

## **EVALUATION OF ALBANIAN EXPORTS TO EUROPEAN COUNTRIES**

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### **Abstract**

*Trade has brought enormous benefits to the countries and civilizations. It has increased productivity in the dissemination of knowledge and technologies and also has enriched set of choices for consumers. These benefits from trade have encouraged countries not only to strengthen trade ties but also to seek new trade opportunities. Based on World Trade Organization (2014) for the period 1950-2013 the average of export increased by 2.7 percent faster than the real gross domestic product. The only exception was 2001, when trade suffered a considerable decline. As for Albania, based on the World Bank, for the time period 1981-2014, the average of exports has a tendency to decline and then after its trend started to grow.*

*Keywords: Albania, Trade, Gravity Model, Institutional Indices, Imports, Exports, Market Potential, Fixed Effects, Random Effects*

## INTRODUCTION

This study aims at making an assessment of the situation of exports between Albania and the countries of Europe (EUR 31) as well as to assess whether bordering countries, marine connection, places with increasing or decreasing economic situation, trade barriers, government effectiveness, the index of doing business, the index of free trade, the fiscal system, government spending, the index of monetary freedom, the investment index, the index of corruption, the index of property rights and index the financial have affected or not the trade flows of Albania with the countries of EUR 31. To achieve this goal, the paper uses gravity model approach, which nowadays is one of the most used empirical models in the assessment of international trade.

Perhaps the most interesting conclusion comes from the question: "Have you they reached the potential, or is it possible to do it?" The answer varies and depends on trade flows which are taken into account.

## METHODOLOGY

The gravity model for trade is analogous to the law of gravity of Newton in mechanics; the gravity force between two physical bodies is proportional to the weight of each of the bodies divided by the square of the distance between the centers of gravity in meters.

### **Equation 1**

$$F = G \frac{M_1 M_2}{D^2}$$

The trade analogy is as follows: trade flows between the two countries are proportional to the product of any "economic measure" of countries, usually measured by GDP, each of the dimension powers is determined, divided by the distance between the respective countries "the economic gravity center", usually their capitals.

From now on we will refer to the base of the gravity model, the exponents of size and distance has not been determined.

### **Equation 2**

$$M = k Y_M^\beta Y_X^\gamma D^\delta$$

Where M is the flow of the imports from the country M to country X,  $Y_M$  and  $Y_X$  are the GDP of the countries M and X, and D is the geographical distance between the capitals of countries.

The linear form of the model is as follows

### Equation 3

$$\log(M) = \alpha + \beta \log(Y_M) + \gamma \log(Y_X) + \delta \log(D)$$

This basic model, when evaluated, gives relatively good results. However, we know that other factors affect trade levels. In conclusion, we can say that there is a great diversity in the literature on trade and the effect on income, employment and payments balance sheets. The main issue that arises in these theoretical postulates is how trade and economic development can interact.

The Albanian exports in the European countries, exactly 31 countries, will be our focus. The specific countries will be assessed on paper are: Macedonia, Bosnia and Herzegovina, Greece, Serbia, Bulgaria, Croatia, Romania, Slovenia, Hungary, Italy, Malta, Slovakia, Austria, Czech Republic, Turkey, Switzerland, Poland, Cyprus, Germany, Luxembourg, France, Belgium, Netherlands, Denmark, Lithuania, Spain, Sweden, Estonia, Britain, Ireland and Portugaliua (EUR 31). Although Kosovo is an important trade partner for some of the countries it is not included in the estimates of gravity due to insufficient data. This paper uses a data set of 443 obs and 14 years (from 2000 to 2013).

The model will be in the log-log form so that we can take the estimated elasticity coefficient. However, such a logarithmic transformation has two major problems. Variables, which will be taken in the study are presented in the following table where as a dependent variable is the Albanian exports.

Table 1. Study Variables

	Name	Value	Measure Unit	Source
Code of the country	iso_id	3-Jan.		
Year	Year	2000-2013		
Export	I_exp.		Dollar	World bank
GDP partner	I_gdp_part.		Dollar	World bank
GDP Albania	I_gdp_al		Dollar	World bank
Distance	Dist.		Dollar	CEPPII
Border connection	I_border	0/1	Dummy	CEPPII
Maritime connection	I_maritime	0/1	Dummy	CEPPII
Recension	Rec.	0/1	Dummy	autori
Property rights	Index 1	0-100	Percentage	heritage found
Corruption	Index 2	0-100	Percentage	heritage found
Fiscal freedom	Index 3	0-100	Percentage	heritage found

Table 1...

