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Foreign direct investment and economic growth in Albania: a co-integration analysis

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Introduction

Albania is a country still in the transition period since the 1990s. It passed from a communist regime to a democratic one by respectively changing its economic structure from a centralized economy to an open and free market economy. With the change of political regime to democracy, capitalism took place and the laissez-faire economy was the primary development, which increased production, competition, investments, management skills of labor, etc. The Albanian economy is increasing year by year, due in part to foreign investment**.** The Albanian economy had advantages compared with other countries of Europe which are suffering the financial crisis. Due to a decrease in imports and fluctuations of the exchange rate, GDP per capita grew each year to reach $ 4,560 in 2011.

The Government has provided supportive economic and fiscal policies to back up direct foreign investment; the latter is very important for Albania. Low tax, subsidies, and supportive legislation are part of the policies to provide and attract foreign investors to Albania, and one of the most important, for instance, is the abatement of fees.

Albania hosts industrial firms, known as the Fason industry, in order to increase the level of employment and to bring incomes to the state. Currently, the Fason industry forms a significant part of the private, non-agricultural sector and represents a major share of total exports. According to data received from the Albanian Fason Chamber, in 2010 the textile and footwear industry accounted for 36% of total exports and involved approx. 540 companies operating throughout the country. In addition, the textile and footwear sector is the only sector in Albania with a positive trade balance where the trade surplus has been increasing continuously over the years.

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Albania, despite being an attractive place for FDIs because of its favorable geographical position, is also attractive because of the many sectors of the Albanian economy which need to be developed. According to a report of the UNITED NATIONS in 2011, the most favorable sectors of the economy in Albania are mining, infrastructure, agribusiness, agriculture, the service sector, telecommunications, energy, roads, greenfield projects and the gas sector.

All these reported sectors have a very important role in GDP growth; seen from the prospective economic view, if these sectors reached the required standards from the EU, Albania would be the most developed country of the region. It is not only the sectors which will be developed, but also the workforce. They will specialize and will be educated in management skills.

Albania still does not provide a skilled workforce. With regard to labor, it is attractive for FDIs because of the low wages, but they need a lot of work for the labor force to specialize and get to know the latest technology that FDIs provide.

Sectors such as mining, telecommunication or infrastructure have attracted many companies from neighboring countries to invest in Albania. Greece has the highest number of FDIs in Albania, starting with AMC (Albanian Mobile Communication), a member of COSMOTE GREECE, to Vodafone Albania, which even though it is an English telecommunications company, it was invested in by Vodafone Greece. The largest investor, with the highest amount invested in a greenfield project, is Titan Cement, from Greece, which announced a second factory in 2011.

Another big investor is Moncada Costruzioni & Energy Group from Italy. The Italian food-store cooperative Conad received a competitor in the retail sector, the French Carrefour. 29% of the greenfield projects come from Italy, 7% from the United States, and 6% each from Greece, Turkey and Italy. In the construction sector, the largest project announced was from Croatia, Hidroelektra Niskogradnja. The mining sector effects 13% of Albanian FDI stock.

The sectors mentioned above are very important to the creation of a supportive environment for the construction of a strong base for the increase of FDIs in Albania.

The relationship between FDI and GDP is very important for developing countries, especially when they are treated as one of the most important contributors in economic growth. How information is used to describe this relationship is essential: what does it depend on? is it efficient? is it worth contributing to?

These questions cannot be answered with only a “yes” or “no”. The explanation and the field it operates in are very wide. FDI inflows in a country such as Albania are vital; they make the biggest part of our GDP, and the government is implementing new strategies to attract them and publishes the best alternatives of the business environment with its facilities.

But if any relationship cannot be proved, then it may not exist, meaning in this case it’s difficult to estimate how much FDI and GDP affect each other.

Literature Review

FDI is widely accepted as an actor of economic growth. It is certainly true that FDI is one of the most effective ways by which developing economies are integrated with the rest of the world, as it provides not only capital but also technology and management know-how necessary for restructuring firms in the host countries (Pradhan, 2006; Borensztein et al., 1998; Chao and Yu, 1994; Grossman and Helpman, 1991; Barro and Sala-I-Martin, 1995).

