

OPENNESS AND GROWTH: A TIME SERIES ANALYSIS FOR ALBANIA

Arjola Mitaj

'Eqrem Cabej' University, Gjirokaster, Albania

a_mitaj@yahoo.com

Abstract

Given the ongoing debate on trade liberalization and economic growth, this paper will test the importance that trade liberalization reforms have on the economic growth of Albania. The paper includes data in the form of annual time series on GDP, identified with economic growth and different liberalization variables for Albania. The results of explaining economic growth of Albania by variables that directly or indirectly measure trade liberalization are achieved through the use of one factorial model. In relation to economic growth explanation by trade volume it can be said that a positive and somewhat satisfactory relation, given that about 24.7% of the GDP of Albania is explained by the changes in trade volume. While even more important was proved to be the impact of two variables such as the import of machinery and transport vehicles and import of capital goods given that 1% increment in imports of capital goods, increases the GDP by 0.43% (or 0.44% GDP/capita). Results of the model point out that a developing country like Albania, with a low capital stock and comparative advantage in the sector of consumption products, may benefit from integration and trade with developed countries exactly through the importation of capital products.

Keywords: Economic Growth, Trade Liberalization, Granger Causality, Capital Goods, Comparative Advantage, Trade Volume, Albania

INTRODUCTION

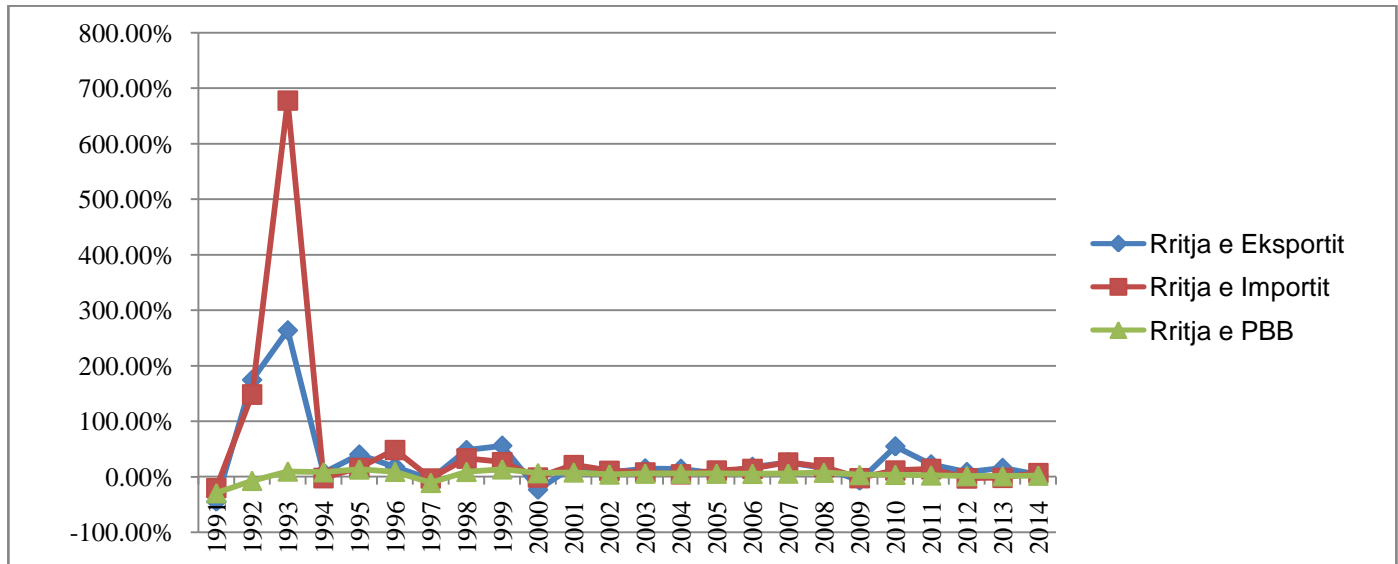
Since the beginning of liberal economic reforms and open-door policy in 1992, Albania's foreign trade has experienced a significant increase coupled with significant changes in its structure. Also the economic growth of the country, identified with the annual change percentage of gross domestic product, has been positive since then. It is also obvious that the equation of a

country's growth includes many variables, in addition to those related to trade liberalization, and the latter is not enough to explain the economic growth. International trade literature puts emphasis on exports; their growth is considered as one of the main contributors to the positive economic performance of a country. The question in Albania's case is different if we take in consideration the fact that over the past 25 years the trade balance of Albania has been negative because imports exceed exports several times, since the country has a small export base and a less diversified export basket. Therefore, special attention in the analysis goes to imports of capital goods and intermediate goods, because the latter are related to investments made in the country and consequently to economic growth. Imports of this product category has stimulated or promoted the development of human capital through learning by doing or learning through exporting as a necessity and also to enable the operation and management of the new production-service capacities insured with imported raw materials.