Government expenditure	Index 4	0-100	Percentage	heritage found
Business freedom	Index 5	0-100	Percentage	heritage found
Work freedom	Index6	0-100	Percentage	heritage found
Monetary freedom	Index 7	0-100	Percentage	heritage found
Commercial freedom	Index 8	0-100	Percentage	Heritage found
Investing freedom	Index 9	0-100	Percentage	Heritage found
Financial freedom	Index 10	0-100	Percentage	Heritage found

The gravity model described above is determined to be applied in a OLS cross-section model. To achieve the best result, thus, to better manage the variables that we have taken in this study, we will use the panel data. In this situation, the modified model of exports will be:

#### Equation 4

$$\begin{aligned} \ln(\text{Exporte}_{jt}) = & \beta_0 + \beta_1 \ln(\text{pgdp}_{jt}) + \beta_2 \ln(\text{gdp}_{ot}) + \beta_3 \ln(\text{dist}_j) + \beta_4 \text{rec}_t + \beta_5 \text{kufi}_j + \beta_6 \text{det}_j \\ & + \beta_7 \text{index1}_{jt} + \beta_8 \text{index2}_{jt} + \beta_9 \text{index3}_{jt} + \beta_{10} \text{index4}_{jt} + \beta_{11} \text{index5}_{jt} \\ & + \beta_{12} \text{index6}_{jt} + \beta_{13} \text{index7}_{jt} + \beta_{14} \text{index8}_{jt} + \beta_{15} \text{index9}_{jt} + \beta_{16} \text{index10}_{jt} \\ & + \beta_{17} \text{tarifat}_{jt} \end{aligned}$$

## ANALYSIS AND RESULTS

In this section we will present our econometric results and we will also comment on the importance of the estimated coefficients, we will compare two options and we will choose the optimal to make the evaluation of the gravity equation. We will be able to choose between FE and RE technique by testing these two techniques through Hausman test.

In order to have reliable results we need to make sure that our data do not give us distorted results. If our data have a problem then we must correct this problem.

### Evaluation of Exports

To decide which technique we will use in assessing the Albanian exports versus European partners we must use Hausman test. This test helps to understand whether to use the technique with fixed effects or the technique with random effects. The hypothesis that we build is:

***H<sub>0</sub>***: RE is an appropriate technique

***Alt***: FE is a ppropriate technique

Table 2: Correlated Random Effects - Hausman Test

Equation: Untitled			
Test cross-section random effects			
Test Summary	Chi-Sq. Statistic	Chi-Sq. d.f.	Prob.
Cross-section random	21.775704	14	0.0833

As we see from Table 2 the value Chi-Sq = 21.775704 corresponding to a p-value 0.0833 value which is greater than 0.05, which means that the technique RE is the most appropriate one.

Our final model for exports takes the following form:

$$\begin{aligned} \ln(\text{Exporte}_{jt}) = & \beta_0 + \beta_1 \ln(\text{pgdp}_{jt}) + \beta_2 \ln(\text{gdp}_{ot}) + \beta_3 \ln(\text{dist}_j) + \beta_4 \text{rec}_t + \beta_5 \text{kufi}_j + \beta_6 \text{det}_j \\ & + \beta_7 \text{index1}_{jt} + \beta_8 \text{index2}_{jt} + \beta_9 \text{index3}_{jt} + \beta_{10} \text{index4}_{jt} + \beta_{11} \text{index5}_{jt} \\ & + \beta_{12} \text{index6}_{jt} + \beta_{13} \text{index7}_{jt} + \beta_{14} \text{index8}_{jt} + \beta_{15} \text{index9}_{jt} + \beta_{16} \text{index10}_{jt} \\ & + \beta_{17} \text{tarifat}_{jt} \end{aligned}$$

Where:  $j = 1 \dots 32$  represents the countries  $t = 2000$  to  $2013$

Our results have an explanation of the exports with  $R^2 = 48\%$  and with a p-value  $< 0.05$  in more than half of the variables.

