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# THE EXPORT-LED GROWTH HYPOTHESIS FOR AZERBAIJAN

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## ABSTRACT

The aim of this paper is to test the export-led growth hypothesis for the Republic of Azerbaijan. Azerbaijan is an oil-exporting country and the share of oil and oil products in total exports is 94.78 percent in 2009. In this paper, the export-led growth hypothesis is tested for Azerbaijan using cointegration and error correction model techniques for the 1996-2008 period. Long-run and short-run relationship was found between real GDP, and exports and imports. The results fail to find any support for the proposition that exports Granger cause GDP. However, real GDP Granger causes exports. The findings of this study showed that export-led growth hypothesis is not valid for Azerbaijan.

**Keywords:** *Export Led Growth, Azerbaijan*

## THE EXPORT-LED GROWTH HYPOTHESIS FOR AZERBAIJAN

## INTRODUCTION

The relationship between exports and economic growth is one of the broad and recurrent issues in economics. The classical trade theory argues for free trade and adduces that, developments in the export sector positively effects the country's economic growth. Export growth can be an accelerator for output growth directly as a component of aggregate output. An increase in foreign demand for domestic products can cause an overall growth in output via an increase in employment and income in the exportable sector. Greater capacity utilization, efficient resource allocation, utilization of economies of scale and inducing technological improvement because of

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foreign market competition are the ways through which exports indirectly stimulate economic growth. An increase in exports may also provide foreign exchange which increases imports of productive intermediate imports and hence result in the growth of output (Jung and Marshall, 1985).

Recent studies have shown that besides exports, imports are also very important to economic growth. In many developing countries, significant export growth is associated with rapid import growth because imports provide inputs employed in the export sector (Awokuse, 2008). Importation of intermediate inputs also provides domestic firms access to foreign technology and knowledge and may enhance productivity and economic growth in the long-run.

There is a large literature on the empirical investigation of the export-led growth hypothesis, however the findings of the studies are contradictory. The early studies in the literature used cross-country correlation coefficients to test the export-led growth hypothesis. These studies explained economic growth in terms of export expansion alone, in a two-variable framework. The findings of these studies generally support the export-led growth hypothesis for the analyzed countries; positive and high correlation coefficients are calculated for economic growth and exports (Kravis, 1970; Balassa, 1978).

The second group of studies involves ordinary least squares (OLS) based-regression applications. In most of these studies exports, capital and labor stocks of the countries are included among independent variables. The majority of these studies analyzed developing countries and used OLS results to demonstrate the advantages of the export promotion strategy in comparison with the import substitution strategy (Williamson, 1978; Ram, 1987; Greenaway & Sapsford, 1994; Fosu, 1996).

The third group of studies applied various time series techniques to examine the relationship between economic growth and exports. Most of these studies were published after 1990s and analyzed export-growth nexus for both developed and developing countries. Although almost all cross-sectional analyses find support for relationship between exports and growth, the findings of the time series studies are not uniform. While some studies found support for ELG hypothesis (e.g. Ghatak, Milner & Utkulu, 1997; Vohra, 2001; Abou-Stait, 2005; Kagnew, 2007; Kasman & Emirhan, 2007; Bilgin & Şahbaz, 2009), some others could not find any support (e.g. Abhayartna, 1996; Yiğidim & Köse, 1997; Sharma & Panagiotidis, 2003; Taban & Aktar, 2005; Awokuse, 2008).

The main purpose of this study is to test the export-led growth hypothesis in the case of Azerbaijan for the period 1996-2008. The contribution of this study to existing literature is that it is the first work

examining the causality relationship between real GDP, and exports and imports for Azerbaijan. Since Azerbaijan is a relatively new country, the literature on economic growth is insufficient. The main reason of this insufficiency is the lack of data for many economic indicators, especially for the early years of independence. The aim of this study is to fill the gap in the literature, at least partially, by analyzing the economic growth-international trade nexus in Azerbaijan.

This paper is organized as follows: In the following section a brief overview of the Azerbaijan economy is provided. The third section discusses the econometric methodology. Section four describes the data set and outlines the results obtained. Final section concludes.

