

## **Assessment of the Impact of Economic Factors in Attracting FDI. The Case of Albania**

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**Abstract:** The main objective of this paper is to identify the economic factors with significant impact on foreign direct investments (FDI) in Albania and the parametric measurement of the effect of each of these factors in attracting FDIs. We have developed time series analysis based on quarterly data of the macroeconomic indicators for the period 1993-2015. The dependent variable of the study is the value of FDI inflows and independent variables are: the value of the gross domestic product (GDP), the value of investment with domestic capital, the level of economic openness, revenues from privatization, inflation rate, the number of the employees, and the level of tax burden on businesses. The impact assessment is done through elastic multiple regression analysis. The results of the study indicated that FDIs in Albania are positively and statistically significant correlated with the variables: GDP and the number of employees. A negative relation is identified with the domestic capital investments and the level of tax burden. Other variables have no significant effect on the elasticity of FDIs. The paper provides conclusions for Albanian policy makers in designing policies for attracting FDI as it is based on estimations of FDIs parametric elasticity to the main macroeconomic indicators.

**Keywords:** FDI factors; elasticity assessment analysis; economic indicators

**JEL Classification:** C33; C51

### **1. Introduction**

In the past two decades, FDIs have become a very important issue in developing countries. Many economic theories have identified several aspects in which the FDI inflows can bring benefits to host countries. Many of these theoretical insights have been confirmed in practice in many countries, but many of these theories still remain unproven in the overall conceptual viewpoint and in certain regional countries in particular. The FDIs and their portfolio have been the central focus of the academic and institutional research in the last 2-3 decades. The chronology of the development of these studies can be divided in three stages: (1) the rise of economic theories on FDIs; (2) the concept of doing business outside the countries of origin of investors; and (3) analysis of the effects and factors associated with

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FDIs. The first two stages belong to the time period from the 60's to late 80's, and the third stage started in 90s and continues to this day.

The studies on FDIs have identified three groups of factors that must exist at the same time to an investor: advantages owned by the investor, advantages owned by the host country and the ability of entrepreneurs to combine these factors with the business object. While the set of factors of the first and third group are directly linked to the foreign investor, the second group of factors is linked directly with the host country. The host country advantages are those that mostly affect the FDI inflows and their development potential and sustainability. In terms of the existence of the first group of factors, companies will be able to export their products, sell licenses or or service patents in a market outside their country of origin. Only if there is a three-polar relationship among the factors, then the FDIs may arise and develop.

The identified impact factors on FDIs are: governmental factors (political and legal), economic factors and various factors of doing business. The aim of this study is to analyze the impact of the economic factors in FDIs in the case of Albania, through an econometric analysis of time series from 1993-2015 with quarterly data. The results of this paper provide to the Albanian government the level of FDIs elasticity caused by changes in the main macroeconomic indicators.

## 2. Literature Review

The variety of factors that stimulate the development of FDIs in a host country are divided into two groups: (1) economic factors and (2) political and legal factors (UNCTAD, 1998). The impact level of these factors is related to the types of FDIs, which can be classified in two categories (1) horizontal FDIs (the foreign investor carries out the same activity in the host country as in the country of origin, aiming to expand in international markets and to benefit from the economies of scale), and (2) vertical FDIs (the investor enters a new foreign market aiming to minimize costs). The object of our study is to identify the impact of traditional economic factors in the development of FDIs in Albania:

*Market size:* This indicator expresses the state and business development potential of foreign investors in host countries. Artiga and Nicolini (2005) used indicators such as GDP, GDP growth or GDP per capita to measure the market size. Pärilentun (2008) reinforced this view by identifying a positive statistically significant impact of GDP on FDI perspective in the host country. "Market size" is more an explanatory factor of horizontal FDIs rather than vertical ones. Jordaan (2004) in his study argued that FDIs are directed towards large markets because of the high purchase potential. Companies that do not invest in countries of origin should receive a higher return from capital in the host country. Nonetheless, in some studies the GDP growth is evaluated as a better variable used to express the market

size in comparison with the GDP value itself. The hypothesis that the size of the market promotes the development of FDI is related to the need for efficient utilization of resources and the use of economies of scale (Charkrabarti, 2001).

