Analysis of the Attractiveness of Foreign Direct Investments in Kosovo's Economic Development

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Abstract

This paper studies the effects of FDIs in a FDI Host Country. Various analysis in the paper indicate with great certainty that FDIs are highly preferred, particularly by developing countries, as many of the latter marked significant economic growth as a result of FDI, thus adding to local investments. Analysis of different levels show that developed countries have a higher level of FDI. The main analysis as far as FDI is concerned should be based on the form and the links of FDIs. Such analysis will allow us to better understand how FDIs affect local economies, how FDIs should be addressed by state policy, through various fiscal strategies and policies that states should undertake so that FDIs to fulfill their goal. Based on the econometric analysis, the OLS and VECM models, the growing FDI flows have a positive impact on the country's economic growth, specifically in the case of Kosovo. This research shows that Kosovo's institutions have made efforts to improve the applicable legislation and strengthen law enforcement in order to convey a message of security to foreign investors, of a safe investment environment. The growth of foreign investment would be an important source of economic growth for Kosovo, and their promotion residuals a political priority of the country. Therefore, improving the indexes of political stability, macroeconomic stability, and business and governance climate indicators would have an impact in the optimization of inflows of foreign direct investment in Kosovo.

Keywords: Investments, economy, business, management, variables.

Introduction

There is significant literature for foreign direct investment in countries with economies in transition. After a surface analysis, our observations were focused on two main points: the analysis of foreign direct investment determinants, including the study of the relationship between the investment climate and FDIs, and the FDI impact analysis in the country's economy as well as from a macroeconomic (economic growth, and trade) and microeconomic (restructuring and performance of enterprises) point of view. Such analysis is intended also through this paper: initially, the factors that are thought to affect foreign direct investment in Kosovo will first be studied, then we will see the effect of the latter on the economic growth rate, using models that better fit with the data and variables selected for the purposes of the paper. Before moving to the results obtained from the assessment of the model, it is important to make a summary of the existing literature on foreign direct investment and factors that are thought to play an important role in determining their behavior.
The methodology used in this paper consists in the use of several different models and techniques applied to fiscal indicators. OLS equations have been used, in order to investigate the factors that influence the growth of foreign direct investment in

Kosovo. The VECM regression evaluation methodology was used to see the extent of FDI influence in Kosovo's economic growth.

1.1. Data

The analysis made in this paper used government fiscal indicators, including a period from 2002 until end 2016. The data used are annual. The variables used are FDIs, GDP per capita, trade openness measured as the total of exports and imports relative to GDP, rate of inflation, interest rate and private investments.

1.2. FDI determinants for the model

A strong reason that would motivate a company to create production facilities abroad, rather than exporting its own products or contracting a domestic enterprise, is the prospect of greater profits. The characteristics that the host country must have to generate higher profits for the company and that determine its decision to invest abroad are vast and varied, and have been thoroughly analyzed in the literature. A significant theoretical contribution to this issue has been brought by the Porter's "Diamond Theory" (1990), which is based on four factors defined as the determinants of the country:

- **Factors Conditions** - production factors include natural reserves as well as those created as a qualified workforce or infrastructure;
- **Demand Conditions** - the nature of the country's demand for goods and services as well as the level of buyers;
- **Related and Supporting Industries** - the existence of a market of other suppliers or industries close to that of the investment; and
- **The company's Strategy, Structure and Rivalry** - the competition of local companies and the conditions for the creation, organization and administration of the company.

These four "diamond" factors, along with the role of the government in economy and the role of incidental events, promote or prevent the creation of competitive conditions for companies. In general, the determining factors that influence the choice of the country where multinational companies decide to invest can be classified into two categories: those related to the country of origin those related with the host country. Variables related to the country of origin are factors that make the investment abroad more attractive than investments domestically, due to the current conditions of the country. Factors related to the host country make investment in that country more attractive than opportunities to invest in any other country. In literature, host country-related factors have gained more attention. The econometric analysis of this paper will focus on these factors.

Dunning (1993) argues that the determining motives and factors for FDI have changed over time. FDIs towards developing countries have shifted from market demand to FDIs seeking yield sources (vertical). Developing countries should attract FDI through:

- **Better labor market conditions**, which does not only mean less costly workforce, but also productivity, flexibility and adaptability of the workforce in the host country.

As a result, the country needs to have a relatively skilled and educated workforce (meaning that the country should have an appropriate education system).

• **Institutional structure.** In addition to favorable tax rates, public administration should be flexible enough to encourage investors. Institutions should be responsible, and the required documentation and registration procedures less complicated for foreign investors.

• **Market size.** The market size of a host country cannot be measured solely by its population. There may be other significant factors, in particular factors such as the purchasing power of the local population, proximity and links with other related countries, existing competition in the host country, etc.

A number of empirical works have been conducted to study the determinants of FDIs and most of them focus on host country factors such as: GDP per capita, labor cost, country macroeconomic conditions, business climate, regulatory and institutional framework, etc. Thus, for example, Antwi [et. al.] (2013) studied the relationship between FDIs and economic growth in Ghana for the period 1980-2010, using time data. They estimate a linear regression with the ordinary least squares method (OLS), where the explanatory variables include GDP, GDP growth rate, gross national income (GNI), added value in the processing industry, external debt stock, inflation, trade and added value in the industry sector. Results indicate that all such variables have a significant impact in the level of foreign direct investments. Other authors come to similar conclusions using Vector autoregression (VAR) models. The purpose of this section is to identify which of the literature suggested factors on FDIs serve as their determinants. Following this, the link between economic growth and FDIs will be studied to see if the latter really have a positive role in a country's economic performance.