According to international trade theory, thanks to the liberal trading regimes countries reallocate resources to produce goods they own a comparative advantage and import goods cheaper than could be produced in the country. H-O theorem states that what matters is not the quantity of factors, but the ratio between capital and labor. In this sense, a country is specialized in the production of those products that mostly use country's abundant factor. These forecasts are important in the case of Albania, because we want to determine whether liberalization has stimulated the production of those export products in which Albania has comparative advantage thus increasing gross domestic product. For this reason, it is expected a positive relationship between GDP growth and exports and total trade as well. But to rely solely on exports or trade to identify the extent to which Albania is integrated into international markets, to see how this in turn influences its economic growth, is inadequate.

This is why this paper includes two categories of indicators for measuring trade liberalization. The first one includes those indicators related to trade flows. The second classification includes indicators that directly measure the level of trade restrictions. Thus, indicators or indices related to tariff or non-tariff barriers, or indexes composed of a combination of the two indicators reflect the extent to which trade policy restrictions hinder or help trade integration and the benefits that come from it. Chart 1 shows the performance of GDP, exports and imports in %. It is obvious that GDP growth has been steady, but growth rates after 2009 seem difficult to go to pre-crisis level. While during 1991-2014, both exports and imports mark the highest increase in 1993. It is difficult to discern a pattern of GDP growth induced from exports. This raise a doubt about the importance of exports to the economic development of Albania or in other words, exports has a limited impact on economic growth of Albania in the long run.

Chart 1: Percentage annual increase of exports, imports and GDP, 1991-2014



Source: Author's calculations based on World Bank data

ANALYTICAL FRAMEWORK AND METHODOLOGY

In this paper econometric analysis is used to prove or even to measure the effects of trade openness on economic growth. One-factorial econometric models will also be used to analyze the causal relations between trade openness and economic growth. In economics if an event A occurs before event B, then there is the possibility that A causes B to occur. So in other words, the past events can cause the occurrence of present events. The time series data of the variables explained above will enable the application of Granger causality test and vector autoregressive analysis to see the direction of causality between openness and growth. The literature that deals with the relationship between trade liberalization and economic growth is rich, but there is still an unresolved question of whether liberalization precedes growth or vice versa. For this reason, Granger causality test is used in this study as a supplementary tool to see the nature of the relation liberalization-growth. This technique does not imply an accurate gauge of causality but a lookout to see if the data from previous years of independent variables x , facilitate or improve the forecast of y . In statistical language, this technique aims to measure whether the inclusion of passed information of x reduces the average error quadratic of equation. Based on Richards (2001), Granger's equation has the following form:

$$GDP_t = a + \sum_{i=1}^M \alpha_i GDP_{t-i} + \sum_{i=1}^N \beta_i EX_{t-i} + \mu_t \quad (1)$$

$$EX_t = b + \sum_{i=1}^K \gamma_i EX_{t-i} + \sum_{i=1}^L \lambda_i GDP_{t-i} + \mu_t \quad (2)$$

Where, GDP represents economic growth, measured alternatively by the growth rate of GDP and the growth rate of GDP per capita and EX represents exports, or trade volume.

Besides the traditional indicators such as the ratio of export/GDP, import/GDP and index of trade openness measured as the ratio of trade volume to GDP of the country, important attention is paid to the import of capital goods and imports of machinery and transport vehicles as part of capital goods. Practically, the most convincing mechanism linking trade with growth in developing countries is the import of this product category, since it can be imported cheaply than can be locally manufactured, because developing countries are labor-intensive and limited in capital resources. This argument is valid for Albania. The highest exposure to international trade is a result of imports rather than exports. A considerable part of imports consists on capital goods, an approach to provide the lack of capital stock. Finally the list of variables potentially measuring trade liberalization in Albania includes some indexes calculated by international organizations such as the Heritage Foundation, which publishes the index of Trade Freedom and Price Liberalization Index, Foreign Trade and Exchange Index published by the European Bank for Reconstruction and Development.