## AN OVERVIEW OF THE AZERBAIJAN ECONOMY

Azerbaijan is a country located on the Caspian Sea with a population about 9 million. Azerbaijan gained its independence in 1991. Azerbaijan's first years of independence can be characterized by transition to a market economy and economic recession: From 1991 to 1996, the size of the economy decreased by 57.2 percent and the first positive growth rates were achieved in 1996. After 1996, growth rates started to accelerate and recently real gross domestic product (GDP) expanded by 10.8 percent in 2008 and 9.3 percent in 2009.

Azerbaijan is usually defined as an *energy-rich* country because of its rich oil and natural gas resources. After gaining independence, Azerbaijan started to sign contracts with Western countries about oil production and transportation of oil. The first contract was signed in 1994 with a consortium of 11 international oil companies, which is called as the Contract of the Century. Since then Azerbaijan State Oil Company (SOCAR) has signed 27 other production sharing agreements with international oil companies. After signing these agreements oil production increased in Azerbaijan. Growing oil production is one of the reasons of the accelerated growth rates in Azerbaijan after 1996. Other possible reasons of the GDP growth are high international oil prices and rising inflows of foreign direct investments in energy-sector.

Increased oil production and international agreements also affected the foreign trade structure of Azerbaijan. Exports of oil and the share of oil in total exports increased considerably. Figure 1 shows the share of oil and oil products in total exports of Azerbaijan. It can be seen that the proportion of oil to total exports has increased from 62.2 percent in 1996 to 94.78 percent in 2009.

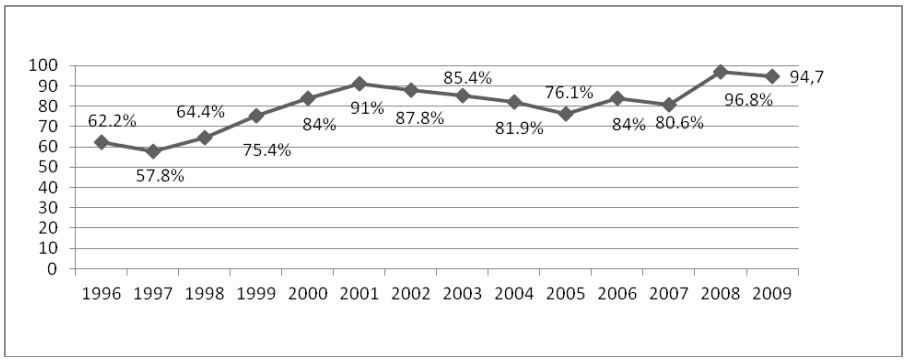


**Figure 1: Share of Oil Products in Total Exports of Azerbaijan (1996-2009)**

**Source:** The State Statistical Committee of the Republic of Azerbaijan Yearbooks.

Because of the high share of oil products in total exports, Azerbaijan might have a danger of facing Dutch Disease. Dutch Disease or syndrome occurs when large inflows of natural resource (oil) revenues appreciates a country's exchange rate, causing a loss of competitiveness in the non-oil sector and making public services entangled with business interests. In order to prevent Dutch Disease, priority must be given to the development of non-oil sectors and manufactured industries in Azerbaijan.

An oil-export boom also leads to increased levels of consumption which is satisfied through higher levels of imports. Table 1 presents the commodity structure of Azerbaijan's imports in 2008. It can be followed from the table that the highest share in imports is machinery and mechanical appliances, followed by vehicles, aircraft, vessels and associated transport equipment. Sustainability of these imports, and welfare of nation, depends on country's long-term export performance. Therefore analysis of the relationship between foreign trade and GDP is particularly important for an oil-exporting country.

**Table 1: Commodity Structure of Azerbaijan's Imports (%) (2008)**

| Product Groups | Share in Total Imports |
|---|---|
| 1. Live animals, animal products | 11.4 |
| 2. Beverages and tobacco products | 3.2 |
| 3. Mineral products | 4.7 |
| 4. Vegetables products | 0.1 |
| 5. Chemical products | 8.3 |
| 6. Machinery and mechanical appliances | 30.8 |
| 7. Vehicles, aircraft, vessels and associated transport equipment | 17.0 |

**Source:** The State Statistical Committee of the Republic of Azerbaijan Yearbook: 2005-2009.

## ECONOMETRIC METHODOLOGY

The methodology used in this study involves three steps. First for determining the order of integration of variables, the unit root tests are implemented. For this purpose, Augmented Dickey-Fuller (ADF), Phillips-Perron (PP) and Kwiatkowski, Phillips, Schmidt and Shin (KPSS) tests are implied.

