 109th |
| 9th | Financial system | 69th | 68th |
| 10th | Market size | 118th | 63th |
| 11th | Business dynamics | 57th | 75th |
| 12th | Innovative capacity | 62th | 49th |

The analysis of the data in Table 3 shows that Armenia is in a more favorable position in 7 of the 12 pillars than Turkey, moreover, in such strong pillars as "Macroeconomic environment", "Business", "Dynamics", "Institutes", "Labor Market", etc. At the same time, Armenia's market size is in a bad position compared to Turkey's. On that pillar, Armenia ranks the 118th place and Turkey is on the 63rd. It is quite natural, especially if we take into account that the population of Armenia is 2.9 million people, and in Turkey - 83.4 million.

In general, the analysis shows that goods imported from Turkey have a large share in the total imports of Armenia. In this context, it is possible to study and understand the correlation between the volume of goods imported from Turkey and the competitiveness of the Armenian economy. Before assessing the impact of the volume of goods imported from Turkey on the competitiveness of the Republic of Armenia, the numerical series were logarithmized to normalize the possible percentage fluctuations in them.

¹¹ Schwab, K. (2019). *The Global Competitiveness Report 2019*, World Economic Forum, ISBN-13: 978-2-940631-02-5, p. 62, p. 562.

http://www3.weforum.org/docs/WEF_TheGlobalCompetitivenessReport2019.pdf



Figure 3. Import from Turkey to Armenia (LIMPORTFROMTURKEY), the weight of Armenia's Global Competitiveness Index (LGCIARM) 2008-2019¹²

The econometric analysis was performed using the Eviews 10 SV software package, where the stationarity of the series was checked at first by the Dickey-Fuller test.

Table 4

Dickey-Fuller Advanced statistical test

| <i>The variable has a root unit</i> | | |
|--|-----------|--------|
| <i>Exogenous variables are constant</i> | | |
| | t-stat | prob. |
| Import from Turkey to Armenia | -4.060940 | 0.0141 |
| The weight of Armenia's Global Competitiveness Index | -2.962885 | 0.0727 |

All variables are stationary with the first difference, which allows to perform econometric analysis. The volume of goods imported to Armenia from Turkey was considered as an independent variable, and the dependent variable was the weight of Armenia's Global Competitiveness Index.

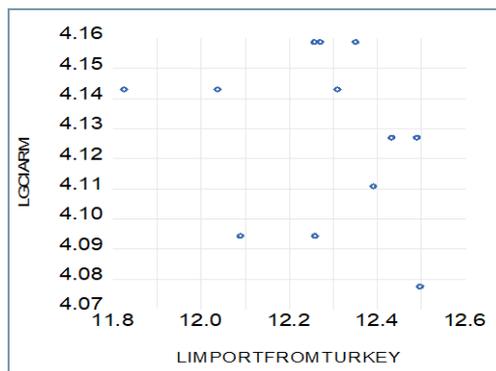


Figure 4. Correlation between imports from Turkey to Armenia (LIMPORTTT) and the weight of the Global Competitiveness Index of Armenia (LGCIARM)

Pearson's correlation analysis shows that the correlation dependence of the import from Turkey to Armenia (LIMPORTTT) and Global Competitiveness Index

¹² Calculated by the authors based on TRADEMAP statistical data <https://www.trademap.org/> and The Global Competitiveness Report 2019, Professor Klaus Schwab, Economic Forum, ISBN-13: 978-2-940631-02-5, p. 62, p. 562.
http://www3.weforum.org/docs/WEF_TheGlobalCompetitivenessReport2019.pdf

of Armenia (LGCIARM) is -0.24, which suggests that there is no positive correlation between the indicators.

We have also calculated the dependence of goods imported from Turkey on Armenia's GDP. In this case, the logarithmic series presented in Figure 5 were observed, and the stationarity was checked by the Dickey-Fuller test.

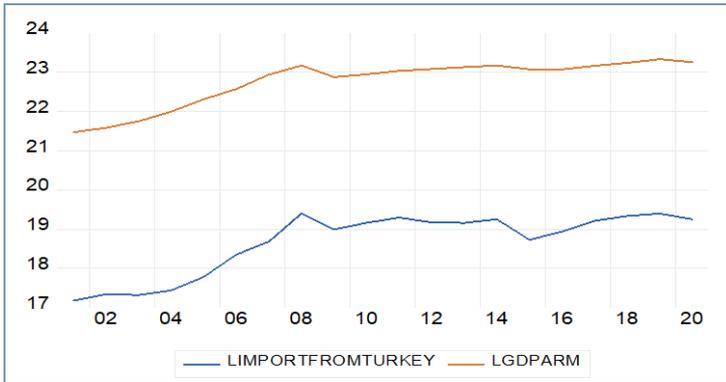


Figure 5. Import from Turkey to Armenia (LIMPORTFROMTURKEY) and Armenia's GDP (LGCIARM) 2001-2020 ¹³

Regression analysis was performed using the smallest squares method by Eviews 10 SV software package. For econometric analysis, Armenia's GDP was considered as a dependent variable, and the volume of goods imported from Turkey was considered as an independent variable.