*The level of employment:* This indicator is measured by the number of employees or the labor cost in the host country. Studies have shown that a high cost of labor discourages FDIs (especially vertical FDIs). This relation has been analyzed by several authors: Flamme (1984), Schneider and Frey (1985), Culem (1988), Shamsuddin (1994), etc. A study conducted by ODI in 1997 identified a positive statistically significant correlation between low labor costs and FDIs. While the professional and technical capacity of human capital is a major factor with positive impact on FDIs in a host country, regardless the cost of professional work, explained by the growth model (Romer, 1990).

*The degree of foreign trade openness:* This indicator is measured by the sum of imports and exports relative to GDP and it is a determinant of FDIs in host countries. Charkrabarti (2001) identified a positive statistically significant relation of this indicator with FDIs. This conclusion was extended by another study by Jordaan (2004) who concluded that the degree of trade openness do affect the FDIs but not all types of FDIs. According to this study, this indicator positively affects horizontal FDIs or when trade restrictions against certain imports are evident in the economies of the host countries.

*The degree of industrial privatization:* This indicator measures the degree of the state's share in domestic industrial production. It is calculated as the amount of industrial production in state-owned companies divided by the industrial production of the entire economy. It is considered as a measurement of the maturity level of the private market to a host country. This indicator is expected to have a negative impact on the inflows of FDIs in the host country, (Cheng & Kwan, 2000).

*Inflation rate:* The assessment of price stability is linked to the changes of inflation in the economy. Demirhan and Masca (2008), Egwaikhide and Udoh (2008) concluded that inflation has a negative impact on FDIs of a host country and this relation was statistically significant.

*Fiscal factors:* Many authors have analyzed the taxes impact on FDIs, but the relation still remains unclear. Some studies have concluded that corporate taxes have a significant and negative impact on FDIs: Hartman (1994); Hines and Rice (1994); Loren and Guisinger (1995); Cassou (1997); Kemsley (1998); etc. Other authors such as Wheeler and Mody (1992); Jackson and Markowski (1995); Yulin and Reed (1995); Porcano and Price (1996); etc. argued that fiscal incentives do not have a statistically significant impact on promoting FDIs. The best indicators to measure the impact of fiscal policies in attracting FDIs according to the IMF

(2011) are: fiscal burden, corporate tax, the number of tax payments and the time spent by a business to close the fiscal obligations.

### 3. Methodology

Based on macroeconomic indicators data of Albania, we will build linear(logarithmic) multiple regression models to assess the structure of the invested capital. We have used a fully elastic model:

$$\log(y_t) = b_0 + b_1 \cdot \log(x_{1t}) + b_2 \cdot \log(x_{2t}) + \dots + b_n \cdot \log(x_{nt}) + \varepsilon_t, \quad \text{për } x_i \text{ dhe } y > 0.$$

where:

- $y$  = dependent variable (the dependent variable is the level of foreign direct investments flows in Albania).
- $x_{it}$  = independent variable for  $i = 1, 2, \dots, n$ , and each of them is a set of macroeconomic indicators.
- $b_i$  = model parameters, or coefficients of independent variables in the model, for  $i = 1, 2, \dots, n$  (in this regressive study, the change in dependent variable  $\Delta y$  is explained by these coefficients  $b_i$  when  $\Delta x_{it} = + 1$  unit in conditions “*ceteris paribus*”).
- $\varepsilon_t$  = regression residual or error term; it is the only variable that can not be predicted or explained by the model and should be stochastic. The error term is known as the statistical error of the model (it is a series of other influencing factors not included in the model).

To assess the parameters  $b_i$ , it will be used the usual method of least squares (Dougherty, 2007). But in order that this assessment serves to draw conclusions with high statistical confidence, we will rely on all the basic assumptions of Gauss-Markov Theorem (Gujarati, 2004). According to this theorem a regression model should meet several conditions:

- *First condition*: the model should be linear or logarithmic to apply the method of least squares. Linearity of the parameters should be stated by  $b_i$  parameters.
- *Second condition*: only one parameter  $b_0$  exist and it should be determined by the model, thus the mathematical expectation is  $E(\varepsilon_t) = 0$ .
- *Third condition*: the model should have a constant waste variance  $\varepsilon$ , thus it should have no heteroskedasticity because the  $b_i$  parameters are unbiased.
- *Fourth condition*: the model should not have waste autocorrelation, thus the covariance  $Cov(\varepsilon_i; \varepsilon_j) = 0$  for every  $i \neq j$ .
- *Fifth condition*: the model should not have multikolinearity.