ANALYSIS AND RESULTS

The regression model in this study has the following form:

$$Y_t = \beta_0 + \beta_1 X_t \quad (3)$$

Where,

Y_t represents GDP in million dollars, annual GDP growth in %, GDP per capita or annual GDP/capital growth and X_t - each of the variables of trade liberalization explained above.

In the following are presented the results generated by EViews and Gretl program for modeling Albania's economic growth depending on trade volume, imports of capital goods, imports of machinery and transport vehicles and trade openness index. The results are presented in logarithmic models that express the extent of change in % of the dependent variable (in this case economic growth), for 1% change of the independent variable. As noted, the trade volume, and particularly the import of capital goods and imports of machinery and transport vehicles are important variables. Based on the results generated by the program, the following one-factorial models are obtained:

$$\text{Log}(D(Y1)) = 8.656 + 0.224 * \text{Log}(D(X1)) \quad (4)$$

$$\text{Log}(D(Y1)) = 6.16 + 0.43 * \text{Log}(D(X3)) \quad (5)$$

$$\text{Log}(D(Y1)) = 6.22 + 0.42 * \text{Log}(D(X2)) \quad (6)$$

Model 1: GDP Depending on Trade Volume, Logarithmic Form

Dependent Variable: LOG(D(Y1))				
Method: Least Squares				
Sample(adjusted): 1992 2014		Included observations: 18		
Excluded observations: 3 after adjusting endpoints				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	8.656954	0.882336	9.811400	0.0000
LOG(D(X1))	0.223981	0.084453	2.652143	0.0174
R-squared	0.305370	Mean dependent var		10.98350
Adjusted R-squared	0.261956	S.D. dependent var		0.468059
S.E. of regression	0.402107	Akaike info criterion		1.120244
Sum squared resid	2.587046	Schwarz criterion		1.219174
Log likelihood	-8.082197	F-statistic		7.033862
Durbin-Watson stat	2.315892	Prob(F-statistic)		0.017393

Model 2: GDP depending on the Import of Capital Goods, Logarithmic Form

Dependent Variable: LOG(D(Y1))				
Method: Least Squares				
Sample(adjusted): 1998 2013		Included observations: 10		
Excluded observations: 5 after adjusting endpoints				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	6.162255	1.224899	5.030825	0.0010
LOG(D(X3))	0.432898	0.109562	3.951151	0.0042
R-squared	0.661183	Mean dependent var		10.98786
Adjusted R-squared	0.618831	S.D. dependent var		0.479606
S.E. of regression	0.296103	Akaike info criterion		0.580639
Sum squared resid	0.701417	Schwarz criterion		0.641156
Log likelihood	-0.903194	F-statistic		15.61159
Durbin-Watson stat	2.036887	Prob(F-statistic)		0.004229

Model 3: GDP depending on the Import of Machinery and Transport Vehicles, Logarithmic Form

Dependent Variable: LOG(D(Y1))				
Method: Least Squares				
Sample(adjusted): 1995 2013		Included observations: 11		
Excluded observations: 6 after adjusting endpoints				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	6.220247	1.482585	4.195542	0.0023
LOG(D(X2))	0.424973	0.130013	3.268703	0.0097
R-squared	0.542786	Mean dependent var		11.05341
Adjusted R-squared	0.491984	S.D. dependent var		0.504275
S.E. of regression	0.359423	Akaike info criterion		0.954332
Sum squared resid	1.162664	Schwarz criterion		1.026677
Log likelihood	-3.248827	F-statistic		10.68442
Durbin-Watson stat	0.738618	Prob(F-statistic)		0.009703

The above equations show that, if the trade volume is increased by 1%, GDP is expected to grow by 0.22% (as well as GDP/capita). If the import of capital goods is increased by 1%, GDP is expected to grow by 0.43% (GDP/capita is expected to increase by 0.44%). And finally, if the import of machinery and transport vehicles is increased by 1%, GDP is expected to grow by 0.42% (GDP/capita by 0.43%).

Finally the objective of this study was to verify the relationship liberalization-economic growth, so if exports or trade or any other variable associated with liberalization, precedes economic growth in Albania or is the opposite. For this, econometric models that allow testing the additional effects of past values of the liberalization variables after are included past values that identify economic growth in Albania, are built. To test this, autoregressive method is used for GDP and GDP/capita with exports and trade. The null hypothesis would be:

H0: Exports does not Granger cause GDP; Trade does not Granger causes GDP; Trade does not Granger causes GDP/capita.

