Granger Causality Analysis of Foreign Trade İmpact on Economic Growth and Some Socioeconomic Indicators: Case of Azerbaijan

GULALIYEV G. MAYIS
Mingachevir State University, Mingachevir city,D. Aliyeva 21 AZ4500, AZERBAIJAN

BAYRAMOV V. SHAHIN
Mingachevir State University, Mingachevir city,D. Aliyeva 21 AZ4500, AZERBAIJAN

GULIYEVA T. SHAFA
Azerbaijan State University of Econmics (UNEC), AZERBAIJAN

ALIKHANLI J. YEGANA
Azerbaijan Cooperation University, Baku city, Najaf Narimanov str., 93 AZ1006, AZERBAIJAN,

ORUJOVA S. MEHPARE
Azerbaijan Technical University, Baku city, ave. H.Javid, 25. AZƏRBAYCAN AZ1073, AZERBAIJAN

Abstract: The main purpose of the investigation is to define the existence of the causality relationship between foreign trade and some macroeconomic indicators in Azerbaijan. There was used OLS and cointegration methods, as well as Granger causality between these indicators. The main conclusion is that there is not a causality effect between import and GDP. As well as there is a causality effect between GDP and export. But there is not a strong causality effect between foreign trade openness, foreign trade freedom, and GDP. As well as the paper investigates the impact of import, export, and their annual changing on household income. For this purpose, the Dickey-Fuller test and Granger causality tests were applied. The authors come to the conclusion that there is no causal relationship between foreign trade indicators and poverty rate, but there is such a relationship between foreign trade indicators and household income.

Key-Words: foreign trade; import; export; Granger causality; trade freedom; foreign trade openness; trade balance; GDP, liberalization, household income

1 Introduction

One of the important factors for economic development for any country is foreign trade. Both aspects of foreign trade, i.e. imports and exports, affect the country's gross domestic product and socio-economic situation. The trade balance in each country plays an important role in increasing aggregate demand and the formation of macroeconomic balance. Quantitative assessment of the impact of foreign trade on economic growth and socio-economic indicators has great practical importance for creating an optimal foreign trade policy. Our study focuses on the socio-economic effects of imports, exports, trade balances, trade turnover, trade freedom and trade openness.

Researches on the socio-economic impacts of the country's foreign trade activities are rare in the economic literature of Azerbaijan. The small number of the dissertations and the articles investigate this problem, as well as references to the monographs, suggests that the relationship between these indicators is not limited to simple and visual comparisons. In most cases, the volume of imports or exports on the one hand, and socio-economic indicators on the other, are compared, and only the dynamics of these indicators are considered. However, serious econometric calculations are needed to determine the cause-and-effect relationship between these indicators.

2 Literature review

The effects of foreign trade operations on economic growth have been extensively studied by various researchers at different times. It should be noted that the impact of foreign trade, especially exports, on economic growth in different countries leads to different results.

Investigation of Rafigul and Haque [16] show that the growth rate of exports between 1990 and 2016 had a significant impact on GDP and poverty reduction in Bangladesh. AS well as in case of Bangladesh this problem is investigated by Mishu et.al.[11]. By using the ADF and Granger tests, as well as the ECM method, they show that there is a unidirectional causal relationship between export growth and GDP growth. For Bangladesh, there is a bidirectional causal relationship between import growth and GDP growth.

In the case of Palestine, Fannoun and Hassouneh [5], examined the cause-and-effect relationship between export and economic growth for the period 2000-2018. Based on the Johansen test and the VECM method, they conclude that there is a long-term balance between imports, exports and production. It was also determined that there are two long-term cause-and-effect relationships between imports, exports and production. This problem was studied by Abushihab and Abdul-Khaliq [19] on the example of Jordan. By using Granger test their empirical results also show that economic growth in Jordan is the cause for the export growth, but export growth is not cause for economic growth.