After determining the order of integration of variables, the second step involves the tests of cointegration for the variables that are integrated of the same order. In this study the cointegration test developed by Engle and Granger (1987) is used. One of the main advantages of this method is that the long-run equilibrium relationship can be modelled by directly involving the levels of the variables. In the first step all dynamics are ignored and the long-run equation is estimated:

$$Y_t = \beta X_t + u_t \qquad (1)$$

In order for $Y_t$ and $X_t$ to be cointegrated, the estimated residuals from equation (1) must be stationary. In this case the cointegration regression is said to be sufficient. As the variables are nonstationary, we can face the spurious regression problem. Therefore, $R^2$ and Durbin-Watson (DW) test statistic must be carefully inspected. If all indicators are satisfactory, we can proceed to the next step.

The next step includes estimating of a short-run model. In the short-run there may be disequilibrium. Hence, we can treat the error term as the

"equilibrium error" (Gujarati, 2003:824). And we can use this error term to tie the short-run behavior of GDP to its long-run value. The error correction mechanism (ECM) first used by Sargan (1984) and later popularized by Engle and Granger corrects for disequilibrium. An important theorem, known as Granger Representation Theorem, states that if two variables Y and X are cointegrated, then the relationship between the two can be expressed as Error Correction Mechanism (ECM) (Engle & Granger, 1987: 255). Simply, we can write ECM for equation (1) as follows:

$$\Delta Y_t = \alpha_0 + \alpha_1 \Delta X_t + \alpha_2 u_{t-1} + \varepsilon_t \qquad (2)$$

where Δ denotes the first difference, $\varepsilon_t$ is an error term, $u_{t-1}$ is the lagged value of the error term from cointegration regression (1).

According to the Granger Representation Theorem $\alpha_2$ is expected to be negative and statistically significant. The absolute value of $\alpha_2$ shows how quickly the equilibrium is restored. Also $\alpha_2$ should take a value between -1 and 0, otherwise the process is explosive (Ghatak, Milner & Utkulu, 1997).

For obtaining the best error correction model for our analysis, in this study Hendry's (1995) general-to-specific approach is used. In our investigation, for estimating short-run dynamics we will apply following general-to-specific model:

$$\Delta Y_t = \hat{a}_0 + \sum_{i=1}^{n} \hat{a}_{1i} \ddot{A} Y_{t-i} + \sum_{i=0}^{n} \hat{a}_{2i} \ddot{A} X_{t-i} + \hat{a}_3 EC_{t-1} + \mathring{a}_t \qquad (3)$$

The last step of the paper is to test causality between variables. In this study Granger (1969) causality test is applied. The Granger causality test was originally suggested by Granger (1969) and modification was suggested by Sargent (1976). The Granger test assumes that information related to the prediction of the variables, Y and X, is included only in the time series data on these variables. The test involves estimation of following regressions:

$$Y_t = \sum_{i=1}^{n} \acute{a}_i X_{t-i} + \sum_{i=1}^{n} \hat{a}_j Y_{t-j} + u_{1t} \qquad (4)$$

$$X_t = \sum_{i=1}^{n} \ddot{e}_i X_{t-i} + \sum_{i=0}^{n} \ddot{a}_j Y_{t-j} + u_{2t} \qquad (5)$$

Regression (4) presumes that current value of Y is related with the past values of X; and (5) postulates that current value of X is related with the past values of Y.

The first step of the Granger causality test is establishing of hypotheses:

$H_0$: $\sum \alpha_i = 0$: X does not Granger cause Y

$H_1$: $\sum \alpha_i \neq 0$: X Granger causes Y

For testing null hypothesis, we apply *F* test:

$$F = \frac{(RSS_R - RSS_{UR}/m)}{RSS_{UR}/(n-k)} \quad (6)$$

where $RSS_R$ is restricted residual sum of squares, obtained by running regression with including all lagged Y, but without including X; $RSS_{UR}$ is unrestricted residual sum of squares, obtained by running regression including lagged X; *m* is number of restrictions; *k* is number of parameters in the unrestricted regression; *n* is number of observations.

The final step is the comparison of the computed *F* value with the critical *F* value. If computed F value exceeds the critical *F* value at the significance level (1%, 5%, 10%) then we reject $H_0$. Rejection of the null hypothesis indicates causality relationship between variables.