The positive impact of FDI on economic growth is driven by transferring knowledge and other firm assets (Hermes and Lensink, 2003) relating to productivity improvement or the spillover effects of FDI.

FDI inflow also affects the exchange rate between the host country and the home country, and also with neighboring countries, especially when the two most two used currencies are in a crisis. Until Froot and Stein, the common wisdom was that (expected) changes in the level of the exchange rate would not alter the decision by a firm to invest in a foreign country. Froot and Stein present an imperfect capital markets story for why currency appreciation may actually increase a firm's foreign investment. Imperfect capital markets means that the internal cost of capital is lower than borrowing from external sources. Therefore, an appreciation of the currency leads to increased firm wealth and provides the firm with greater low-cost funds to invest relative to the counterpart firms in the foreign country that experience the devaluation of their currency. Blonigen provides another way in which changes in the exchange rate level may affect inward FDI for a host country. If a firm's FDI is motivated by acquiring assets that are transferable within a firm across many markets without a currency transaction (e.g., firm-specific assets, such as technology, managerial skills, etc.), then an exchange rate appreciation of the foreign currency will lower the price of the asset in that foreign currency, but will not necessarily lower the nominal returns.

What makes an investment "direct" as opposed to other forms of foreign capital is the concept of managerial control over an enterprise in which foreign capital participates. Geographer Roger Hayter argues that FDI comprises activities that are controlled and organized by firms (or groups of firms) outside of the nation in which they are headquartered, and where their principal decision makers are located. In the context of the manufacturing sector, FDI is conventionally thought of in terms of a branch plant or subsidiary company operations that are controlled by parent companies based in another country.

As mentioned by Busse and Groizard (2005), the enormous increase in FDI flows across countries is one the clearest signs of the globalization of the world economy over the past 20 years. Neoclassical models of growth, as well as endogenous growth models, provide the basis for most of the empirical work on the

FDI-growth relationship. The relationship has been explained by studying four main channels:

1) determinants of growth,
2) determinants of FDI,
3) the role of multinational firms in host countries, and
4) the direction of causality between the two variables (Chowdhury, 2011).

Blomstrom, Lipsey and Zejan found that FDI can positively influence growth rates in higher-income developing countries and they interpret this as a result of the technology absorption factor. Borenzstein, De Gregorio and Lee found that the positive growth impact followed the level of human capital stock. They also found that FDI facilitates the expansion of domestic firms through complementarities in production, thereby increasing total investment.

Drabek and Payne (1999) analyzed the situation whereby non-transparency leads to a reduction in Foreign Direct Investment inflows. Bribery, corruption and unstable economic policies lead to non-transparency. The study took foreign direct investment, transparency, inflation, exchange rate, interest rate, opens of trade regime and economic growth as variables. The study used both the ordinary least square method (OLS) and the two-stage-least-squares method (TSLS). The results showed that the degree of non-transparency is an important factor in a country's attractiveness to foreign investors.

Does foreign investment cause economic growth or does higher growth attract foreign investment? Rodrik (2009) argues that much of the correlation between FDI and improved economic performance is a result of reverse causality, where transnational corporations locate to more productive, faster growing and profitable economies. However, a study of Blomstrom, Lipsey and Zejan looking at 78 developing countries, found that this was not the case.

Methodology and Regression Analysis

The data used in the empirical analysis was mainly secondary data collected from the period 1999 to 2012, consisting of quarterly observations for each variable. The real GDP growth and foreign direct investment net inflows as a percent of GDP data were taken from the Bank of Albania.