1. Econometric analysis for FDIs

The model in which the number of explanatory variables is greater than one is called multiple regression model. The general shape of a multiple regressive model with explanatory or independent variables is: $Y = C_1 + C_2X_2 + \ldots + C_kX_k + u$ where C_1 is is the intersept, while C_i is called partial coefficient regression, namely it shows how the dependent variable Y changes when X_i increases by one unit, while other explanatory variables are kept constant.

In an effort to identify foreign direct investment determinants in Kosovo, this study uses a classic linear linear regression model, where dependable variable used is foreign direct investment, and variables explaining it are: Real GDP per capita, trade opening rate, inflation rate, real interest rate, private investment level relative to GDP, FDI weight relative to GDP in the previous period. In general, the model appears as follows:

Equation No. 1: $FDI_t = \alpha_0 + \alpha_1{*}FDI_{t-1} + \alpha_2{*}\ GDP\_capita_{\ t} + \alpha_3{*}OPENING\_TR_t + \alpha_4{*}INF_t + \alpha_5{*}INT_t + \alpha_6{*}INV_t + \varepsilon_{\ t}$ where term ε_t represents its residuals.

The table below explains the variables included in the model and their expected effect on FDIs. It is important to note that the exclusion of other variables that may have an impact on FDI behavior is related to the lack of data on Kosovo.

Table 1. Explanatory variables and the expected effect on FDIs

Explanatory variables	Determination	Expected effect
FDIt-1	FDI to GDP ratio for the previous period	positive
GDP_capita	GDP/capita	positive
Opening_tr	Exports rate, plus imports to GDP	positive
Inv	Capital formation rate to GDP	positive
Inf	Inflation rate	negative
Int	Actual interest rate	positive or negative

Source: Author's calculations, 2017

1.1. Market size

The size of the host market, which also represents the country's economic conditions and potential demand for their production, is an important element in FDI decision-making. Moreover, Scaperlanda and Mauer (1969) argue that FDIs responds positively to market size, as a threshold is reached that is large enough to allow economies of scale and efficient use of resources. The importance of the market size is confirmed in many previous empirical studies (Kravis and Lipsey, 1982, Schneider and Frey, 1985, Wheeler and Mody, 1992, Tsai, 1994, Loree and Guisinger, 1995, Lipsey, 1999, Wei, 2000). Actual GDP per capita is used as the approximator of the market size. The data were obtained from the Statistical Office, Central bank of Kosovo and the World Bank. While this variable is used as a potential market indicator for foreign investor products, the expected sign is positive. GDP per capita can also approximate capital abundance (Edwards, 1990) and the investment climate (Wei, 2000; Aseidu, 2002).

1.1.1. Trade openness

There is a standard hypothesis, according to which openness promotes FDI (Hufbauer et al. 1994). In literature, the trade to GDP ratio is often used as a measure of openness of a country and is interpreted as a measure of trade restrictions. This indicator is important for foreign direct investors, which are motivated by the exports market. Empirical evidence (Jun and Singh, 1996) test whether higher levels of exports lead to higher FDI inflows. This explains why (Ex+Im)/GDP is included in regression.
Private private investment as a ratio to GDP serves as an indicator for the investment environment in the host country. A higher level of private investment indicates a more favorable business climate, which includes infrastructure, tax-friendly policy, easier bureaucratic procedures. The inflation rate is used as a *proxy* for the macroeconomic risk of the host country. The higher it is, the more likely it is for the country to experience macroeconomic instability.
The actual interest rate also captures the country's macroeconomic risk and serves as an pull factor for foreign direct investment.
Among the most common indicators used for FDI measurement is the FDI net inflows to GDP ratio (Adeisu, 2002; Quarzi, 2005; Goospeed [et. al.], 2006).

Information on the above data was obtained from the Central Bank of Kosovo, the Statistical Agency of Kosovo, but also from international institutions such as the IMF. Data are annual and include the period 2002-2016. For the model estimation, the ordinary least squares (OLS) method was used, which provides unbiased, unmoved and efficient coefficients, if the so-called Gauss-Markov assumptions are met (Brooks, 2002):

1. $E(\varepsilon_i)=0$ The average of errors is zero.
2. $Var(\varepsilon_i)=\sigma^2$ Error variance is constant and a final number for every x_i value.
3. $Cov(\varepsilon_i, \varepsilon_j)=0$ Error terms are statistically independent of each other.
4. $Cov(\varepsilon_i, x_i)=0$ Error terms are independent of the explanatory variables.
5. $\varepsilon_i \sim N(0, \sigma^2)$ ε_i have a normal distribution.

If one or more of these assumptions are not met, the model can show any of the following problems:

- Estimated coefficients (β) are biased, which means that E(β) ≠ β.
- Standard errors associated thereto are also biased. As a result, the hypothesis testing is of no value.
- The distribution assumed for test statistic is inappropriate.