Since the Granger causality tests are very sensitive to the lag length selection, Akaike information criterion (AIC) will be used in this study (Kasman & Emirhan, 2007). For choosing the lag length, we will start with one lag and increase them by AIC. The lag of the model with the least AIC value will be our model's lag length.

Before the development of the error correction model, the standard Granger test had been using for testing causality between two variables. According to Granger, if there is cointegration between two variables, then the advantages of the standard Granger causality test are not valid (Bahmani-Oskooee & Alse, 1993). Therefore, if there is cointegration between variables, then error correction term, obtained from long-run equation, is included to standard Granger test. Otherwise, standard Granger test is implied without including error correction term (Giles D., Giles J. & McCann, 1993: 201). So, causality relationship is tested using error correction model. The Granger error correction model can be formulated as follows:

$$\ddot{A}Y_t = \acute{a}_1 + \sum_{i=1}^{n} \hat{a}_{1i}\ddot{A}Y_{t-i} + \sum_{j=1}^{n} \ddot{e}_{1i}\ddot{A}X_{t-j} + \ddot{a}_1 EC_{t-1} + \mathring{a}_{1t} \quad (7)$$

$$\ddot{A}X_t = \acute{a}_2 + \sum_{i=1}^{n} \hat{a}_{2i}\ddot{A}X_{t-i} + \sum_{j=1}^{n} \ddot{e}_{2i}\ddot{A}Y_{t-j} + \ddot{a}_2 EC'_{t-1} + \mathring{a}_{2t} \quad (8)$$

In these equations $EC_{t-1}$ and $EC'_{t-1}$ are stationary error terms, obtained from equations (7) and (8) respectively; and are called error correction terms. Δ indicates the first difference.

In Granger error correction model, we test whether estimated coefficients of lagged values of all variables are significant or not by using F test (Bahmani-Oskooee, Mohtadi & Shabsigh, 1991).

## EMPIRICAL FINDINGS

### Data

Data used in this study are quarterly and include the time period from the first quarter of 1996 to the last quarter of 2008. The variables that are used in the study are: Real Gross Domestic Product (GDP), exports and imports. All the variables are taken in their natural logarithms to avoid the problems of heteroscedasticity and denoted as *lgdp* (real GDP), *lexp* (exports) and *limp* (imports). Real GDP data are collected from the Central Bank of the Republic of Azerbaijan and for aggregation purposes, they are converted to a common currency, US dollar. The data for the explanatory variables (*lexp*, *limp*) are taken from the State Statistical Committee of the Republic of Azerbaijan.

### Unit Root Tests

First unit roots using the Augmented Dickey-Fuller (ADF) (1979), Phillips- Perron (PP) (1988) and Kwiatkowski, Phillips, Schmidt and Shin (KPSS) (1992) tests are calculated. The results are reported in Table 2.

According to the unit root tests, we cannot reject $H_0$, and all variables are nonstationary in their levels. After taking the first differences for all variables, we reject the null hypothesis. Test results show that time series are stationary from the first order *(I(1)).*

**Table 2: Unit Root Tests**

| | | *lgdp* | *lexp* | *limp* |
|---|---|---|---|---|
| ADF | Level | -1.133 (4) | -0.840 (3) | 0.734 (3) |
| | 1st difference | -2.307*** (3) | -6.857* (2) | -6.940* (2) |
| PP | Level | -0.033 (1) | -2.002 (1) | 0.418 (3) |
| | 1st difference | -21.641* (1) | -17.048* (1) | -9.920* (2) |
| KPPS | Level | 0.950* (5) | 0.913* (5) | 0.936* (5) |
| | 1st difference | 0.121 (5) | 0.101 (5) | 0.305 (4) |

***Note:*** *, ** and *** denote rejection of null hypothesis at 1, 5 and 10%, respectively. The numbers in parenthesis are optimum number of lags determined according to AIC; critical values are based on MacKinnon (1991). For PP and KPSS tests, numbers in parenthesis are the truncation lag determined according to Bartlett Kernel.

## Cointegration

Drawing upon the empirical literature, our standard long-run relationship between real GDP and exports and between real GPD and imports are specified as follows:

$$lgdp_t = \beta_0 + \beta_1 lexp_t + \varepsilon_t \quad (9)$$

$$lgdp_t = \beta_0 + \beta_1 lipm_t + \varepsilon_t \quad (10)$$

After showing that all variables are integrated of order one, we can proceed to the cointegration tests. By using cointegration analysis we will test whether there is a long-run relationship between *lgdp* and *lexp*, *lgdp* and *limp*.