Table 5

Description of the linear regression model of Armenia's GDP and volume of goods imported from Turkey

| Model | R | R Square | Adjusted R Square | Std. Error of the Estimate | Durbin-Watson |
|-------|------|----------|-------------------|----------------------------|---------------|
| 1 | 0.97 | 0.95 | 0.94 | 0.18 | 0.99 |

Pearson's correlation analysis shows that there is a direct linear connection between Armenia's GDP and volume of goods imported from Turkey and the correlation coefficient is 0.97. From this we can assume that the linear change of one variable of the correlation analysis reacts to the change of the other variable. The results of the model show that $R^2 = 0.95$, from which it should be concluded to what extent the variations in the available data can be explained by the model.

Table 6

Description of the linear regression model of Armenia's GDP and volume of goods imported from Turkey (Coefficients)

| | Unstandardized Coefficients | | Standardized Coefficients | t | Sig. |
|------------|-----------------------------|------------|---------------------------|--------|------|
| | B | Std. Error | Beta | | |
| log Rem | .081 | .022 | .663 | 3.758 | .001 |
| (Constant) | 4.236 | .145 | | 29.155 | .000 |

¹³ Calculated by the authors based on TRADEMAP - <https://www.trademap.org/> and World Bank - <https://data.worldbank.org/> statistical data.

Thus, as a result of the model, the below formula can be concluded:

$$Y=4.2X+0.081$$

The main conclusion of the model is that the 1% increase in Armenia's GDP leads to the 0.1% increase in volume of goods imported from Turkey. In fact, in this case, it turns out that 1% increase in GDP explains 0.1% of the volume of goods imported from Turkey. Only 5% of the variations in the constructed model is not explained by the model. However, a number of issues needs to be considered. The limited possibilities of statistical data in Armenia force the model to be built only for two variables for 20 years, which is already an econometric problem. In addition, the data included in the World Bank statistical databases were taken as a basis, too. But it is necessary to take into account that quite a large assortment of goods is imported from Turkey through intermediaries. At the same time, taking into account the existing problems, the construction of the model becomes very important, which, in case of correcting the above-mentioned problems, will become more practical and will be applicable.

Conclusions. Obstacles to Turkey-Armenia economic cooperation may arise, which may slow down the process to some extent. The most important of these obstacles are:

- Significant difference in levels of economic development and production capacity;
- Underdeveloped state of infrastructure, including interconnected infrastructure;
- The economies of the two countries weakly complement each other, which, in turn, requires structural changes;
- Political instability contradictions, conflicts of interest.

Summing up the Comparative Advantage Model calculated for Armenia and Turkey, we can expect that if Turkey reopens the border, Armenian consumers and some sectors of the economy will benefit from it, while others will not be able to compete with goods imported from Turkey. The reduction of production costs and access to new markets can be a serious impetus for the development of the Armenian economy. However, in terms of possible increase in exports, domestic producers will have the problem of improving the quality of resistance to strict competition. The problems of social security of the citizens who may lose their jobs as a result of the opening of the border and the liberalization of trade can cause serious problems for the state management system and the state budget. The results of comparative advantage model indicates that Armenia and Turkey can successfully export or import some goods. Of course, in case of Turkey the number and quantity of goods is relatively large. There is a relatively large number of commodity groups in which Turkey has a very positive comparative advantage, while Armenia's indicator is negative.

It also should be stated that in 2020, the degree of compliance of Armenia's import structure with Turkey's export structure was 64% which shows how the export and import structures of Armenia and Turkey correspond to each other. According to the analysis made in the research, it can also be pointed out that during 2000-2020 period the Openness Index of the Armenian economy is

72.7% on average, which is quite close to the average indicator calculated for 153 countries. The analysis of 12 pillars of GCI of Armenia and Turkey shows that Turkey is in better position than Armenia among 141 countries, but a deeper look at the 12 pillars shows that Armenia is in a more favorable position in 7 of the 12 pillars than Turkey.

The closure of the Armenian-Turkish border has several effects on the Armenian economy. First of all, the country is deprived of possible transport routes, it has to spend a lot on imports and exports. There are other types of expenses in a number of other areas. Investors take into account the high probability of involvement of the state in the external conflict when making important decisions, which, of course, directly affects the return on investment. The so-called “Cold War” situation naturally necessitated significant defense and security expenditures that could be reduced by normalizing relations with neighbors and directing savings to other sectors of the economy. Reopening the border is just one component of the process of ending the “Cold War” between Armenia and Turkey. At the same time, the following circumstance must be taken into account. It is debatable that the elimination of the “Cold War” situation will exclude the possibility of conflict. Global experience shows that some neighboring countries, with open borders and fully regulated interstate relations, are not free from the tension that is likely to escalate into problems in the future.