Table two shows the results obtained from the model estimation. They suggest that GDP per capita, level of trade openness, private investments and foreign direct investment in the previous period have a statistically significant impact on the level of FDI to GDP, for the level of importance 0.05.

Table 2. Model evaluation results

Dependent Variable: FDI
Method: Least Squares
Date: 03/03/17 Time: 7:45 AM
Sample (adjusted): 2006 2016
Included observations: 11 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
IHD(-1)	0.410463	0.229428	0.652121	0.0321
GDP_CAPITA	0.800736	0.541600	0.555274	0.0493
OPENING_TR	2.015187	1.224556	0.090588	0.0425
INF	-1.288389	16.60262	-0.077602	0.9507
INT	1.8683	191.7752	0.593759	0.6589
INV	2.129517	1.141881	-0.989172	0.0335

C	29,119	5261.458	-0.555952	0.6770

R-squared	0.779934	Mean dependent var	3.985100
Adjusted R-squared	0.540465	S.D. dependent var	0.576940
S.E. of regression	0.759996	Akaike info criterion	11.45400
Sum squared resid	3.751132	Schwarz criterion	11.52351
Log likelihood	-18.81599	Hannan-Quinn criter.	10.98517
F-statistic	13.59680	Durbin-Watson stat	2.23001
Prob(F-statistic)	0.009060		

Source: Author's calculations, 2017

Equation No. 2: Evaluation of OLS model in equation form.

$FDI_t = 29.1 + 0.41*FDI_{t-1} + 0.80*\ GDP\_capita_t + 2.01*OPENNESS\_TR_t - 1.28*INF_t + 1.86*INT_t + 2.12*INV_t$ $R^2 = 0.78$ (78 % of the model is explained by the model variables from the study).

To study the statistical significance of individual coefficients before variables, we raise and test the hypothesis (in general terms):

$H_0: C_i = 0$

$H_a: C_i \neq 0$

The zero hypothesis is quashed if $t_v = \frac{Ci}{se(Ci)} > t_{k}\ \frac{\alpha}{2},_{n-2} \Rightarrow H_0$ ◎

Through this rationale, we see that explanatory variables such as GDP per capita, trade openness rate, private investments and foreign direct investments are statistically significant. To see the statistical significance of the model as a whole, we refer to the Fisher value which is automatically generated by the program. In the case of our model, this value is 13.59 and given that it is larger than 4, we can say that although the coefficients are not all individually statistically significant, the model itself is statistically significant. The coefficient of determination $R^{2,}$ which is calculated by the formula: $R^2 = 1 - \frac{SKG}{SKT}$, is 78%, which indicates that the explanatory variables included in the model explain for 78% of the variance of the dependent variable, which in this case is FDI.

In order to be able to rely on these results for the purposes of our work, we must see whether Gauss-Markov's assumptions are met.

1.1.2. Assumption of zero average $E(\varepsilon_i)=0$

The first assumption requires that the average value of the error term is zero. This assumption does not change as long as the regression equation contains a constant term. As shown in Table 3, the average of the residuals is in the order of 10^{-13}, so is negligible, thus we can say that the first assumption is met.

Table 3. Model residuals statistics

	RESIDUALS
Mean	4.55E-13
Median	-6.133141
Maximum	50.71818
Minimum	-44.35969
Std. Dev.	33.10967

Source: Author's calculations, 2017

1.1.3. Assumption of homoscedasticity $Var(\varepsilon_i)=\sigma^2$

If the assumption of heteroscedasticity is violated, standard errors will be biased. In this case, we can not rely on statistics t and the t test becomes invalid. To study the heteroscedasticity, the Breusch-Pagan-Godfrey test was used, according to which the residual square of the model is regressed towards the explanatory variables in level, square and interaction. The hypothesis raised in this case is:
H_0: Errors are homoscedastic,
H_a: Errors are heteroscedastic.

Since in our case the value of p is $0.5136<0.05=\alpha$, we cannot reject H0, which means that our model does not suffer from heteroscedasticity.

Table 4. Breusch-Pagan-Godfrey's test of heteroscedasticity

Heteroskedasticity Test: Breusch-Pagan-Godfrey

F-statistic	1.818783	Prob. F(6,1)	0.5136
Obs*R-squared	7.328448	Prob. Chi-Square(6)	0.2915
Scaled explained SS	0.044909	Prob. Chi-Square(6)	1.0000

Test Equation:
Dependent Variable: RESID^2
Method: Least Squares
Date: 03/03/17 Time: 3:04 PM
Sample: 2006 2006
Included observations: 11

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-41890.53	41814.20	-1.001826	0.4994
IHD(-1)	1.833903	5.002228	0.366617	0.7763
GDP_CAPITA	3.078320	4.304235	0.715184	0.6048
TRADE_OPENNESS	85.09324	176.7914	0.481320	0.7144

INF	3.613524	131.9454	0.027387	0.9826
INT	1497.664	1524.089	0.982662	0.5056
INV	-9.484663	9.074829	-1.045162	0.4859
R-squared	0.916056	Mean dependent var		959.2190
Adjusted R-squared	0.412392	S.D. dependent var		908.1919
S.E. of regression	696.1800	Akaike info criterion		15.59965
Sum squared resid	484666.6	Schwarz criterion		15.66916
Log likelihood	-55.39861	Hannan-Quinn criter.		15.13083
F-statistic	1.818783	Durbin-Watson stat		3.631001
Prob(F-statistic)	0.513610			