Despite the restriction of imports and the stimulation of exports by all countries, the question of the causal effect of imports on economic growth has not been unequivocally identified in the economic researches. Some studies confirm the positive cause-and-effect of import growth on GDP. For example, Mishu et.al.[10] claim that there is such a bidirectional relationship between imports and economic growth in the case of Bangladesh. This problem was studied by Ashraf et al. [12] in the case of Pakistan. Using statistics from 1970-2008, the researchers studied the impact of imports of chemicals, as well as machinery and equipment, on economic growth in Pakistan. Using the Granger test the result obtained bidirectional cause-and-effect relationship between import growth and GDP growth.

A study by Malhotra and Meenu [12] also used data from 1974-2003 and found that the relationship between economic growth and imports was a unidirectional cause-and-effect relationship. Thus, economic growth is the cause for the growth of imports, and there is no feedback. In both studies, all products were taken into account when calculating the volume of imports. A study by Mishra [11] confirms that imports also have a positive effect on economic growth over the long run, covering the years 1990-2010. He used the Granger test to determine the cause-and-effect relationship between these two indicators. Bader [2] studied the effects of imports and exports on economic growth through panel analysis based on materials from the period 1995-2013 on the case 17 Arab countries. The results show that import and export activities during this period had a positive impact on economic growth. However, according to the study, in order to increase labor productivity, it is necessary to give preference to the import of technological equipment. Increasing labor productivity as a result of the import of necessary equipments that are the main reason for economic growth. Masoud and Suleiman [8] also raises the question of the cause-and-effect relationship of imports and exports with economic growth. They even tried to study the impact of imports and exports on local investment. Applying VAR analysis, based on data for the period from 1967 to 2010, there was determined that exports and economic growth play a role in increasing local investment. A study by Bakari and Mabrouki [3] examined the cause-and-effect relationship between imports, exports and economic growth in Turkey on the basis of data from 1960 to 2015. The study used VARM and Jahansen cointegration analysis, as well as the Granger test. The results show that there is no correlation between these three indicators in Turkey. But on the other hand, there is a causal relationship from imports to economic growth and from exports to economic growth.

The problem of the impact of trade balance on economic growth has also been evaluated in various studies in the economic literature. Vikneswaran and San studied this problem in the case of the Malaysian economy. They studied the effects of the trade balance on incomes, the exchange rate, and the inflation rate between 2000 and 2015. In this study, such interactions for the short and long run were studied using the ARDL model. The causal relationship between these indicators was tested by the Granger test. The result is that the trade balance has a high impact on incomes, inflation and the exchange rate. However, there is no serious link between the money supply and the trade balance.

The effects of the trade balance, or rather the foreign trade deficit, on economic growth were studied by Ahmad et al [12] on the case of Pakistan. Based on the data covering 1971-2007, ADL test OLS method, Johansen test, ECM, ARCH method were applied in the study. For the long run used Johansen cointegration method, and for the short run, the ECM.

Johansen's method of cointegration for the Pakistani economy shows that the foreign trade deficit is negatively related to economic growth in the long run. However, the ECM shows that in the short run there is a positive correlation between these indicators.

Freedom of foreign trade, as one of the aspects of foreign trade activity, is an integral part of economic freedom and reflects the extent to which public administration institutions within the country interfere in foreign trade. The level of both foreign trade freedom and economic freedom as a whole is calculated by various research centers, including the Heritage Foundation. There is considerable research in the economic literature on the effects of economic freedom, as well as foreign trade freedom, on economic growth. Most of these studies confirm that the effects of economic freedom, including foreign trade freedom, on economic growth are positive. For example, Peev and Mueller [13] examined the effects of democratic change and economic freedom on economic growth in 24 post-communist countries between 1990 and 2007. The results show that the effects of economic freedom on economic growth are positive. However, the size of the public sector has a negative impact on economic growth. In this study, freedom of trade is considered a key component of economic freedom.

The investigation by Piątek et al [14] also shows that there is a cause-and-effect relationship between political and economic freedom and economic growth in transition countries. The study confirmed the effects of economic freedom calculated by 20 indicators on economic growth in 25 post-socialist countries between 1990 and 2008 by the Granger test. The effects of political freedoms on economic growth were found to be neutral. In this study, freedom of trade was taken as a key component of economic freedom. Razmi and Refaei [17] examined the effects of economic freedom and foreign trade openness on economic growth in 17 countries in the Middle East and East Asia region using panel analysis based on data from 2000-2009. The results show that there is a positive link between economic growth and the level of economic freedom, and a negative link between economic growth and the size of the government.