After having completed on all these conditions, we use the common method of least squares as the best explanatory and interpretative technique of the model parameters.

#### **4. Empirical Analysis of FDI Factors**

The empirical analysis is based on time series with quarterly data for the years 1993 to 2015, received from publications of the World Bank, the Bank of Albania and INSTAT. This analysis aims to identify the dependent variable (FDI) link to the independent variables: gross domestic product (GDP); domestic investment in the economy, excluding foreign direct investment (IB); number of employees (PUN); economic openness (HEK); the state budget revenues from privatization (PRV); inflation rate (INF); and the level of business tax burden (TAX). After performing the ADF test for stationary series (Dickey et al., 1979), the overall equation of the economic growth model in Albania is:

$$\Delta \log(IHD)_t = -0.060105 + 3.583061 * \Delta \log(GDP)_t - 0.384684 * \Delta^2 \log(IB)_t + 7.131841 * \Delta \log(PUN)_t + 0.041658 * \Delta \log(PRV)_t - 1.848164 * \Delta^2 \log(INF)_t - 3.653896 * \Delta \log(TAX)_t + 1.042729 * \Delta \log(HEK)_t - 0.513686 * \varepsilon_{t-1} + \varepsilon_t$$

This model is statistically significant by Fisher test with significance level  $p < 1\%$ . In addition, the model has also an acceptable determination coefficient referred to real economies, with an adjusted value of  $R^2 = 57.2\%$ . By performing a more in depth analysis, we used student distribution statistics, t-test. According to this test, several factors were identified to have a statistically significant and positive relationship with FDIs:

- gross domestic product, (with significance level  $p < 5\%$ );
- number of employees (active workforce), (with significance level  $p < 10\%$ );

A negative and statistically significant relation of the dependend variable is identified with the following factors:

- domestic investment in the economy, excluding foreign direct investment, (with significance level  $p < 5\%$ );
- the level of business tax burden, (with significance level  $p < 10\%$ );

While FDIs do not demonstrate any statistical significance with the economic indicators: economic openness, state budget revenues from privatization, and the inflation rate. The evaluation model of factors affecting FDIs in Albania is analyzed in all the conditions of building efficient models by assumptions based on Gauss-Markov theorem, as expressed in the analysis of the economic growth model. The findings of these tests are summarized in Table 1 below:

**Table 1. The results of econometric tests for the FDIs impact factors model**

Test	Results
Ramsey RESET	Adjusted number of selected terms is 2. According to Ramsey RESET test, the model is a logarithmic function (with statistical significance level of $p < 5\%$ ).
VIF (Variance Inflation Factors)	According to VIF test all factors have values less than 10 meaning that our model did not suffer the multicollinearity. (This is explained by the use of time series differences to transform into stationary).
LM (Breusch-Godfrey)	The control of autocorrelation is done with two time delays (suggested by the test), and it appears that our model has waste autocorrelation. But this autocorrelation is adjusted by identifying the connection of $\varepsilon_t$ with $\varepsilon_{t-1}$ , so by using the AR (1).
Breusch-Pagan-Godfrey	Logarithmic function of the model itself has eliminated the heteroskedasticity, and our model continues to have stable waste variance.
Jarque-Bera	Sipas këtij testi mbetjet e modelit janë me shpërndarje normale. Modeli ynë është eficient në vlerësimin e parametrave të tij, të formës plotësisht elastike. According to this test, model waste is normally distributed. Our elastic model is efficient in all its parameters assessment.

Source: Authors calculations in Eviews 8

The efficient model of influencing factors of FDIs in Albania, shows that:

*Gross domestic product (GDP)*. The growth with 1% of GDP in the country is expected to bring an increase of 3.58% in FDIs. Market size variable (representative variable - GDP) showed a strong and statistically significant relationship with FDIs in Albania.

*Domestic capital investments (IB)*. The level of FDIs is expected to decrease with 0.38% by 1% increase in domestic capital investment. This connection is in line with expectations suggested by the economic theories. If government policies are focused on the growth of domestic capital investment (protectionist policies, domestic business facilities, etc.), they do have a tendency of FDI braking.