1.1.4. The assumption of the lack of autocorrelation Cov (ε_i, ε_j)=0 for i≠j

If the terms of residuals are not non-correlated to each other, then it can be said that they are autocorrelated or serially correlated. The consequences of ignoring autocorrelation are the same as those of ignoring heteroscedasticity. Estimated OLS coefficients continue to be unbiased, but are inefficient, rendering standard errors biased. Moreover, under such conditions R^2 is likely to be overvalued.
A common test used to detect autocorrelation is the Breusch-Godfrey test, according to which, residuals of the model are regressed towards explanatory variables and residuals of past periods. The zero hypothesis in this case tests whether the coefficients before the explanatory variables are zero, i.e. whether they affect the model residuals or not. Since the number of observations is rather small, due to limited data, the regression of this test excludes residuals of past periods and only the explanatory variables are included. Results of the test are given in Table 5. As can be seen, none of the estimated coefficients is statistically significant, as long as the p value for each of them is smaller than α=0.05. This means that terms of residuals are not correlated with independent variables or with each other. Thus, we can say that Gauss-Markov's assumptions 3 and 4 are met.

Table 5. Breusch-Godfrey test of autocorrelation of residuals

Dependent Variable: FDI
Method: Least Squares
Date: 03/03/17 Time: 7:45 AM
Sample (adjusted): 2006 2013
Included observations: 8 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
IHD(-1)	0.410463	0.129428	3.171361	0.0321

GDP_CAPITA	0.800736	0.441600	1.992920	0.0493
OPENING_TR	2.015187	0.894556	2.252723	0.0425
INF	-1.288389	16.60262	-0.077602	0.9507
INT	1.8683	191.7752	0.593759	0.6589
INV	2.129517	0.771881	2.758866	0.0335
C	29,119	5261.458	-0.555952	0.6770

R-squared	0.779934	Mean dependent var	3.985100
Adjusted R-squared	0.540465	S.D. dependent var	0.576940
S.E. of regression	0.759996	Akaike info criterion	11.45400
Sum squared resid	3.751132	Schwarz criterion	11.52351
Log likelihood	-18.81599	Hannan-Quinn criter.	10.98517
F-statistic	13.59680	Durbin-Watson stat	2.23001
Prob(F-statistic)	0.009060		

Source: Author's calculations, 2017

Xt are not stochastic Cov (εt, xt)=0. The results above suggest a lack of correlation between the terms of residuals and the explanatory variables, which implies that this assumption is met.

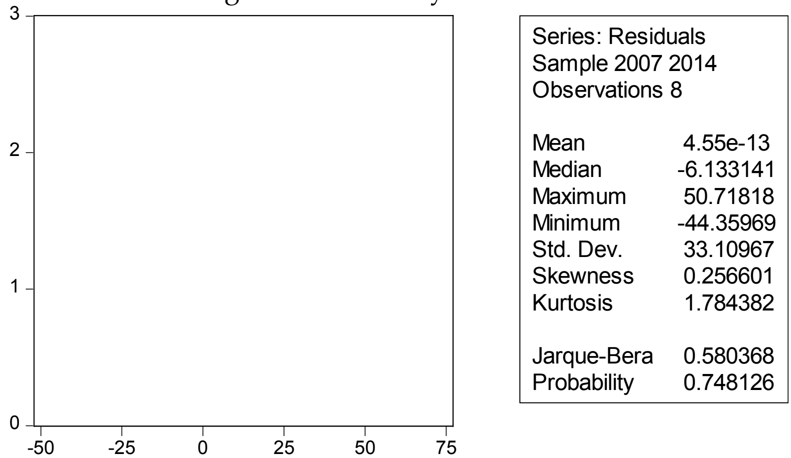
1.2. Assumption of normality $\varepsilon_i \sim N(0, \sigma^2)$

Meeting this assumption is necessary to test hypotheses, especially when the size of the selection is small. For sufficiently large selections, violation of this assumption has no consequences for the model. Based on the central limit theorem, the test statistic will asymptoticly follow appropriate distribution, even in the absence of normality of residuals. In small selections, it is necessary to supplement this assumption, so that p values and tests are valid. To study whether residuals have normal distribution or not, the skewness and kurtosis values can be observed, which can be obtained from descriptive statistics. You can also use the Bera-Jarque test, the results of which are shown in figure one. The hypothesis raised in this case is:

H_0: Residuals have a normal distribution,
H_a: Residuals do not have normal distribution.

As the value of p is less than 0.05, the zero hypothesis can not be rejected, indicating that the residuals of the model have a normal distribution.

Figure 1. Normality of residuals



Source: Author's calculations, 2017

It is necessary to see if the model fulfills the stability requirement and if its functional form is linear. This means that the regression model is linear in parameters. For this, the Ramsey test is used, which is a general test on the inadequate specification of the functional form. In this case, the hypotheses are:

H_0: The functional form is linear,
H_a: The functional form is not linear,

The test results, which appear in the figure, suggest that the chosen linear form fits well to the model, while the term FITTED^2 is statistically insignificant ($p=0.6945 < \alpha=0.05$).