Gulaliyev et al [6] argue that freedom of foreign trade, which is an integral part of economic freedom, is a necessary condition, but not a sufficient condition for economic growth. The research shows that increasing the trade freedom rate doesn't provide economic growth in every condition. It is necessary to find and maintain certain intervals of trade freedom rate, which provides economic growth. In moving out of this interval trade freedom changing can negatively affect economic growth. Gulaliyev et al [6] consider the finding of the optimal level of foreign trade freedom for each country as a problem of great scientific and practical importance.

As well as the effects of trade openness on economic growth have been extensively studied in the economic literature. Yaya Keho [25] (the case of Cote d'Ivoire), Silajdzic and Mehic [21] (the case of Eastern European countries), Merale et.al. [9] (the case of South-Eastern European countries), Syed [24] (the case of Pakistan), Capolupo and Celi [4], (the case of European countries) investigated this problem. Some of these studies, e.g., Rajeh et.al. [16] have examined the relationship between trade openness and economic growth based on the new trade openness indicator presented by Squalli and Wilson [22] rather than the share of foreign trade turnover in GDP.

By conducting a comparative analysis of the above researches, we will try to analyze the cause-and-effect of some foreign trade indicators on economic growth in Azerbaijan. This is very important for Azerbaijan that is an oil-producing country, and the bulk of its foreign trade balance belongs to oil products. The oil export regime is different from the export regime of other products, and the openness and freedom of foreign trade do not play a role in the export of oil products.

3 Methodology

In this study we will assess causal relationship between the four main indicators of the foreign trade activity and economic growth, as well as two socioeconomic indicators. These indicators are 1) the volume of imports ($\dot{I}MP_t$); 2) export volume (EXP_t); 3) trade balance (TB_t); 4) foreign trade turnover volume (TT_t); . In our assessment we will use gross domestic product (GDP_t) and its annual change (ΔGDP_t). We will assess causality relationship between foreign trade indicators and GDP (and its annual change) and two sosioeconomic indicators (and their annual changes) by using Granger test:

$$Y_t = \sum_{j=1}^{m} a_j * X_{t-j} + \sum_{j=1}^{m} b_j * Y_{t-j} + \theta_t \quad (1)$$

$$X_t = \sum_{j=1}^{m} c_j * X_{t-j} + \sum_{j=1}^{m} d_j * Y_{t-j} + \varepsilon_t \quad (2)$$

The Granger causality test allows the prediction of another time series through one time series. It should be noted that such a prediction is necessary, but not sufficient, for the necessity of a cause-and-effect relationship.

The data covering the years 1992-2018 for the study were obtained from the official website of the State Statistics Committee of the Republic of Azerbaijan [23].

4 Results

4.1. Stationarity of some indicators' timeseries

We obtain the result in Table 1 for the stationarity time series characterizing the dynamics of İMP_t, EXP_t, TB_t , TT_t, In order to study the cause-and-effect between some of the key indicators characterizing foreign trade and household incomes in Azerbaijan, it is necessary to apply the Granger test. Table 1 shows that İMP_t, EXP_t, TB_tvə TT_t time series have stationarity from degree I(1). However, the time series characterizing the first differences of these indicators have stationarity from I (0) degree. FTF_t (foreign trade freedom) and FTO_t(foreign trade openness) indicators have stationarity from I(0) degree. The time series characterizing household incomes and its first differences have not stationarity in degrees I (0) and I (1).