The Johansen Co-Integration Test was used in the analyses since it best fits the simple regression model and it helps in the identification of a long run relationship among variables. The fundamental estimating equation in linear form is as follows:

$$y = \beta_0 + \beta_1 x_1 + u$$

where:

$y = GDP\_Growth$

$\beta_0 = Intercept$

$\beta_1 = Slope$
$x_1 = FDI\_to\_GDP\_ratio$
$u = Stochastic\ error$

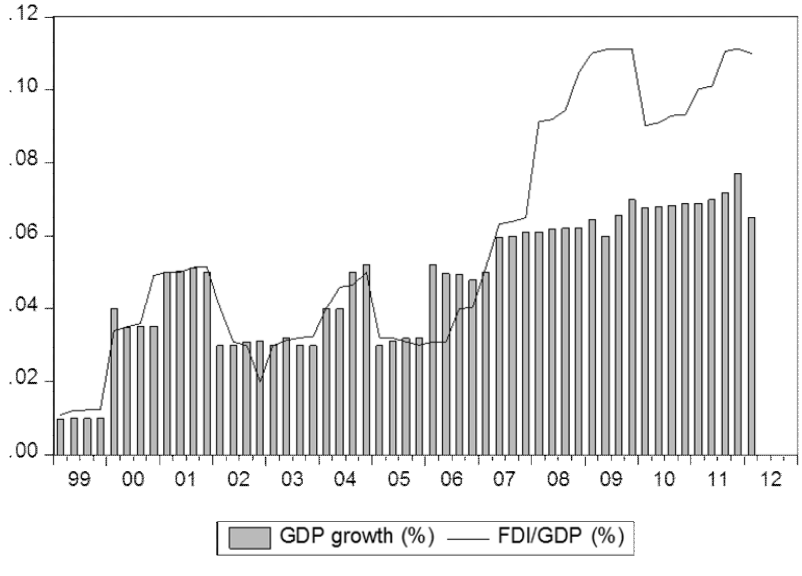
If two or more series are individually integrated (in the time series sense) but some linear combination of them has a lower order of integration, then the series are said to be co integrated.

Testing the normality distribution means testing if the distribution of the variable is symmetric and has a bell-shape and proper tail thickness. To accept that a variable has a normal distribution, skewness must be near 0 and kurtosis must be near 3. Skewness measures the degree and direction of asymmetry while kurtosis measures the heaviness of the tails of distribution.

An augmented Dickey-Fuller unit root test is applied to a series to see if they have a unit root. Having a unit root or being non-stationary means that the series does not fluctuate around a mean. If in the Augmented Dickey-Fuller unit root test at 1%, 5% and 10% level probability is greater than 0.05, it means that the series has a unit root. This series must be converted into stationary ones where at 1%, 5% and 10% the level of probability is lower than 0.05.

The Johansen Co-integration Test is applied to see if the variables are co-integrated with each other in the long run. If, for the trace test, the trace statistic is greater than the critical value, and if for the maximum eigenvalue (max-eigen or p-value) test the p-value is greater than chosen acceptable critical value (usually 0.05), it means that the variables move together in the long run.

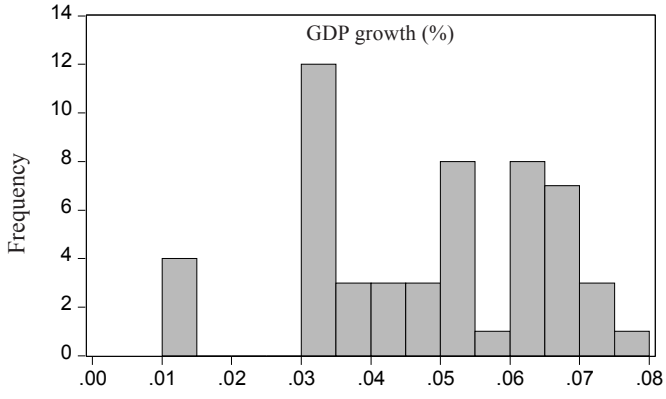
Figure 1. GDP Growth and FDI to GDP ratio



Source: own elaboration.

Figure 1 shows that there exists a relationship between FDI to GDP ratio and GDP growth. From what can be seen, both these variables have increased over recent years. The highest points of FDI/GDP correspond with the highest points of GDP growth while the lowest points of FDI/GDP correspond with the lowest points of GDP growth. This means that FDI/GDP and GDP growth are positively related to each other by following each other's direction of development.