It can be seen from Table 3 that coefficients of both regressions have positive signs and are statistically significant. In other words, increases in exports and imports will raise real GDP. Thus, our results do not contradict with the theory.

**Table 3: The ADF Cointegration Test Results**

| Cointegration equation | Const. term | Coefficient | $R^2$ | DW | ADF statistics |
|---|---|---|---|---|---|
| $lgdp_t = \beta_0 + \beta_1 lexp_t + \varepsilon_t$ | 3.963 (18.476) | 0.554 (16.305) | 0.841 | 1.529 | -5.260* |
| $lgdp_t = \beta_0 + \beta_1 lipm_t + \varepsilon_t$ | 3.124 (17.781) | 0.686 (24.654) | 0.923 | 1.626 | -2.827** |

***Note:*** The numbers in parenthesis are t-statistics. * and ** denote rejection of null hypothesis at 1% and 5%, respectively.

Also error terms obtained from the cointegration regressions are stationary. For visibility graphs of series relating to error terms are shown below. RESID01 shows error term relating to the equation $lgdp_t = \beta_0 + \beta_1 lexp_t + \varepsilon_t$; and RESID02 shows error term relating to the equation $lgdp_t = \beta_0 + \beta_1 lipm_t + \varepsilon_t$.

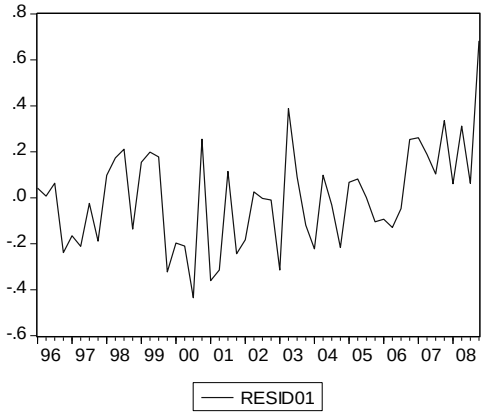


**Figure 2: Variation of RESID01**

Stationarity of the both error terms, obtained from cointegration equations, show that there is a long-run relation between real GDP and exports and between real GDP and imports. According to regression results, 1 percent increase in exports will increase real GDP by 0.554 percent; 1 percent increase in imports will increase real GDP by 0.686 percent.

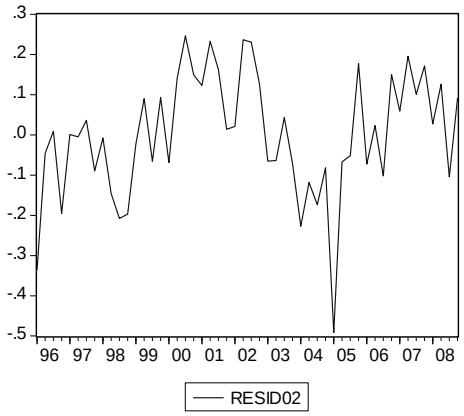


**Figure 3: Variation of RESID02**

According to Granger Representation Theorem, if there is cointegration between variables, then error correction mechanism must work. That's why in the next step this mechanism is examined. The findings reveal that real GDP and exports (imports) are cointegrated: that is, there is a long run, or equilibrium, relationship between them. Of course, in the short-run there may be disequilibrium. Therefore, one can treat the error term as the "equilibrium error" (Gujarati, 2003: 824). And we can use this error term to tie the short-run behavior of GDP to its long-run value. The short-run dynamics will be examined by employing an error-correction model.

**Error Correction Model**

For obtaining the best error correction model for our analysis, we used Hendry's (1995) general-to-specific approach. In this way, we first include four lags[1] of the first-difference of all variables in our model, constant term and one lagged error-correction term. In the next step, insignificant parameters were dropped and remaining parameters can show significant effects of used parameters to real GDP. Our error correction models, employed for determining short-run dynamics, will be:

[1] Since the equation was generated by using quarterly data, four lags for each variable were included in the error correction model.