Table 1

Stationarity of time series of some indicators related to foreign trade and socio-economic development

	τ − statistics	I(0)	I(1)
İMP_t-import volume	(-0.348)	H_0	H_1
ΔİMP_t-change in import volume	(-3.43)	H_1	-
EXP_t-export volume	(-1.156)	H_0	H_1
ΔEXP_t-change in export volume	(-3.232)	H_1	-
TB_t-trade balance	(-1.697)	H_0	H_1
ΔTB_t-trade balance change	(-2.867)	H_1	-
TT_t- trade turnover	(-0.889)	H_0	H_1
ΔTT_t- change in trade turnover	(-3.447)	H_1	-
FTF_t- foreign trade freedom	(-3.771)	H_1	-
FTO_t- openness of foreign trade	(-6.061)	H_1	-
$HHRPC_t$- per capita in households income	(-2.217)	H_0	H_0
$\Delta HHRPC_t$- change in per capita income in households	(-2.501)	H_0	H_0

Note: Calculated by the authors

4.2 Testing of Granger cause-and-effect relationship between foreign trade and GDP and its annual differences

Calculations show that there is a moderate correlation between ΔGDP_t and ΔİMP_t. However, the existence of such a relationship does not yet confirm the existence of a causal relationship between these indicators. The Granger test between changes in imports and GDP on the basis of 1, 2 and 3-year lags shows that there is no causal relationship in both directions, and for Azerbaijan, these two indicators are not conditioned. It should be noted that at first glance, the steady increase in imports over the past 20 years with the increase in GDP allowed us to draw the wrong conclusion that the main reason for the increase in imports in Azerbaijan is the increase in GDP. *However, the Granger test proves that there is no causal relationship between these two indicators, and the hypothesis $H_0$is valid in both directions when lag = 1 and 2. When Lag = 3, the hypothesis H_0 does not justify itself in one direction, or rather in the direction of $\Delta GDP_t \longrightarrow \Delta$İ$MP_t$. In this case, we can say that economic growth in Azerbaijan affects the change in imports with a delay of 3 years. In the opposite direction, there is no causal relationship.*

The Granger test can be performed for İ$MP_t$and GDP_t. However, it should be noted that none of these time series is stationary to degree I(0). However, the simple linear regression dependence between these two indicators is quite strong ($R^2 = 0.86$). The F-significance level is $2*10^{-10}$. However, this does not mean that there is a cause-and-effect relationship. Calculations show that for İMP_t and GDP_t for lag = 1, 2 and 3, the Granger test shows no causal relationship between these two indicators (Table 2).

The linear regression relationship between exports and GDP over the last 23 years is quite strong ($R^2 = 0.95$). The F-significance level is $7.35*10^{-15}$. However, to prove that such a strong regression relationship is indeed a cause-and-effect relationship, we must examine the existence of the Granger cause between the time series. Calculations show that for lag = 1, 2 and 3 for EXP_t and GDP_t, the Granger test shows a causal relationship between these two indicators (Table 2). However, such a causal relationship is one-sided, or more precisely, the volume of exports is the cause of GDP.

Calculations show that there is a high degree of correlation between ΔGDP_t and ΔEXP_t (R^2 =0.778252; F-significance rate =$5.67*10^{-8}$).

Table 2

Results of the Granger test on the effects of foreign trade indicators (and their annual changes) on GDP (and its annual changes) and per capita households' income per capita ($HHRPC_t$) in the case of Lag = 1; 2; 3