Table 6. RESET test of the functional form

Ramsey RESET Test
Equation: UNTITLED
Specification: IHD IHD(-1) PBB_FRYME HAPJA_TREGTARE INF INT INV C
Omitted Variables: Squares of fitted values

	Value	df	Probability
t-statistic	0.520450	1	0.6945
F-statistic	0.270869	(1, 1)	0.6945
Likelihood ratio	1.917605	1	0.1661

F-test summary:

	Sum of Sq.	df	Mean Squares
Test SSR	2331.097	1	2331.097
Restricted SSR	10937.10	2	5468.552
Unrestricted SSR	8606.006	1	8606.006

LR test summary:

	Value	df
Restricted LogL	-40.23341	2
Unrestricted LogL	-39.27460	1

Unrestricted Test Equation:
Dependent Variable: FDI
Method: Least Squares
Date: 03/04/17 Time: 11:03 AM
Sample: 2006 2013
Included observations: 8

Variable	Coefficient	Std. Error	t-Statistic	Prob.
IHD(-1)	0.410463	0.229428	0.652121	0.3321
GDP_CAPITA	1.643289	3.454424	0.475706	0.7173
TRADE_OPENNESS	18.11052	45.31463	0.399662	0.7579
INF	-79.91414	166.6967	-0.479399	0.7154
INT	-784.8521	1643.371	-0.477587	0.7163
INV	6.535922	13.66960	0.478135	0.7161
C	17855.96	37170.30	0.480383	0.7149
	0.020998	0.040345	0.520450	0.6945

R-squared	0.753199	Mean dependent var	314.5100
Adjusted R-squared	0.527610	S.D. dependent var	70.57940
S.E. of regression	92.76856	Akaike info criterion	11.56865
Sum squared resid	8606.006	Schwarz criterion	11.63816
Log likelihood	-39.27460	Hannan-Quinn criter.	11.09983
F-statistic	0.508640	Durbin-Watson stat	3.634827
Prob(F-statistic)	0.789570		

Source: Author's calculations, 2017

Diagnostic tests used to test the fulfillment of Gauss-Markov's assumptions suggest that the model satisfies all of the above assumptions to generate unbiased, efficient and unmanaged estimator. In this context, we can say that the model responds to the

purpose of this paper to identify the factors that determine foreign direct investment in Kosovo.
From the results obtained after the model's evaluation, it is noted that all explanatory variables have the expected signs; however, not all of them are statistically significant. Specifically, the level of FDI in the preceding period, GDP per capita, the level of trade openness and the level of private investment have a positive, statistically significant impact on the level of FDIs, while the real interest rate and the inflation rate, although exhibiting the expected effect, do not seem to influence the decisions of foreign investors to come to Kosovo.

2. Impact of FDIs on economic growth

After seeing the determining factors of foreign direct investment in Kosovo, it is important to look at the impact they have on economic growth. There a number of studies on FDI and economic growth, the findings of which vary according to the different methods they apply. Some researchers find that FDIs have a positive impact on economic growth. For example, Balasubramanyam [et. al.] (1996) analyze how FDIs affect economic growth in developing countries. Using *cross-sectional* data and OLS regression, he finds that FDIs have a positive impact on economic growth in host countries using a strategy that encourages exports, but not in countries that use import substitution strategies. Olofsdotter's analysis (1998) is quite similar. Using *cross-sectional* data, he finds that an increase in the FDI stock is positively correlated with growth and the effect is stronger for host countries, which have a higher level of institutional skills, measured by the level protection of property rights and bureaucratic efficiency. De Mello (1999) finds weak positive links between FDIs and economic growth, though using time series estimates and panel data with fixed effects for a selection of 32 developed and developing countries. On the other hand, Zhang (2001) and Choe (2003) analyze the causality between FDIs and economic growth. Zhang uses data for 11 developing countries in East Asia and Latin America. Using Granger's cointegration and causation tests, Zhang (2001) finds that in five cases the economic growth is supported by FDIs, but the host country's conditions such as the trade regime and macroeconomic stability are relevant. According to Choe's findings (2003), the gap between economic growth and FDIs is two-way, but leaning more towards the link growth => IHD; there is little evidence that FDIs will lead to frowth in the host country. Rapid economic growth may result in increased FDI flows. Another study by Chowdhury and Mavrotas (2003) uses an innovative econometric methodology to study the direction of causality between two variables. The study includes a time series for the period 1969-2000 for three developing countries: Chile, Malaysia and Thailand attract considerable FDIs with different growth features, political regimes and different macroeconomic episodes. Their empirical findings suggest that GDP causes FDIs, not vice versa, for Chile, while for Malaysia and Thailand there is a strong evidence of two-way causality between the two variables.
Further, Frimpong and Abayie (2006) study the causal link between FDIs and growth for Ghana for the period before and after the Structural Adjustment Program (SAP). The data are time series with an annual frequency and cover the years 1970-2005. The

study finds that there is no causality between FDIs and economic growth across the selected period and that before the SAP program. However, FDIs cause GDP growth during the post-SAP period.