Table 3: Model Testing

<b>Dependent Variable: LN_EX</b>				
<b>Method: Panel EGLS (Cross-section random effects)</b>				
<b>Sample: 2000 2013</b>				
<b>Periods included: 14</b>				
<b>Cross-sections included: 32</b>				
<b>Total panel observations: 406</b>				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
LN_PGDP	1.123538	0.166509	6.747629	0.0000
LN_RGDP	1.137828	0.318266	3.575090	0.0004
LN_DIS	-3.165397	0.655244	-4.830868	0.0000
REC	-0.019587	0.023768	-0.824079	0.4104
TARIFAT	-0.145287	0.084749	-1.714321	0.0494
DET	1.736656	0.506006	3.432085	0.0002
KUFI	1.836051	0.904326	2.030297	0.0430
Liria e biznesit	-0.011438	0.012212	-0.936664	0.3495
Liria financiare	0.009949	0.010463	0.950904	0.3422
Liria fiskale	-0.010926	0.015013	-0.727774	0.4672
Liria nga korrupsioni	0.046234	0.013536	3.415632	0.0002
Shpenzimet e qeverise	0.009490	0.007692	1.233829	0.2180

Table 3...

Liria e investimeve	0.024919	0.009717	2.564429	0.0107
Liria e punes	-0.003939	0.012086	-0.325882	0.7447
Liria monetare	0.122336	0.011684	10.47038	0.0000
E drejta e pronese	-0.021449	0.013330	-1.609081	0.1084
Liria e tregtise	0.036643	0.017575	2.085005	0.0377
C	-23.09561	7.204739	-3.205613	0.0015
R-squared	0.479587	Mean dependent var		4.542180
Adjusted R-squared	0.456786	S.D. dependent var		1.909582
S.E. of regression	1.442456	Sum squared resid		807.3041
F-statistic	21.03306	Durbin-Watson stat		1.340249
Prob(F-statistic)	0.000000			

Our results have an explanation of the exports with  $R^2 = 48\%$  which means that the selected variables explain approximately 50% of the model and with a p-value  $<0:05$ , more than half of variables are important

The model that we have chosen is in its whole statistically important this is evidenced by statistics F which is important with p-value = 0.0000  $<0:05$ .

The presented results in Table 3 show a positive impact on GDP s of the partner countries. To be more specific, if GDP of the partner countries is increased by 1% our exports are increased by 1.1% which means that our exports have an elasticity coefficient greater than one, which implies that our export is very sensitive thus elastic. An increase of 1% of the GDP of the partners is associated with an increase of 1.1% of our exports also a decrease of 1% of GDP of the partners associated with a decline in exports by 1.1%. Also, our export is influenced positively even from the local GDP with a coefficient of 1.13, this implies that an increase of the local GDP by 1% is associated with increased export by 13.1% and the decrease of GDP by 1% is associated with a reduction in exports with 1:13%. Both these variables are statistically important with a p-value which is less than 0.05.

The distance as well as the gravity model predicts that it has a negative impact on our model. With an elasticity coefficient of -3.17 and p-value = 0.00 we conclude that the distance plays a very important role in our exports by giving us the information that our exports are very sensitive to the physical distance between economic centers. The coefficient of elasticity is greater than unitary so elastic. This identifies the fact that our exports are expected to be performed more in the countries that have a smaller distance with Albania.

A fee is a tax (liability) which is placed on a product, the most common fees is the import fee, which is a tax levied on an imported product which in our case is our export. Charges may be imposed for the purpose of protecting the production or for the increase of the income of the

importing country. Theoretically, in both cases fees will negatively affect our exports. With a coefficient of -0.15 and a p-value = 0.049 < 0:05 the fees are an important variable affecting negatively our exports there. A 1% increase in the value of the fee would be accompanied with the decrease of exports by 0.15% or an increase by 100% of the fees associated with the decrease of 15% of our exports.

Theoretically, the use of sea would have a positive impact on the trade flows because besides using rail, road, and air transport also the maritime transport is added which makes the cost of export lower. The coefficient 1.7 with a p-value = 0:00 < 0:05 makes this variable significant affecting positively our exports. As use of maritime transport is a variable that reduces the costs of transport even the border variable has a positive impact on exports due to the fact that the countries that are on the border tend to have more commercial relationship among them because the costs of trade are lower.

On the other hand, many institutional indices are important as: freedom from corruption, monetary freedom, investment freedom, and the commercial freedom.