	Lag=1			Lag=2			Lag=3		
	F-statistics	P-probability	H_0	F-statistics	P-probability	H_0	F statistics	P-probability	H_0
$\Delta\dot{I}MP_t \longrightarrow \Delta GDP_t$	0.91569	0.3513	+	0.29121	0.7515	+	0.30421	0.8219	+
$\Delta GDP_t \longrightarrow \Delta\dot{I}MP_t$	1.76402	0.2007	+	1.17161	0.3349	+	3.39735	0.0536	+
$\dot{I}MP_t \longrightarrow GDP_t$	0.33306	0.5706	+	0.44084	0.6511	+	0.11140	0.9519	+
$GDP_t \longrightarrow \dot{I}MP_t$	1.66980	0.2118	+	0.64103	0.5398	+	1.80567	0.1958	+
$EXP_t \longrightarrow GDP_t$	15.8632	0.0008	-	4.06821	0.0373	-	4.97950	0.0162	+
$GDP_t \longrightarrow EXP_t$	3.92486	0.0622	+	1.87128	0.1861	+	2.25703	0.1301	+
$\Delta EXP_t \longrightarrow \Delta GDP_t$	1.80244	0.1961	+	0.63672	0.5427	+	1.988433	0.1702	+
$\Delta GDP_t \longrightarrow \Delta EXP_t$	1.09800	0.3086	+	0.52091	0.6043	+	1.09447	0.3890	+
$TB_t \longrightarrow GDP_t$	7.26578	0.0143	-	1.65012	0.2231	+	1.61385	0.2343	+
$GDP_t \longrightarrow TB_t$	1.48928	0.2373	+	0.61026	0.5554	+	0.64370	0.6005	+
$\Delta TB_t \longrightarrow \Delta GDP_t$	2.70262	0.1175	+	0.93169	0.4155	+	1.96283	0.1735	+
$\Delta GDP_t \longrightarrow \Delta TB_t$	2.20808	0.1546	+	1.84837	0.1916	+	1.49627	0.2655	+
$TT_t \longrightarrow GDP_t$	9.93196	0.0053	-	2.98759	0.0790	+	1.99630	0.1644	+
$GDP_t \longrightarrow TT_t$	5.07445	0.0363	-	1.46365	0.2608	+	1.63969	0.2286	+
$\Delta TT_t \longrightarrow \Delta GDP_t$	0.79257	0.3851	+	0.32858	0.7250	+	0.99805	0.4270	+
$\Delta GDP_t \longrightarrow \Delta TT_t$	0.30966	0.5847	+	0.12278	0.8853	+	0.32955	0.8041	+
$\Delta TT_t \longrightarrow \Delta GDP_t$	0.79257	0.3851	+	0.32858	0.7250	+	0.99805	0.4270	+
$\Delta GDP_t \longrightarrow \Delta TT_t$	0.30966	0.5847	+	0.12278	0.8853	+	0.32955	0.8041	+
$TO_t \longrightarrow \Delta GDP_t$	1.39074	0.2536	+	3.58889	0.0532	+	2.24868	0.1351	+
$\Delta GDP_t \longrightarrow TO_t$	0.51213	0.4834	+	0.53658	0.5956	+	0.38348	0.7668	+
$\dot{I}MP_t \longrightarrow HHRPC_t$	0.39689	0.5388	+	0.59606	0.5678	+	0.47857	0.7060	+
$HHRPC_t \longrightarrow \dot{I}MP_t$	1.09001	0.3142	+	0.57643	0.5780	+	2.46135	0.1372	+
$\Delta\dot{I}MP_t \longrightarrow \Delta HHRPC_t$	0.65065	0.4344	+	0.37064	0.6994	+	0.24759	0.8606	+
$\Delta HHRPC_t \longrightarrow \Delta\dot{I}MP_t$	1.86608	0.1951	+	2.39508	0.1413	+	1.37775	0.3262	+
$EXP_t \longrightarrow HHRPC_t$	14.3008	0.0020	-	3.03262	0.0893	+	2.34646	0.1489	+
$HHRPC_t \longrightarrow EXP_t$	1.02316	0.3289	+	0.11365	0.8936	+	0.48091	0.7046	+
$\Delta EXP_t \longrightarrow \Delta HHRPC_t$	2.70458	0.1240	+	0.92538	0.4278	+	1.15512	0.3919	+
$\Delta HHRPC_t \longrightarrow \Delta EXP_t$	0.00736	0.9329	+	0.59826	0.5683	+	0.63741	0.6144	+
$TB_t \longrightarrow HHRPC_t$	12.5642	0.0032	-	0.22967	0.7985	+	2.07742	0.1817	+
$HHRPC_t \longrightarrow TB_t$	1.36705	0.2618	+	1.93500	0.1905	+	0.33523	0.8005	+
$\Delta TB_t \longrightarrow \Delta HHRPC_t$	2.60223	0.1307	+	0.80982	0.4721	+	0.89748	0.4886	+
$\Delta HHRPC_t \longrightarrow \Delta TB_t$	0.18272	0.6760	+	0.66281	0.5366	+	0.71168	0.5753	+
$TT_t \longrightarrow HHRPC_t$	11.2088	0.0048	-	3.84717	0.0541	+	2.35215	0.1483	+
$HHRPC_t \longrightarrow TT_t$	0.87689	0.3649	+	0.13919	0.8716	+	0.66055	0.5990	+
$\Delta TT_t \longrightarrow \Delta HHRPC_t$	2.58529	0.1319	+	0.95250	0.4182	+	1.35339	0.3327	+
$\Delta HHRPC_t \longrightarrow \Delta TT_t$	0.03120	0.8625	+	0.77888	0.4849	+	0.58683	0.6427	+