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ԱՆՆԱ ՓԱԽԼՅԱՆ

Հայաստանի պետական տնտեսագիտական համալսարանի միջազգային տնտեսական հարաբերությունների ամբիոնի դոցենտ, տնտեսագիտության թեկնածու, «Ամբերդ» հեղափոխական կենտրոնի հեղափոխող

ՍՈՒՍԱՆՆԱ ԱՂԱՋԱՆՅԱՆ

Հայաստանի պետական տնտեսագիտական համալսարանի միջազգային տնտեսական հարաբերությունների ամբիոնի դասախոս, տնտեսագիտության թեկնածու

ՏԱԹԵՎԻԿ ՎԱՐԴԱՆՅԱՆ

Հայաստանի պետական տնտեսագիտական համալսարանի միջազգային տնտեսական հարաբերությունների ամբիոնի դասախոս

ՏԻԳՐԱՆ ՄԻՔԱՅԵԼՅԱՆ

Հայաստանի պետական տնտեսագիտական համալսարանի միջազգային տնտեսական հարաբերությունների ամբիոնի ասպիրանտ

ԱՆԻ ՀԱՐՈՒԹՅՈՒՆՅԱՆ

Հայաստանի պետական տնտեսագիտական համալսարանի միջազգային տնտեսական հարաբերությունների ամբիոնի մագիստրոս

Թուրքիայի կողմից հնարավոր ապաշրջափական ազդեցությունը Հայաստանի տնտեսության զարգացման վրա.– Տնտեսական ինտեգրման նախապայմաններից է երկրների տնտեսական զարգացման մակարդակների և շուկայական հասունության համատեղելիությունը: Այսինքն՝ տնտեսական համագործակցության գործընթացներն ավելի ակտիվ են իրականացվում տնտեսական զարգացման գրեթե նույն մակարդակի վրա գտնվող երկրների միջև: Չնայած այն հանգամանքին, որ Թուրքիան ևս զարգացող երկիր է, վերջինիս և Հայաստանի տարբերությունները նկատելի են:

Տնտեսական համագործակցությունը դրսևորվում է միասնական շուկայից օգտվելու, երկրի զարգացման համար բարենպաստ պայմաններ ստեղծելու, տնտեսական հարցերի միջազգային պայմանագրերում մասնակցության ամրապնդման, շուկայի վերափոխումների փորձի փոխանակման և ազգային արդյունաբերության ու գյուղատնտեսության զարգացմանը նպաստելու առումներով:

Տնտեսական համագործակցությունը դրսևորվում է միասնական շուկայից օգտվելու, երկրի զարգացման համար բարենպաստ պայմաններ ստեղծելու, տնտեսական հարցերի միջազգային պայմանագրերում մասնակցության ամրապնդման, շուկայի վերափոխումների փորձի փոխանակման և ազգային արդյունաբերության ու գյուղատնտեսության զարգացմանը նպաստելու առումներով:

Հիմնաբառեր. համեմատական առավելությունների մոդել, փոխլրացման ինդեքս, տնտեսական բացության ինդեքս, միջազգային մրցունակություն, էկոնոմետրիկ վերլուծություն, գծային ռեգրեսիա:

JEL: O1, F40

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АННА ПАХЛЯН

*Доцент кафедры международных экономических отношений
Армянского государственного экономического университета,
кандидат экономических наук,
исследователь исследовательского центра «Амберд» АГЭУ*

СУСАННА АГАДЖАНЫН

*Преподаватель кафедры международных экономических отношений
Армянского государственного экономического университета,
кандидат экономических наук*

ТАТЕВИК ВАРДАНЫН

*Преподаватель кафедры международных экономических отношений
Армянского государственного экономического университета*

ТИГРАН МИКАЕЛЯН

*Аспирант кафедры международных экономических отношений
Армянского государственного экономического университета*

АНИ АРУТЮНЯН

*Магистрант кафедры международных экономических отношений
Армянского государственного экономического университета*

***Экономическое развитие Армении при возможной
разблокировке со стороны Турции.***

Одной из предпосылок экономической интеграции является совместимость уровней экономического развития и рыночной зрелости стран. Это означает, что процессы экономического сотрудничества активнее осуществляются между странами, находящимися приблизительно на одном уровне экономического развития. Несмотря на то, что Турция - развивающаяся страна, различия с Арменией очевидны.

Экономическое сотрудничество проявляется в использовании преимуществ единого рынка, создании благоприятных условий для развития страны, усилении ее участия в международных соглашениях по экономическим вопросам, обмене опытом рыночных преобразований и содействии развитию национальной промышленности и сельского хозяйства.

Ключевые слова: *модель сравнительных преимуществ, индекс дополненности, индекс экономической открытости, международная конкурентоспособность, эконометрический анализ, линейная регрессия.*

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