$$\Delta lgdp = \hat{a}_0 + \sum_{i=1}^{n} \beta_{1i} \Delta \, gdp_{t-i} + \sum_{i=0}^{n} \beta_{2i} \Delta \, exp_{t-i} + \beta_3 EC_{t-1} + \varepsilon_t \quad (11)$$

$$\Delta lgdp = \hat{a}_0 + \sum_{i=1}^{n} \beta_{1i} \Delta \, gdp_{t-i} + \sum_{i=0}^{n} \beta_{2i} \Delta \, imp_{t-i} + \beta_3 EC_{t-1} + \varepsilon_t \quad (12)$$

After applying Hendry's General-to-specific approach, we reached the following parsimonious models:

**Table 4: Estimated Error Correction Model for *lgdp* and *lexp***

| lag | EC(-1) | *Δlgdp* | *Δlexp* | Summary Statistics |
|---|---|---|---|---|
| 1 | -0.281 (-2.66) | | 0.179 (4.095) | $R^2$=0.470 |
| 2 | | | | Adjusted $R^2$=0.434 |
| 3 | | -0.554 (-4.976) | | DW=2.027 |

***Note:*** Figures in parentheses are the t-statistics. The critical values at 10% and 5% are 1.29 and 1.66 respectively (1-tail).

**Table 5: Estimated Error Correction Model for *lgdp* and *limp***

| lag | EC(-1) | *Δlgdp* | *Δlimp* | Summary Statistics |
|---|---|---|---|---|
| 0 | | | 0.112 (2.975) | $R^2$=0.950 |
| 1 | -0.135 (-2.863) | | -0.091 (-2.696) | Adjusted $R^2$=0.944 |
| 2 | | | | DW=1.976 |
| 3 | | -0.120 (-2.849) | | |
| 4 | | 0.837 (15.997) | | |

***Note:*** Figures in parentheses are the t-statistics. The critical values at 10% and 5% are 1.29 and 1.66 respectively.

The coefficients of the error correction terms, estimated for both models, are statistically significant and have correct signs, confirming the evidence for cointegration of the variables in the long-run model established earlier. Coefficient of the error term, estimated for the first model is -0.28, and for the second model it is -0.135. These results indicate that the adjustment of the real GDP to changes in the independent variable may take about 3.5 quarters in Azerbaijan, while using exports as a regressor; however it takes 7.3 quarters while using imports as a regressor. It means that, about 28 percent of the disequilibrium will be adjusted after one period providing approximation to long-run equilibrium for the first model. And

about 13 percent of the disequilibrium will be adjusted after one period for the second model.

The signs of the coefficients are as expected: Short-run changes in exports and imports have positive impact on short-run changes in real GDP. The short run coefficients, for both models are much smaller than their long run counterparts. The significant positive coefficients of real GDP, exports and imports are reconfirmed in both regressions.

Finally, it can be concluded that exports and imports have positive short-run effects on real GDP. The evidence from our error-correction models and from long-run models shows that both long-run and short-run dynamics are significant. Therefore, our findings support validness of an equilibrium relationship between the dependent and independent variables in each cointegration equations.

**Causality Tests**

Another aim of our study is to examine whether there is a causal relationship between the variables. If there is a cointegration vector between economic growth and exports, there is causality among these variables at least in one direction (Granger, 1986). Hence, Granger causality tests can be used to examine the nature of this relationship. Granger (1986) and Engle and Granger (1987) supply a test of causality, which takes into account the information, provided by the cointegrated properties of variables. The model can be stated as an error correction model as follows:

$$\Delta lgdp = \acute{a}_1 + lagged(\Delta lgdp, \Delta lexp) + \hat{a}_1 EC_{t-1} + \mathring{a}_1 \quad (13)$$

$$\Delta lexp = \acute{a}_2 + lagged(\Delta lgdp, \Delta lexp) + \hat{a}_2 EC_{t-1} + \mathring{a}_2 \quad (14)$$

$$\Delta lgdp = \acute{a}_3 + lagged(\Delta lgdp, \Delta limp) + \hat{a}_3 EC_{t-1} + \mathring{a}_3 \quad (15)$$

$$\Delta limp = \acute{a}_4 + lagged(\Delta lgdp, \Delta limp) + \hat{a}_4 EC_{t-1} + \mathring{a}_4 \quad (16)$$

where, *lgdp*, *lexp*, and *limp* denote real GDP, exports and imports, respectively. $\beta_i EC_{t-1}$ is one lagged error-correction term, reflecting the long-run equilibrium relationship among variables. From Models 13-16, the short-run dynamics is provided by the lagged values of the difference terms.