Note: Calculated by the authors via the eViews software package

However, the seriousness of such a relationship between these indicators does not justify its causal relationship. Calculations show that according to the Granger test between changes in exports and GDP on the basis of 1, 2 and 3-year lags, there is no causal relationship in both directions, and for Azerbaijan these two indicators are not conditioned (Table 2). It should be noted that at first glance, the steady increase in exports over the past 20 years with the increase in GDP allowed us to draw the wrong conclusion that the main reason for the increase in exports in Azerbaijan is the increase in GDP. Or, conversely, the increase in exports is due to an increase in GDP. However, the Granger test proves

that there is no causal relationship between these two indicators and lag = 1; 2; In the case of 3, the hypothesis H_0 is valid in both directions. *Unlike the one-way causality between the volume of exports and the volume of GDP, there is no causality in the relationship between changes in these indicators. In other words, changes in Azerbaijan's exports do not lead to GDP growth. Also, GDP growth does not lead to changes in exports.*

The linear regression relationship between trade balance and GDP over the last 23 years is quite strong (R^2 =0.69). The F-significance level is $7.64*10^{-7}$. However, to prove that such a strong regression relationship is indeed a cause-and-effect relationship, we must examine the existence of the Granger cause between the time series. Calculations show that for lag = 2 and 3 for TB_t and GDP_t, the Granger test shows no causal relationship between these two indicators (Table 2). The Granger test shows that in the case of lag = 1, there is a one-way, i.e. causal relationship from the trade balance to the volume of GDP. However, if we consider that TB_t and $GDP_t$are not stationary time series, then it is doubtful that such a relationship is true.

There is also a high degree of correlation between GDP and ΔTB_t (R^2 =0.646407; F-significance rate =$6.54*10^{-6}$). However, the seriousness of such a relationship between these indicators does not justify its causal relationship. Calculations show that according to the Granger test between the trade balance and GDP changes on the basis of 1, 2 and 3-year lags, there is no causal relationship in both directions, and for Azerbaijan these two indicators are not conditioned. It should be *noted that although one of the main components in the calculation of GDP on the basis of costs is "net foreign trade", in other words, "trade balance", the Granger test proves that there is no causal relationship between these two indicators and lag = 1; 2; In the case of 3, the hypothesis H_0 is valid in both directions.*

The linear regression relationship between trade turnover and GDP over the last 23 years is quite strong ($R^2 = 0.97$). The F-significance level is $9*10^{-18}$. However, to prove that such a strong regression relationship is indeed a cause-and-effect relationship, we must examine the existence of the Granger cause between the time series. Calculations show that for TT and GDP_tt Lag = 1, the Granger test shows that there is a two-way causal relationship between these two indicators (Table 2). However, in the case of lag = 2 and 3, the Granger test shows that there is no causal relationship between these two indicators in any direction.

There is also a high degree of correlation between ΔGDP and ΔTT_t (R^2 =0.82; F-significance rate =$5.27*10^{-9}$). However, the seriousness of such a relationship between these indicators does not justify its causal relationship. Calculations show that according to the Granger test, there is no causal relationship between trade turnover and GDP change on the basis of 1, 2 and 3-year lags, and for Azerbaijan these two indicators are not conditioned and the hypothesis H_0 is valid in both directions (Table 2).