*Number of employees (NPP)*. By increasing the number of employees with 1%, it is expected that FDI in Albania increase by 13.7%, however the statistical significance is not strong. Statistical significance was not expected to be strong because the labor market is the most informal market in our country (this is discussed above). The model shows that the workforce is a major determinant of FDIs in our country. Foreign investors aim to use the workforce and to benefit from the new age and low cost of the workforce.

*The level of tax burden on businesses (TAX)*. If the fiscal burden increases by 1% in our country, it brings a reduction in FDIs by 1.04% =, but this relation has a weak

statistical significance. Albania's fiscal policies have been subject to frequent changes and inconsistencies.

The main characteristic of the model parameters is their sustainability in the long run. This conclusion is based on tests of the stability of the model parameters "CUSUM" and "CUSUM of Squares". Parameters stability is identified during all the analysed quarters, except of the third and fourth quarter of 2013. Noting with  $\beta_2$ ,  $\beta_3$ ,  $\beta_4$  and  $\beta_8$  respectively the coefficients of the variables:  $\Delta\log(\text{PBB})$ ,  $\Delta^2\log(\text{IB})$ ,  $\Delta\log(\text{PUN})$  dhe  $\Delta\log(\text{TAX})$ , we build hypothesis,  $H_0: \beta_2 = \beta_3 = \beta_4 = \beta_8 = 0$  and by performing Wald-test, the hypothesis was rejected. This shows that our model has stable parameters which can be used for long-term forecasts.

## **Conclusions**

The foreign direct investments are influenced by a set of factors, with both the economic and non-economic nature. The main economic factors are: market potential (the value of GDP or GDP growth), which affects horizontal FDIs; the level of employment or labor costs (specialized or non-specialized), influences horizontal and vertical FDIs; the degree of economic openness to foreign trade influences horizontal FDIs; the rate of industrial privatization influences horizontal and vertical FDIs; Inflation rate (indicator of price stability), influences horizontal and vertical FDIs; fiscal factors (fiscal burden of doing business) influence horizontal and vertical FDIs.

According to our elasticity assessment model, we conclude that the macroeconomic factors which have positive and statistically significant impact on FDIs are:

*the total number of employees (active labor force at work)*, with the highest degree of flexibility, because in Albania, many foreign investors have intended to take advantage of cheaper labor force, especially in fason industry;

*GDP*, showing that although the Albanian economy is small, the market size and its potential is a significant determinant factor of FDIs.

Ndersa FDI kane lidhje statistikisht të rëndësishme dhe negative me treguesit makroekonomik: While FDIs are negatively and statistically significant related to these macroeconomic indicators:

*investments with domestic capital*, but with a lower degree of elasticity. This relation shows that government policies in Albania have been incentives to the foreign investors, while protectionist policies, domestic business facilities, etc. have been avoided. In this context, the strategy of the investment environment in Albania has a favorable climate to foreign investors;

*businesses tax burden*, but with a moderate degree of elasticity. This relation is associated with the fiscal policy instability that have accompanied Albania during the analysed years.

Analiza ekonometrike e ketij punimi tregon se modeli yne i vleresimit ka parametra te qendrueshem, te vlefshem edhe për parashikime në afatgjatë. Disi e paqarte eshte lidhja e FDI me treguesit ekonomik: shkalla e hapjes ekonomike, të ardhurat nga privatizimet, dhe norma e inflacionit. Kjo mbetet per tu analizuar ne vijim, ndoshta me ndarjen e series kohore ne pika thyerje.

The econometric analysis of this paper shows that our assessment model has sustainable parameters, which are valid for long-term forecasts. The relevance of economic indicators: economic openness, privatization revenues, and the inflation rate on FDIs is still unclear, but it will be part of our future research work.