As we are interested in studying the link between FDIs and economic growth in the long run, we have chosen to estimate a VECM error correction model using annual economic growth rate data and FDI as a ratio to GDP for the period 2002-2013. The error correction model is a special case of VAR models for variables that are stationary in the first margin or, in other words, integrated in the first order (I(1)).

The VAR model was first developed by macro-econometrician Christopher Sims in 1980 to model dynamic interactions between stationary variables. Since then, these autoregressive vector models have been used to describe the dynamics and causal relationships between different groups of macroeconomic variables. The advantage of using this method lies in the fact that it addresses all the variables included in the model as potential endogenous, without having any assumption on their dependence or independence on the model. The following steps will be outlined for the model evaluation. In order to use the VECM model, time series should be integrated first-order, i.e, I (1). Series stationarity is particularly important when considering the effects of "shocks" throughout the process of adapting different variables to the model (Verbeek, 2004). When working with a time series, it is advisable to display the data graphically, while an overview of their performance over time may signal potential problems. If it is considered that a time series is not returning to an average value or there is no constant variance, then it is likely that the series will not be stationary. Initial time series of model variables are graphically shown in Figure 1 of the Annex. Charts indicate that time series of macroeconomic variables are non-stationary processes and follow a random trend. The non-stationarity of time series may come from different sources, but the most important is the presence of so-called unit roots. In order to test the presence of unit roots in time series, the ADF test on both series was used. The hypothesis raised in this case is:

H_0: The series has at least one unit root,

H_a: The series has no unit root (thus is stationary).

Results of the ADF test are shown in Figure 7. They indicate that none of the time series is stationary at level, while the p value for each of the series is greater than the level of importance α (which prevents us from rejecting the zero hypothesis). This fact shouldn't be a surprise, while the graphical presentation showed that both initial series contain a trend.

Table 7. ADF test for the economic growth rate

Null Hypothesis: GROWTH has a unit root
Exogenous: Constant, Linear Trend
Lag Length: 0 (Automatic - based on SIC, maxlag=1)

	t-Statistic	Prob.*

Augmented Dickey-Fuller test statistic		-3.012595	0.1772
Test critical values:	1% level	-5.295384	
	5% level	-4.008157	
	10% level	-3.460791	

*MacKinnon (1996) one-sided p-values.
Warning: Probabilities and critical values calculated for 20 observations and may not be accurate for a sample size of 10

Augmented Dickey-Fuller Test Equation
Dependent Variable: D(RRITJA)
Method: Least Squares
Date: 03/04/17 Time: 3:52 PM
Sample (adjusted): 2004 2013
Included observations: 10 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
GROWTH(-1)	-1.114727	0.370022	-3.012595	0.0196
C	5.023583	2.298186	2.185891	0.0651
@TREND("2003")	-0.080533	0.202767	-0.397172	0.7031

R-squared	0.565415	Mean dependent var	-0.202530
Adjusted R-squared	0.441248	S.D. dependent var	2.419077
S.E. of regression	1.808252	Akaike info criterion	4.265923
Sum squared resid	22.88843	Schwarz criterion	4.356699
Log likelihood	-18.32962	Hannan-Quinn criter.	4.166343
F-statistic	4.553669	Durbin-Watson stat	1.766415
Prob(F-statistic)	0.054108		

Source: Author's calculations, 2017

Table 8. ADF test for the FDI series

Null Hypothesis: IHD has a unit root
Exogenous: Constant, Linear Trend
Lag Length: 0 (Automatic - based on SIC, maxlag=1)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-1.722477	0.6572
Test critical values:	1% level	-5.521860	

5% level	-4.107833
10% level	-3.515047

*MacKinnon (1996) one-sided p-values.
Warning: Probabilities and critical values calculated for 20 observations
and may not be accurate for a sample size of 9

Augmented Dickey-Fuller Test Equation
Dependent Variable: D(IHD)
Method: Least Squares
Date: 03/04/17 Time: 3:53 PM
Sample (adjusted): 2005 2016
Included observations: 9 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
IHD(-1)	-0.508857	0.295421	-1.722477	0.0358
C	214.9321	92.36579	2.326967	0.0589
@TREND("2003")	-7.896786	13.65810	-0.578176	0.5842

R-squared	0.495424	Mean dependent var	23.03222
Adjusted R-squared	0.327232	S.D. dependent var	110.5468
S.E. of regression	90.67320	Akaike info criterion	12.11360
Sum squared resid	49329.78	Schwarz criterion	12.17934
Log likelihood	-51.51121	Hannan-Quinn criter.	11.97173
F-statistic	2.945584	Durbin-Watson stat	2.207678
Prob(F-statistic)	0.128464		

Source: Author's calculations, 2017

The following are newly created series given the first differences of the initial series. Such a transformation is used for the non-stationary series to return to stationary, so as to be suitable for inclusion in the model.

A matter of critical importance in VAR/VECM models is the determination of the time lag with which will be included in the endogenous variables model. Lütkepohl (2005) shows how a poor specification of the VAR model affects his results: choosing a number of time lags that is larger or smaller than the optimum number reduces the predictive power of the model. There are different statistical criteria and tests that can help determine the optimal number of time lags. Usually, the most commonly used criteria for selecting the most suitable model are: Aika Information Criterion (AIC), Schwarz Bayesian Information Criterion (BIC), Hannah-Quinn (HQ) criterion, etc. Models with a low information criterion are preferred as each of these criteria penalizes the large number of variables. AIC and HQ criteria suggest that the optimum number of time lags is 2 (see Figure 4 below). This conclusion is reinforced by the fact that the number of observations is very small and a greater number of time lags would create problems with degrees of freedom, thus preventing the model estimation.