The correlation between ΔGDP_t and freedom of trade (TF_t) in Azerbaijan is very weak (R^2 =0.001879;F-significance = 0.848085). However, the timing of both indicators is stationary. Taking this into account, if we perform the Granger test on the basis of 1, 2 and 3-year lags between these indicators, we will see that there is no causal relationship in any direction, and for Azerbaijan these two indicators do not condition each other (Table 2).

Calculations show that the correlation between ΔGDP_t and foreign trade vulnerability (TO_t) is also very weak. ($R^2 = 0.135$; F-significance rate = 0.093). Given the stationary nature of the time series of both indicators, if we perform the Granger test on the basis of 1, 2 and 3-year lags, we see that there is no causal relationship between these two indicators lag = 1 and 3, and in these cases the hypothesis $H_0$is valid in both directions (Table 2). However, in the case of Lag = 2, there is a one-way causal relationship, i.e. the change in GDP from the openness of foreign trade $TO_t \longrightarrow \Delta GDP_t$.

According to the results export activity positively effects to the household income per capita. But there is not reverse effect. Granger causality between tradeover and trade balance connected with their export component. The household income per capita has not connected with import activity.

5 Discussion

The findings of the study on the causality effects of export activity on economic growth are in line with the main conclusion widely used in the economic literature, i.e. the investigation also argues that export have a positive effect on economic growth. It should be noted that in some studies, such as Ugur [1] *(*in Turkey case), Saunders [19], Malhotra and Meenu [7], as well as Mishra [10] *(*in India case) had bidirection cause-and-effect between import growth and economic growth. A study by Malhotra and Meenu [7], Mishra [10], Bader [2], Bakari and Mabrouki [3] also notes the positive effects of imports on economic growth. However, our study concludes that there is no causality relationship between imports and economic growth in Azerbaijan.

There is need to investigate the reasons of this in detail.

6 Conclution

Thus, the Granger test examines that the cause-and-effect between GDP (and its annual change) and foreign trade indicators , including imports, exports, trade balance, trade turnover (and their annual changing) , are very weak. Only in Lag=1 the export has pozitiv influence to GDP that is was expected. Via export the trade turnover and trade balance also have pozitiv impact on GDP. But there is not cause-and-effect relationship between annual changing of these indicators, instead of the fact that there are strong regrations between foreign trade indicators and GDP and its annual changing. There is Granger cause-and-effect between export valume and household revenues per capita only in lag=1.

References:

[1] Ahmet Uğur, Import and Economic Growth in Turkey: Evidence from Multivariate VAR Analysis. Journal of Economics and Business. Vol. XI – 2008, No 1 & No 2

[2] Bader S.S. Hamdan "The Effect of Exports and Imports on Economic Growth in the Arab Countries: A Panel Data Approach". Journal of Economics Bibliography. 2016 Vol.3. Issue.1.

[3] Bakari, Sayef and Mabrouki, Mohamed, The Relationship among Exports, Imports and Economic Growth in Turkey. MPRA 2017 Jan. Paper No. 76044, posted 07 https://mpra.ub.uni-muenchen.de/76044/

[4] Capolupo Rosa & Celi Giuseppe, Openness and economic growth: a comparative study of alternative trading regimes. Économie internationale, 2008, 116, p. 5-36

[5] Fannoun Zahra and Hassouneh Islam. The Causal Relationship between Exports, Imports and Economic Growth in Palestine. Journal of Reviews on Global Economics, 2019, 8, 258-268

[6] Gulaliyev M.; Abasova S.; Huseynova Sh.; Azizova R.; Yadigarov T. Assessment of impacts of the state intervention in foreign trade on economic growth. Espacios, Vol. 38 (Nº 47) Year 2017. Page 33

[7] Malhotra, M., & Meenu. Imports—growth relationship in India: Causality analysis. Indian Journal of Economics, 2009 LXXXX(356), 33–46.

[8] Masoud Albiman Md and Suleiman NN. The Relationship among Export, Import, Capital Formation and Economic Growth in Malaysia. Journal of Global Economics. 2016, Volume, 4, Issue 2, 1000186.