The following tables show the results on the Granger causality test. As it can be noted the dependent and independent variables are regressed with time lag 2. Tests were made using the value of the difference between two consecutive years of both dependent and independent variable and their annual values.

Model 4: Granger test between GDP and Total Trade

Pairwise Granger Causality Tests			
Sample: 1994 2014		Lags: 2	
Null Hypothesis:	Obs	F-Statistic	Probability
D(X1) does not Granger Cause D(Y1)	19	1.13960	0.34791
D(Y1) does not Granger Cause D(X1)		1.18231	0.33539

Model 5: Granger test between GDP/capita and Total Trade

Pairwise Granger Causality Tests			
Sample: 1994 2014		Lags: 2	
Null Hypothesis:	Obs	F-Statistic	Probability
D(X1) does not Granger Cause D(Y3)	19	1.06229	0.37194
D(Y3) does not Granger Cause D(X1)		2.08914	0.16070

Model 6: Granger test between GDP and Total Trade

Pairwise Granger Causality Tests			
Sample: 1994 2014		Lags: 2	
Null Hypothesis:	Obs	F-Statistic	Probability
X1 does not Granger Cause Y1	20	1.49106	0.25667
Y1 does not Granger Cause X1		2.54570	0.11171

Model 7: Granger test between GDP/capita and Total Trade

Pairwise Granger Causality Tests			
Sample: 1994 2014			
Lags: 2			
Null Hypothesis:	Obs	F-Statistic	Probability
X1 does not Granger Cause Y3	20	1.81985	0.19606
Y3 does not Granger Cause X1		3.07245	0.07615

These results indicate that any of the null hypotheses raised above cannot be rejected. This means that there is no proven evidence regarding trade volume and GDP or GDP/capita. In conclusion it can be said that the GDP or the difference of GDP in the coming years cannot be predicted by GDP or GDP difference and trade volume and neither by the trade volume difference of past years.

CONCLUSIONS

The main objective of this paper was the assessment of trade liberalization impact on economic growth in Albania. For this, were used several potential indicators of trade liberalization since there is not a single indicator to be considered as the best one. Related to the explanation of the Albania's economic growth by trade volume it can be said that a positive and somewhat satisfactory relationship was observed, given that about 24.7% of the GDP of Albania is explained by changes in trade volume. Unexpectedly, the index of trade openness resulted irrelevant in explaining the GDP or GDP/capita.

This result is not consistent with other countries studies that have found strong evidence to explain their growth through trade openness index. Based on comparative advantage theories, international trade leads to a more effective allocation of resources through the import of those products that are impossible or very costly to be produced at home. This justifies why imports are considered as a very important path through which Albania benefits from trade.

In view of this was the use of import penetration rate as a measure of trade liberalization because it shows the extent to which domestic demand is met by imports. This indicator was also insignificant in this analysis, while other studies have found positive evidence in relation to this indicator. An important category of total imports of Albania is capital goods imports. This variable was used as an indicator of physical capital accumulation for Albania considering their import as the main factor linking trade and economic growth because it creates the opportunity to increase productivity and encourages innovation in local production.

Regarding the effect of this variable it can be said that the import of capital goods, as a category that includes the import of machinery and transport vehicles had a higher impact in

explaining the GDP or GDP/capita. The relative effect of these variables was important since 1% increase in capital goods import leads to 0.43% increase of GDP (GDP/capita increased by 0.44%), and 1% increase in the import of machinery and transport vehicles leads to 0.42% increment of GDP (0.43% GDP/capita). The results of the model point out that a developing country like Albania, with a low capital stock and comparative advantage in the sector of consumer products, may benefit from integration and trade with developed countries precisely through the importation of capital goods.

These products are produced with a relatively low cost compared to the cost of producing them domestically, since developed countries own comparative advantages for the production of this product category. Import of capital inputs, gives Albania the opportunity to increase the efficiency of capital accumulation and thus to contribute to higher growth rates. Based on the results of all models, it is important to note that the creation of an internal competitive environment is complementary and goes beyond trade reform and the elimination of barriers. It is not enough just to adopt a foreign oriented policy, that aims gradual elimination of quantitative restrictions through tariffs, but trade policy must operate within efficient macroeconomic policy.