The freedom from corruption with a p-value = 0.000 < 0:05 is an important variable to explain the exports. Its positive coefficient gives us the information that Albania performs relatively more exports with those countries in which the corruption is not present than in those countries where corruption prevails. This connection is explained by the insecurity and the uncertainty that brings the corruption in the economic relations. Furthermore, corruption reduces the economic vitality by increasing the costs and the shifting of the resources in active unproductive.

Monetary freedom combines a measure of the price stability with the assessment of the price controls. As the inflation and the price controls distort the market and if we have stability without intervention prices then we have the ideal market situation. According to the results presented in Table 1; we notice that monetary freedom is an important variable with a p-value = 0.000 < 0:05 and positively associated with exports. This means that the price stabilitetiti partner countries affect export increase.

Freedom of investment is important with a p-value = 0.0107 < 0:05 and a positive coefficient, which means that our exports will increase by 2% for every 1% increase in economic freedom. This is because there will be no restrictions on the flow of investment capital, individuals and firms will be allowed to move their sources inside and outside the borders without restriction.

Freedom of trade is an index composed of restrictive tariff and non-tariff measures that affect exports. The higher is the evaluation of this index (min 0, max 100) the lower are the tariff and non tariff constraints. This explains the positive value of the index which shows that the

higher the trade freedom (closer to 100) the lower the tariff and non-tariff constraints and the higher will be export to the country with the highest rating. This index is statistically significant with a p-value = 0.0377 < 0:05 and shows that an increase by 1% would bring a change in exports by 3.6%.

### Potential of the Market

Let us focus on the Albanian exports generated by the respective equation and compare them with the real values. In this analysis, states will be divided into three groups, those that are close, relatively close and far.

Figure 1: Geographic grouping of Albania Export

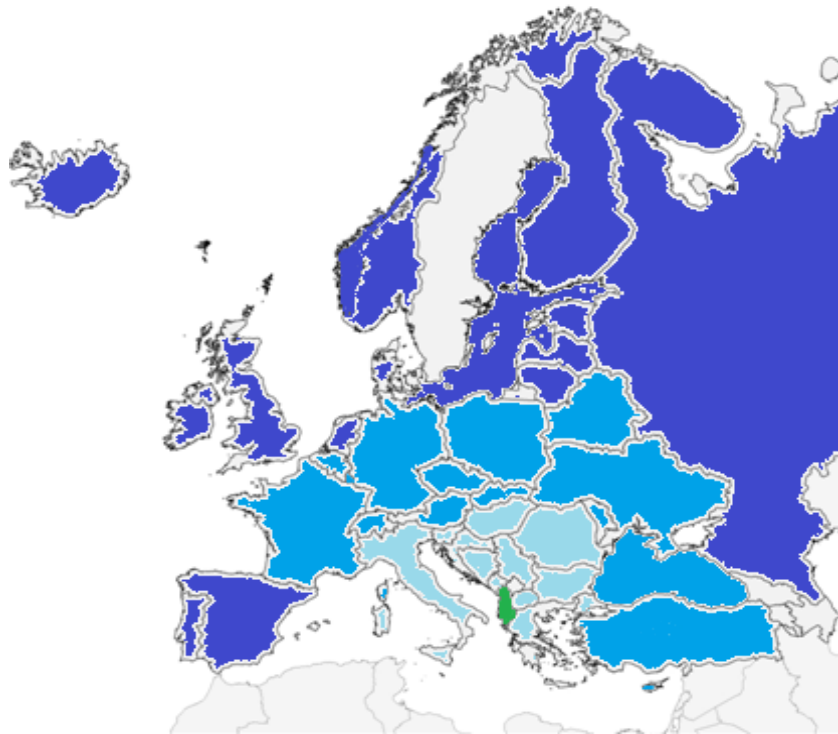


Figure 1 gives visually the three group countries in which Albania exports being categorized according to the distance between economic centers. Those countries that have pale color are considered close and the further the countries are the darker is the color. Appreciating the gravity model for exports to Europe, we continue to evaluate the potential of trade for Albania. In this section of the gravity equation are estimated used to predict trade in Albania with all the countries in our sample. The ratio of commercial potential (P) predicted by the model and the actual trade (A) ie (P / A) is then used to analyze the future direction of trade for Albania. If the



value of  $P / A$  exceed value one or 100%, the implication is in the possible expansion of trade with the country concerned.