[9] Merale Fetahi-Vehapi, Luljeta Sadiku, Mihail Petkovski. Empirical Analysis of the Effects of Trade Openness on Economic Growth: An Evidence for South East European Countries. Procedia Economics and Finance 19, 2015, 17 – 26

[10] Mishra, P. K. The Dynamics of the Relationship between Imports and Economic Growth in India. South Asian Journal of Macroeconomics and Public Finance, 2012, 1(1) 57–79. DOI: 10.1177/227797871200100105

[11] Mohammad Ashraf, Sumaira Rehman, Ahmad Ghazali, Ali Raza, Ammar Asad. İnterdisciplinary journal of contemporary research in business. Institute of Interdisciplinary Business Research, 2011, Vol 3, No 2

[12] Najid Ahmad, Umair Ahmad, Muhammad Farhat Hayat and Muhammad Luqman. Relationship Between Trade Deficit and Economic Growth in Pakistan: An Econometric Investigation. Australian Journal of Basic and Applied Sciences, 2013, 7(7): 963-967.

[13] Peev, E., Mueller, D.C. "Democracy, Economic Freedom and Growth in Transition Economies", Kyklos, 2012, 65(3), 371–407.

[14] Piątek, D., Szarzec, K., Pilc, M. "Economic Freedom, Democracy and Economic Growth: A Causal Investigation in Transition Countries", Post-Communist Economies, 2013, 25(3), 267-288.

[15] Rafiqul, Mohammad Islam and Mohaiminul Haque. The Success of Export and Its Impact on GDP of Bangladesh. International Journal of Investment Management and Financial Innovations. 2018, Vol. 4, No. 1, pp. 9-13.

[16] Rajeh Alragas, P. Murphy, Mamata Parhi, T.K.Mishra. Empirical evidence on the relationship between trade openness and economic growth. Global Journal of Business Research, 2015, Vol. 9, No. 3, pp. 91-96

[17] Razmi, M.J., Refaei, R. "The Effect of Trade Openness and Economic Freedom on Economic Growth: The Case of Middle East and East Asian Countries", International Journal of Economics and Financial Issues, 2013, 3(2), 376-385.

[18] Ruba Abushihab and Thikraiat Soufan Shatha Abdul-Khaliq. The Causal Relationship between Exports and Economic Growth in

Jordan. International Journal of Business and Social Science, 2014, Vol. 5 No. 3; March.

[19] Saunders, Peter J. A time series analysis of the role of imports in India's phenomenal economic growth. Indian Journal of Economics and Business, 2010, 7(1), 101–109.

[20] Shanjida Chowdhury, AfrinaAkter Mishu, Nurul Mohammad Zayed. An Analysis of the Causal Relationship Among Page 2 of Economic Growth, Export and Importin Bangladesh. Int J Fam Busi Manag, 2020, 4(1): 1-5.

[21] Silajdzic Sabina and Mehic Eldin. Trade Openness and Economic Growth: Empirical Evidence from Transition Economies. 2018, http://dx.doi.org/10.5772/intechopen.75812

[22] Squalli Jay and Wilson Kenneth. A New Measure of Trade Openness. The World Economy. 2011. doi: 10.1111/j.1467-9701.2011.01404.x

[23] SSCRA. State Statistical Committee of the Republic of Azerbaijan. 2020. URL: www.stat.gov.az [Last accessed on 2020 May 5].

[24] Syed Tehseen Jawaid. Trade Openness and Economic Growth: A Lesson from Pakistan. Foreign Trade Review, 2014, 49(2) 193–212

[25] Yaya Keho. The impact of trade openness on economic growth: The case of Cote d'Ivoire. Cogent Economics & Finance, 2017, 5:1, 1332820, DOI:10.1080/23322039.2017.1332820

Contribution of individual authors to the creation of a scientific article (ghostwriting policy)

Author Contributions: Data curation, Yegana Alikhanli; Formal analysis, Guliyeva Shafa; Investigation, Mayis Gulaliyev; Methodology, Shahin Bayramov; Resources, Mehpare Orujova.

Creative Commons Attribution License 4.0 (Attribution 4.0 International, CC BY 4.0)