In conclusion it should be noted that the measurement of the liberal trade policies effect is multidimensional. One important issue for further research is the effect that free trade agreements signed by Albania might have on the economic welfare of the country. As Viner (1950) argues, there are two possible effects deriving from a FTA: trade creation and diversion where the latter is considered to be an undesirable effect. As an important agreement for Albania, CEFTA analysis and the above effects represent a scope for further research in the area of international trade.

REFERENCES

- Altman, I. Edward, Gabriele Sabato, and Nicholas Wilson. *The value of qualitative information in SME risk management*. Leed University Business School, UK, 2009.
- Andersen, K, and A Terp. "Perspectives on Strategic Risk Management." *Business School Press*, 2006: 44-45.
- Bierens, Herman J. "The logit model: Estimation, Testing and Interpretation." 2008.
- ACIT Trade Report 2014
- ACIT Trade Report 2002
- Baldwin, Richard E. (1994). Towards an integrated Europe. *Graduate Institute of International Studies*.
- Baldwin. E. R. and Seghezza. E. (1998). Regional Integration and Growth in Developing Nations. *Journal of Economic Integration* 13(3), pages 367-399.
- Barro, J. R. (1991). Economic Growth in a Cross Section of Countries. *The Quarterly Journal of Economics*, Vol. 106, No. 2, pages 407-443

- Bank of Albania, November 2010. Economic Policies in SEE: Design, Performance and Challenges.
- Bhagwati, J.N. 1991. The World Trading System at Risk, Harvester Wheatsheaf, Hemel Hempstead.
- Blomstrom, M., Kokko, A. (1997). The Impact of Foreign Investment on Host Countries: A Review of the Empirical Evidence. *RePEc*
- Chang, R.; Kaltani, L.; Loayza, V.N. (2009). Openness can be good for growth: The role of Policy Complementarities. *Journal of Development Economics* 90, 33-49.
- Damijan, J.; de Sousa, J.; Lamotte, O. (2006). The effect of trade liberalization in South-Eastern European countries. *The wiiw Balkan Observatory, Working Papers* 070
- Dean, M. J.; Desai, S. and Riedel, J. (1994). Trade Policy Reform in Developing Countries since 1985. *World Bank Discussion Papers* 267
- Deardorff, V. A. (1980). The General Validity of the Law of Comparative Advantage. *The Journal of Political Economy*, Vol. 88, No. 5. Pages 941-957.
- Helpman, E. (1987). Imperfect Competition and International Trade: Evidence from Fourteen Industrial Countries. *Journal of the Japanese and International Economies* 1(1): 62-81.
- Helpman, E. and Krugman, P. R. (1985), Market Structure and Foreign Trade: Increasing Returns, Imperfect Competition, and the International Economy, *Cambridge: MIT Press*
- Kaminski, B (1999). The EU factor in the Trade Policies of Central European Countries. *World Bank, Policy Research Paper* 2239
- Kaminski, B, and de la Rocha, M. (2001). Policy-Induced Integration in Balkans: Policy Options and their Assessment", *World Bank*
- Krugman, Paul, 1991, "The Move toward Free Trade Zones," in *Policy Implications of Trade and Currency Zones: A Symposium Sponsored by the Federal Reserve Bank of Kansas City* (Kansas City: Federal Reserve Bank of Kansas City) 5-25.
- Linder, S. B. (1961), An Essay on Trade and Transformation. *New York: John Wiley and Sons.*
- Linnemann, H. (1966). An econometric study of international trade flows. *Amsterdam: North-Holland Pub. Co.*
- Lee J.W. (1994), Capital goods import and long-run growth, *NBER Working Paper*, No 4725
- Michalopolous Constantine, "The Western Balkans in the World Trade – An Essay in Memoriam of Bela Balasa", *World Banks* 2001
- Osmani, M. (2013). Metodot e ekonometrise, me Eviews.
- Romalis, J. (2004), "Factor proportions and the structure of commodity trade," *American Economic Review* 94(1): 67-97.
- Sachs, J. and Warner, A. (1995). Economic Reform and the Process of Global Integration. *Brookings Papers on Economic Activity* No.1.
- WIDER (1991), Economic Liberalization: No Panacea. The Experiences of Latin America and Asia, *Edited by Tariq Banuri*
- Wolf, C.H., (1994). Trade Orientation Measurement and Consequences. *Working Paper, New York University.*