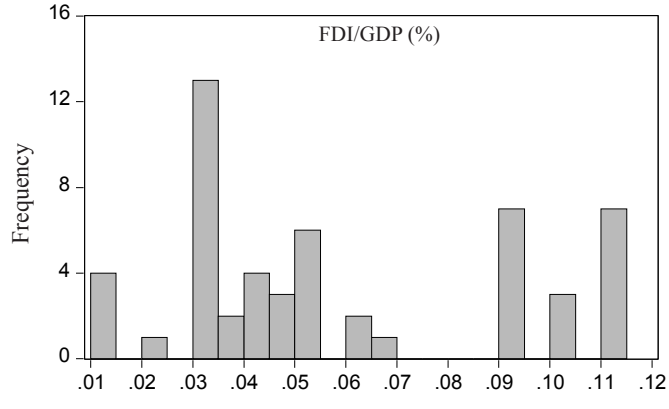
Figure 2. GDP Growth and FDI to GDP ratio, Scatter diagram



Source: own elaboration.

Figure 2 shows that GDP growth has a normal distribution because the value of skewness is near 0, which means that the level of asymmetry is almost 0, proving once again the positive relationship between GDP growth and FDI to GDP ratio, while the value of kurtosis is near 3, meaning that the tail distribution is again near the perfect collinear relation of the two variables.

Figure 3. Histogram and statistics of GDP growth series



Source: own elaboration.

As in the figure 3, the histogram shows that FDI to GDP ratio also has a normal distribution because the value of skewness is near 0 and the value of kurtosis is near 3.

Table 1. Descriptive statistics of GDP growth and FDI to GDP ratio series

	GDP growth	FDI/GDP
Mean	0.047264	0.057975
Median	0.050000	0.049100
Maximum	0.077100	0.111200
Minimum	0.010000	0.011100
Std. Dev.	0.017941	0.032719
Skewness	–0.382326	0.458517
Kurtosis	2.236060	1.757616
Jarque-Bera	2.579992	5.265703
Probability	0.275272	0.071873
Sum	2.505000	3.072700
Sum Sq. Dev.	0.016738	0.055668
Observations	53	53

Source: own elaboration.

According to Table 1, the skewness of GDP growth is lower than FDI to GDP ratio, but both are near zero, meanwhile kurtosis is higher for GDP growth, and lower for FDI to GDP ratio, but still near three, considering that the results are half of the expected value, the perfect result.

Table 2. Estimated equation output

Dependent Variable: GDP growth				
Method: Least Squares				
Date: 06/03/14 Time: 11:01				
Sample: 1999Q1 2012Q1				
Included observations: 53				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.018509	0.002175	8.511276	0.0000
FDI/GDP	0.495992	0.032741	15.14900	0.0000
R-squared	0.818177	Mean dependent var		0.047264

Adjusted R-squared	0.814612	S.D. dependent var	0.017941
S.E. of regression	0.007725	Akaike info criterion	–6.851732
Sum squared resid	0.003043	Schwarz criterion	–6.777381
Log likelihood	183.5709	Hannan-Quinn criter.	–6.823140
F-statistic	229.4921	Durbin-Watson stat	0.659157
Prob(F-statistic)	0.000000		

Source: own elaboration.

The results of Table 2 show that changes in FDI to GDP ratio significantly affect the GDP growth and a 1 percentage point increase of FDI to GDP ratio increases GDP dynamics by about 0.5 percentage point.

$$\text{GDP Growth} = 0.495992 * \text{FDI/GDP} + 0.018509$$

Table 3. Augmented Dickey-Fuller unit root statistic on GDP growth (Lag 1 Fixed)

		t-Statistics	Prob*
Augmented Dickey-Fuller unit root		–2.133278	0.2329
Test critical values	1% level	–3.565430	
	5% level	–2.919952	
	10% level	–2.597905	

Source: own elaboration.

The absolute value of the t-Statistic is lower than the modules of the critical values at all considered significance levels so the null hypothesis cannot be rejected. Moreover, the p-value (Prob*) indicates that the lowest possible statistical significance level at which we could reject the unit root hypothesis would be over 0.23, which unacceptably high.

Table 4. Augmented Dickey-Fuller unit root test on FDI/GDP (Lag 1 Fixed)

		t-Statistics	Prob*
Augmented Dickey-Fuller unit root		–0.804393	0.8093
Test critical values	1% level	–3.565430	
	5% level	–2.919952	
	10% level	–2.597905	

Source: own elaboration.