Table 9. Lag selection criterion

VAR Lag Order Selection Criteria
Endogenous variables: FDI GROWTH
Exogenous variables: C
Date: 03/04/17 Time: 3:14 PM
Sample: 2002 2016
Included observations: 7

Lag	LogL	LR	FPE	AIC	SC	HQ
0	-49.34853	NA*	8096.512	14.67101	14.65555	14.48000
1	-49.27776	0.080870	27894.60	15.79365	15.74728	15.22061
2	-34.27193	8.574760	2207.787*	-107.3034*	-107.4116*	-108.6405*
3	389.5620	0.000000	NA	12.64912	12.57185	11.69407

* indicates lag order selected by the criterion
LR: sequential modified LR test statistic (each test at 5% level)
FPE: Final prediction error
AIC: Akaike information criterion
SC: Schwarz information criterion
HQ: Hannan-Quinn information criterion

Source: Author's calculations, 2017

In VAR/VECM models, the Granger test is usually used to analyze causal relationships between variables. The main idea of this test is to see whether changes in a variable will affect changes in other variables. This way, the test serves us to see if a variable helps explain the performance of other variables for certain future time periods. The Granger Causality Test is usually constructed as an F test, where the zero hypothesis is that the information in the past periods over the x_t variable does not provide any statistically significant information about the y_t variable. In other words, x_t does not cause y_t. Granger's test is a standard tool used in most autoregressive models, however its results should be used and interpreted with caution. This test is most useful in a two-variable system, where the hypothesis on causation can be easily formulated.

Table 10. Granger test of causation

Pairëise Granger Causality Tests
Date: 03/04/17 Time: 4:13 PM

Sample: 2002 2016
Lags: 2

Null Hypothesis:	Obs	F-Statistic	Prob.
FDI does not Granger Cause GROWTH	6	115,212	0.0457
FDI does not Granger Cause GROWTH		2.49636	0.4085

Source: Author's calculations, 2017

The hypotheses we want to test are:
H_{01}: FDIs do not cause growth and H_{02}: Growth does not cause FDIs,
H_{a1}: FDIs cause growth and H_{a2}: Growth causes FDIs,

Since $p_1 = 0.0457 < \alpha = 0.05$ and $p_2 = 0.4085 > \alpha = 0.05$, we say that foreign direct investments affects the economic growth rate, while the latter does not affect the level of FDI. Thus, there is a biased biased relationship between the two variables.
The following are the results of the cointegration tests: Johansen and Engel-Granger tests, to see if there is a long-term relation between the two variables and to further evaluate the equation describing this relationship.
The hypotheses of this test are:
H0: The series is not cointegrated,
Ha: The series are cointegrated,

As seen from the table, the p values are smaller than 0.05, which means that the zero hypothesis is rejected and the series analyzed are cointegrated to each other. This implies that it is worth to further estimate the VECM equation, to study the relationship between the two variables.

Table 11. Engel-Granger test results

Date: 03/04/17 Time: 4:26 PM
Series: FDI GROWTH
Sample (adjusted): 2006 2015
Included observations: 10 after adjustments
Null hypothesis: Series are not cointegrated
Cointegrating equation deterministics: C
Automatic lags specification based on Schwarz criterion (maxlag=1)

Dependent	tau-statistic	Prob.*	z-statistic	Prob.*
FDI	-2.461885	0.0496	-5.785337	0.0456
GROWTH	-3.005472	0.0595	-9.517932	0.0630

*MacKinnon (1996) p-values.
Warning: p-values may not be accurate for fewer than 20 observations.

Intermediate Results:

	FDI	GROWTH
Rho - 1	-0.642815	-1.057548
Rho S.E.	0.261107	0.351874
Residual variance	5092.064	1.673046
Long-run residual variance	5092.064	1.673046
Number of lags	0	0
Number of observations	9	9
Number of stochastic trends**	2	2

**Number of stochastic trends in asymptotic distribution
Source: Author's calculations, 2017

Table 12. Results of the Johansen test

Date: 03/04/17 Time: 4:33 PM
Sample (adjusted): 2006 2016
Included observations: 8 after adjustments
Trend assumption: Linear deterministic trend
Series: FDI GROWTH
Lags interval (in first differences): 1 to 1

Unrestricted Cointegration Rank Test (Trace)

Hypothesized No. of CE(s)	Eigenvalue	Trace Statistic	0.05 Critical Value	Prob.**
None *	0.806001	19.28307	15.49471	0.0128
At most 1 *	0.537210	6.163853	3.841466	0.1030

Trace test indicates 2 cointegrating eqn(s) at the 0.05 level
* denotes rejection of the hypothesis at the 0.05 level
**MacKinnon-Haug-Michelis (1999) p-values

Unrestricted Cointegration Rank Test (Maximum Eigenvalue)

Hypothesized No. of CE(s)	Eigenvalue	Max-Eigen Statistic	0.05 Critical Value	Prob.**