Depending on the value of  $P / A$ , Albanian trade partners are divided into two categories: those with whom the potential for trade expansion is foreseen and countries with which Albania have already exceeded its trade potential. The absolute difference between potential and actual level of trade, i. e. the value (AP) is also used to classify countries with the potential to expand trade with Albania. A positive value shows future possibilities of expansion trade, while a negative value shows that Albania has exceeded its potential trade with the partner country.

### Analysis of the First Group

In this analysis are included countries such as Macedonia, Bosnia and Herzegovina, Bulgaria, Croatia, Romania, Slovenia, Hungary and Italy. Table 4 reveals that Croatia and Italy are below the commercial potential which means that these countries have not reached their potential in imports from Albania and suggest us to do export to these countries. Other countries involved are above the potential for the main reason of demand increase, proximity to our markets, the low cost of transport, in some countries with common borders, bilateral trade agreements, etc.

Table 4: Geographic grouping of Albania Export (a)

Destination countries	Potential
Macedonia	100%
Bosnia and Hecegovina	103%
Greece	101%
Bulgaria	102%
Croatia	98%
Romania	102%
Slovenia	102%
Hungary	101%
Italy	99%

### Analysis of the Second Group

This group includes countries such as Malta, Slovakia, Austria, Czech Republic, Turkey, Switzerland, Poland, Cyprus, Germany, Luxembourg, France and Belgium. Table 4 reveals that Austria, Cyprus, Czech Republic, France, Germany and Poland, are below the commercial potential this means that these countries have not reached the potential in imports from Albania and they suggest to do exports to these countries. Belgium, Luxembourg, Malta, Slovakia and Switzerland are above the potential. Turkey is a country which is in potential.

Table 5: Geographic grouping of Albania Export (b)

Destination countries	Potential
Austria	97%
Belgium	105%
Cyprus	98%
Czech Republic	97%
france	98%
Germany	98%
Luxembourg	135%
malta	118%
Poland	99%
Slovakia	104%
Switzerland	105%
Turkey	100%

### Analysis of the Third Group

This group includes countries such as Denmark, Estonia, Finland, Ireland, Lithuania, Netherlands, Portugal, Spain, Sweden, and Britain. See that From Table 6 Denmark, Ireland, Sweden and Britain are below the commercial potential that means that these countries have not reached their potential in imports from Albania and suggest us to do exports to these countries. Other countries in this group are above the commercial potential.

Table 6: Geographic grouping of Albania Export (c)

Destination countries	Potential
Denmark	92%
Estonia	145%
Finland	119%
Ireland	97%
Lithuania	136%
Netherlands	103%
Portugal	149%
Spain	101%
Sweden	90%
Great Britain	95%

In the three group-countries which we categorized we see that in the second and third group Albania has not fully exploited its capacity in terms of exports. Therefore, it is suggested that in future Albania needs to focus on this group of countries.

The dataset can also be improved by including data on non-tariff barriers and more specific data on trade logistics. For example, specific indicator for a part, (transit) corridor performance or a route can reveal more for policy prescription. Future research can help in explicitly differentiating between indicator than capture fixed and variable costs of exporting. Estimations involving country groupings can reveal interesting results. Importantly, future studies can focus on country specific research using variants of gravity models.

## CONCLUSIONS

This study attempted to follow the methodology created by Frankel and Romer (1999) for the creation of instruments for predicting exports. The study focuses on Europe because it is important to try to understand the impact of exports in the case of being close to rich western countries.

The study uses interplay of time and distance according to the model created by Feyrer (2009), in order to create variation in distance when there is no physical change, but qualitative changes of trade routes. Although signs of those variables were negative as was expected, the coefficients were constant without significant differences among them. Coefficients found are largely in line with those of the current empirical literature.

From the analysis of the data we see that what matters in our exports are the economic distance, size of the countries (the respective GDP), cause of sea, closeness, taxes, freedom from corruption, freedom of investment, monetary freedom and trade freedom.

Besides the evaluation of the gravity equation, this model is able to predict the commercial potential with a partner in particular. This is done for the three group-partner of Albania who are divided on the basis of economic distance. In the first group 2 of nine countries are below the potential, in this group are included the countries of the region mostly Southeast Europe. In the second and third group are respectively 6 and 4 countries below the potential from a total of 12 and 10 countries for each group.

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