The results in Table 4 indicate that the null hypothesis about the unit root in the FDI to ration GDP variable cannot be rejected.

Table 5. Johansen Co-Integration Test (Lag 1 to 3 in first differences)

Sample (adjusted): 2000Q1 2012Q1				
Included observations: 49 after adjustments				
Trend assumption: Linear deterministic trend				
Series: GDP growth, FDI/GDP				
Lags interval (in first differences): 1 to 3				
Unrestricted Cointegration Rank Test (Trace)				
Hypothesized		Trace	0.05	
No. of CE(s)	Eigenvalue	Statistic	Critical Value	Prob.**
None*	0.264035	16.79810	15.49471	0.0317
Trace test indicates 1 cointegrating equation at the 0.05 level				
*denotes rejection of the hypothesis at the 0.05 level				
**MacKinnon-Haug-Michelis (1999) p-values				

Source: own elaboration.

From the Johansen Co-integration Test (lag intervals: 1 to 3) it is concluded that for the trace test there exists one co-integration between GDP dynamic and FDI to GDP ratio because the trace statistic is greater than the critical value at 0.05 significance level. The max-eigen value test also shows that there exists one co-integration between GDP dynamic and FDI to GDP ratio because the p-value is greater than the critical value at 0.05 significance level. This results show that GDP dynamic and FDI to GDP ratio co-move in the long run.

Conclusion

In conclusion, this study emphasizes the correlation that exists between FDI to GDP ratio and GDP dynamic, which was proved by the Johansen Co-integration Test in the long-run. This test was proved in lags 1 to 3, in order to reveal the real relationship that exists between the variables. The effect of FDI to GDP ratio on GDP dynamics is significant and contributing to economic growth. The detailed testing supported the theoretical hypothesis beyond the numerical claims, proving that FDI to GDP ratio and GDP dynamic affect one another, ceteris paribus.

In the case of Albania, this correlation works very well compared to other countries of the region that have approximately the same level of development

as Albania. To sum up, Albania has to invest more and more in order to attract foreign direct investments, because they are seen as a promoter of sustainable economic growth in the case of Albania.

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Summary

Theoretical studies strongly support the positive effects of Foreign Direct Investment (FDI) in the Gross Domestic Product (GDP) of the host country through technology transfer, human capital formation, etc. This study aims to examine the real effects of FDI in the economic growth of Albania, since FDI was one of

the first pillars of the economy that the government gave priority to after 1990. This relationship was investigated by using the Co-Integration approach for the quarterly data from 1991 to 2012. The time series data are taken from the Bank of Albania. As expected, the empirical findings of this study reveal the existence of a long run relationship of GDP growth and FDI to GDP ratio. Being strongly correlated to each other, FDI to GDP ratio shows its significant contribution to Albanian economic growth.

Keywords: FDI, Economic Growth, Regression Analysis, Johansen Co-Integration Test

Streszczenie

Bezpośrednie inwestycje zagraniczne i wzrost gospodarczy w Albanii: analiza kointegracji

Analizy teoretyczne postulują pozytywny wpływ bezpośrednich inwestycji zagranicznych (BIZ) na Produkt Krajowy Brutto (PKB) kraju przyjmującego poprzez transfer technologii, rozwój kapitału ludzkiego, itd. Niniejsze opracowanie bada rzeczywiste efekty BIZ na wzrost gospodarczy w Albanii, gdzie BIZ stanowiły jeden z priorytetów i fundamentów polityki gospodarczej po 1990 r. Wykorzystano podejście kointegracyjne do przeanalizowania danych kwartalnych z lat 1991–2012. Dane pochodzą z Banku Albanii. Wykazano istotny związek długookresowy między dynamiką PKB i wskaźnikiem BIZ do PKB. Udowodniono, że przyrost BIZ w stosunku do PKB znacząco stymuluje wzrost gospodarczy w Albanii.

Słowa kluczowe: bezpośrednie inwestycje zagraniczne, wzrost gospodarczy, analiza regresji, test Johansena na kointegrację

JEL: F21, F43, C22