## References

- Artige, L. & Nicolini, R. (2005). *Evidence on the Determinants of Foreign Direct Investment: The Case of Three European Regions*. <http://pareto.uab.es/wp/2005/65505.pdf>.
- Bank of Albania (2005). *Foreign direct investment in developing countries of Eastern Europe: The Case of Albania*.
- Bank of Albania (2012). *Foreign Direct Investment Report, 2011*.
- Bevan, A.A. & Estrin, S. (2004). The determinants of foreign direct investment into European transition economies. *Journal of Comparative Economics*, pp. 775–787.
- Cassou, S.P. (1997). The Link Between Tax Rates and Foreign Direct Investment. *Applied Economics*, Vol. 29, pp. 1295-1301.
- Charkrabarti, A. (2001). The Determinants of Foreign Direct Investment: Sensitivity Analyses of Cross-Country Regressions. *Kyklos*, Vol. 54(1), pp. 89-114.
- Cheng, L. & Kwan, Y. (2000). What are the determinants of the location of foreign direct investment? The Chinese experience. *Journal of International Economics*, Vol. 51, pp. 379–400.
- Culem, C.G. (1988). The Locational Determinants of Direct Investment among Industrialized Countries. *European Economic Review*, Vol. 32, pp. 885-904.
- Demirhan, E. & Mahmut, Masca M. (2008). Determinants of Foreign Direct Investment Flows to Developing Countries: A Cross-Sectional Analysis. *Prague Economic Papers*, Vol. 4, pp. 356-369.
- Dougherty, C. (2007). *Introduction to Econometrics*. 3rd Edition. Oxford: Oxford Press.
- Estrin, S. & Uvalic, M. (2013). *Foreign direct investment into transition economies: Are the Balkans different?*. LSE Europe in Question Discussion Paper.
- Flamm, K. (1984). The Volatility of Offshore Investment. *Journal of Development Economics*, Vol. 16, pp. 231-248.
- Folfas, P. (2011). FDI between EU member states: gravity model and taxes. *European Trade Study Group Conference, IMF*.



Grosse, R. & Trevino, L.J. (2005). New Institutional Economics and FDI Location in Central and Eastern Europe. *Management International Review*, Vol. 45(2), pp. 123-145.

Gujarati (2004). *Basic Econometrics*. 4th Ed., NY: The McGraw–Hill Companies.

Hanson, G. (2001). Should Countries Promote Foreign Direct Investment?. *G-24 Discussion Paper 9*, UNCTAD. Geneva: UNCTAD.

Hartman, D.G. (1994). Tax Policy and Foreign Direct Investment in the United States. *National Tax Journal*, Vol. 37(4), pp. 475-488.

Hines, J.R. & Rice, E.M. (1994). Fiscal Paradise: Foreign Tax Havens and American Business. *The Quarterly Journal of Economics*, Vol. 109, pp. 149-182.

Isaksson, A. (2007). *Determinants of Total Factor Productivity: A Literature Review*. United Nations Industrial Development Organization. [http://www.rrojasdatabank.info/87573\\_determinants\\_of\\_total\\_factor\\_productivity.pdf](http://www.rrojasdatabank.info/87573_determinants_of_total_factor_productivity.pdf).

Jackson, S. & Markowski, S. (1995). The Attractiveness of Countries to Foreign Direct Investment. *Journal of World Trade*, Vol. 29, pp. 159-180.

Jordaan, J.C. (2004). Foreign Direct Investment and Neighbouring Influences. Doctoral thesis, University of Pretoria.

Kemsley, D. (1998). The Effect of Taxes on Production Location. *Journal of Accounting Research*, Vol. 36, pp. 321-341.

Loree, D. & Guisinger, S.E. (1995). Policy and Non-Policy Determinants of U.S. Equity Foreign Direct Investment. *Journal of International Business Studies*, 26, pp. 281-300.

OECD (2008). *Benchmark Definition of Foreign Direct Investment*. 4th Edition.

Porcano, T.M. & Price, C.E. (1996). The Effects of Government Tax and Non-Tax Incentives on Foreign Direct Investment. *Multinational Business Review*, Vol. 4, pp. 9-20.

Romer, P. (1990). Endogenous Technological Change. *Journal of Political Economy*, Vol. 96, pp. 71-102.

Schneider, F. & Frey, B. (1985). Economic and Political Determinants of Foreign Direct Investment. *World Development*, Vol. 13(2), pp. 161-175.

Vesaite, R. (2014). FDI from European Union to Western Balkan countries: is the economic development being intensified in the region? [https://ddd.uab.cat/pub/treecpro/2014/hdl\\_2072\\_240258/25.pdf](https://ddd.uab.cat/pub/treecpro/2014/hdl_2072_240258/25.pdf).

Yulin, N. & Reed, M.R. (1995). Locational Determinants of U. S. Direct Foreign Investment in Food and Kindered Products. *Agrobusiness*, Vol. 11, pp. 77- 86.

Bank of Albania: <http://data.worldbank.org/indicator>

INSTAT: <http://databaza.instat.gov.al/pxweb/en/DST>

World Bank: <http://data.worldbank.org/>