For determining lag lengths, the models, created by one, two, three and four lagged series were generated. After that, the best lag length was

determined according to the Akaiki Information Criteria (AIC). The lag length of the model with the smaller AIC, will be the model's lag number. We found two lags for exports and real GDP, one lag for imports and real GDP. Table 6 and Table 7 show the results of the Granger Causality tests.

**Table 6: The Granger Causality Test for *lgdp* and *lexp***

| Dependent Variable | F-statistics | | t-statistics |
|---|---|---|---|
| | *Δlgdp* | *Δlexp* | *EC* |
| *Δlgdp* | - | 0.142 | -0.800 |
| *Δlexp* | 6.992 | - | -2.001** |

***Note:*** ** indicates significance level at 5%.

**Table 7: Estimated Error Correction Model for *lgdp* and *lexp***

| Dependent Variable | F-statistics | | t-statistics |
|---|---|---|---|
| | *Δlgdp* | *Δlimp* | *EC* |
| *Δlgdp* | - | 4.656 (1.339) | -2.059*** |
| *Δlimp* | 4.010 (3.310) | - | -2.124** |

***Note:*** **,*** indicate significance level at 5% and 10%, respectively.

Table 6 reports results of the causality analysis of real GDP and exports. The error-correction term with Δ*lgdp* is insignificant; causality from exports to GDP does not exist. Hence, exports do not Granger-cause real GDP in the long run. The error correction term with Δ*lexp* is significant. From this, one can conclude that there is a long-term one-way causality between exports and real GDP, the direction being from real GDP to exports. This evidence shows that for Azerbaijan the export-led growth hypothesis is not valid.

It can be seen that there is bidirectional causation between imports and real GDP. From Table 7 we see that error correction terms in both models are significant. These results prove that income and economic growth generated by oil-export boom, lead to a rise in import demand.

The increased inflow of foreign direct investments to the oil sector of Azerbaijan might be the reason the rejection of the export-led growth hypothesis in Azerbaijan. The share of the foreign capital in oil sector is remarkably great. Signing of "Contract of the Century" regarding the production of oil in the Caspian Sea in 1995, and construction of "Baku-Tbilisi-Jeyhan" oil pipeline between 2002-2005, increased the foreign capital flows to the country. In 1994, foreign direct investment to the oil sector was

137 million US dollar; in 2008, this figure increased to 3351 million US dollar. It means 2400 percent increase of the foreign investment inflows to the oil sector. These capital inflows affected the GDP and increased oil production and productivity in this sector. It might be the reason of the causality running from GDP to exports.

## CONCLUSION

In this study, the export-led growth hypothesis was tested for the case for Azerbaijan using cointegration and ECM techniques over the period 1996-2008. In the study, existence of a cointegration relationship and causality between exports, imports and GDP is tested. It is known that most developing countries have identified export-led growth strategy as a key to economic growth and development. Also this strategy has been proposed by the IMF and the World Bank in the context of trade liberalization after 1980s. From this viewpoint to examine exports-GDP linkage for Azerbaijan is important.

In the study, first long-run relationship between real GDP, exports and imports is analyzed; and by using error correction modeling, short-run relationship between these variables is examined. According to the findings of these analyses, long-run and short-run relationships were found between real GDP, and exports and imports.

Second, the causal relationship between the variables is examined. The results reveal that there is bidirectional causality between imports and real GDP. But we fail to find support for the argument that exports Granger cause GDP growth. However, increase in real GDP Granger causes exports. The findings of this study reveal that export-led growth hypothesis is not valid for Azerbaijan.

The share of oil and oil products in total exports is 96 percent in Azerbaijan and consequently, the share of other goods is very low. This export structure is an indication of small-scale production of other goods in Azerbaijan that are expected to compete in world markets. Dependence of exports on oil can make Azerbaijan face the Dutch Syndrome. Therefore, development of non-oil sectors of Azerbaijan must be in focus. Industrialization policies that will focus on production of non-oil products must be implemented for long-run economic growth.

Bringing advanced technology in the country is also closely related to the production of high quality goods that will meet world standards and which in return reduce unemployment. In order to have an efficient trade structure, exports should be diversified and quality of exports should be

increased. To achieve this goal, Azerbaijan must give importance to development of a manufacturing industry.

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