None	0.806001	13.11922	14.26460	0.0130
At most 1 *	0.537210	6.163853	3.841466	0.0752

Max-eigenvalue test indicates no cointegration at the 0.05 level
* denotes rejection of the hypothesis at the 0.05 level
**MacKinnon-Haug-Michelis (1999) p-values

Unrestricted Cointegrating Coefficients (normalized by b'*S11*b=I):

FDI	GROWTH
0.012886	0.259508
0.006798	1.162224

Unrestricted Adjustment Coefficients (alpha):

D(IHD)	88.33244	20.24258
D(GROWTH)	0.540313	0.994700

1 Cointegrating Equation(s):	Log likelihood	-54.23441

Normalized cointegrating coefficients (standard error in parentheses)

FDI	GROWTH
1.000000	-20.13920
	(17.2634)

Adjustment coefficients (standard error in parentheses)

D(IHD)	-0.138225
	(0.33109)
D(GROWTH)	-0.006962
	(0.00891)

Source: Author's calculations, 2017

Table 13. Evaluation of the VECM model to see the impact of FDI on economic growth

Vector Error Correction Estimates
Date: 03/04/17 Time: 4:42 PM
Sample: 2002Q1/2013Q4

Included observations: 10
Standard errors in ( ) & t-statistics in [ ]

Cointegrating Eq:	CointEq1	
IHD(-1)	1.000000	
GROWTH(-1)	-2.0322 (0.4507) [-4.57631]	
C	-3.12208	
Error Correction:	**D(IHD)**	**D(GROWTH)**
CointEq1	-0.14925 (0.0314) [-4.75222]	0.001834 (0.00049) [3.71894]
D(IHD(-1))	-0.107054 (0.11719) [-0.91348]	0.065724 (0.01840) [3.57208]
D(GROWTH(-1))	-1.292148 (0.80906) [-1.59710]	-0.304598 (0.12702) [-2.39798]
C	0.377282 (0.10471) [3.60324]	-0.008556 (0.01644) [-0.52046]
R-squared	0.393167	0.549414
Adj. R-squared	0.351792	0.518692
Sum sq. resids	20.60490	0.507888
S.E. equation	0.684320	0.107438
F-statistic	9.502513	17.88352
Log likelihood	-47.81292	41.05962
Akaike AIC	2.158872	-1.544151
Schwarz SC	2.314805	-1.388217
Mean dependent	0.339583	0.007382
S.D. dependent	0.849966	0.154862
Determinant resid covariance (dof adj.)		0.005403
Determinant resid covariance		0.004540

Log likelihood	-6.742310
Akaike information criterion	0.697596
Schwarz criterion	1.087430

Source: Author's calculations, 2017

The results of the VECM model suggest that FDIs have a statistically significant positive impact on economic growth in the long run. It must be taken into account that the VECM model coefficients are interpreted in contrast to the marks that result after the model's estimation. The error correction coefficient, which is -0.149, indicates that it takes about seven years to reach a stable balance.

Conclusions and recommendations

Studies show that FDIs have been important factors for production and economic development in developing countries. The strong link between FDIs and the GDP growth rate, as indicated by the econometric analysis in chapter IV, shows that the growing FDI flows have a positive impact on the country's economic growth. Kosovo authorities should make efforts to improve the business environment, in order to increase the inflow of FDIs. One of the most important measures that can be taken by the Government to promote foreign investment is the removal of FDI-related barriers in order to improve the investment climate in Kosovo and its perception by foreign investors.

One major problem that affects FDI, and more, is corruption. In order to facilitate foreign investments, an important measure would be the elimination of unnecessary regulations (which creates space for bribery and corruption). Other regulations should be more transparent and accountable. The legal framework should be strengthened, not only in terms of legislation, but also in its implementation and transparency related to such legislation, regulations and procedures. Reducing the size of the informal economy would help not only improve the macroeconomic economy but also eliminate the biggest obstacle to legitimate businesses, which is unfair competition.

Infrastructure (including electricity and water) must be resolved, in order to encourage foreign investments throughout Kosovo. Increased public investments in infrastructure is not the only solution; efforts can be made towards attracting foreign projects in this area, providing special incentives. Regarding the tax legislation, Kosovo has already concluded bilateral agreements with various countries regarding taxes. However, in order to attract more foreign investments, such agreements should be extended to other countries that play an important role in international markets such as, for example, Western European countries (e.g. United Kingdom) and USA.

Finally, the Government of Kosovo can encourage the development of specific geographic areas within the country, representing areas with a greater investment opportunity, in an effort to make the whole country more attractive. Such areas can be industrial or tourist sites (such as, for example, coastal areas). The development of these areas may require significant investments and resources, however pilot projects may initially be undertaken, only to be replicated later in wider scale.

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ANNEX

Table 13. Descriptive statistics

	FDI	GDP_CAPITA	OPENING_TR	INF	INT	INV
Mean	6.16	7655.00	61.53	3.79	14.13	18.77
Median	6.47	7630.00	60.50	3.92	14.07	18.51
Maximum	7.61	8420.00	73.44	9.35	14.70	21.56
Minimum	4.14	6880.00	51.13	-2.41	13.79	16.78
Std. Dev.	1.47	531.82	8.50	4.30	0.33	1.77

Source: Author's calculations, 2017

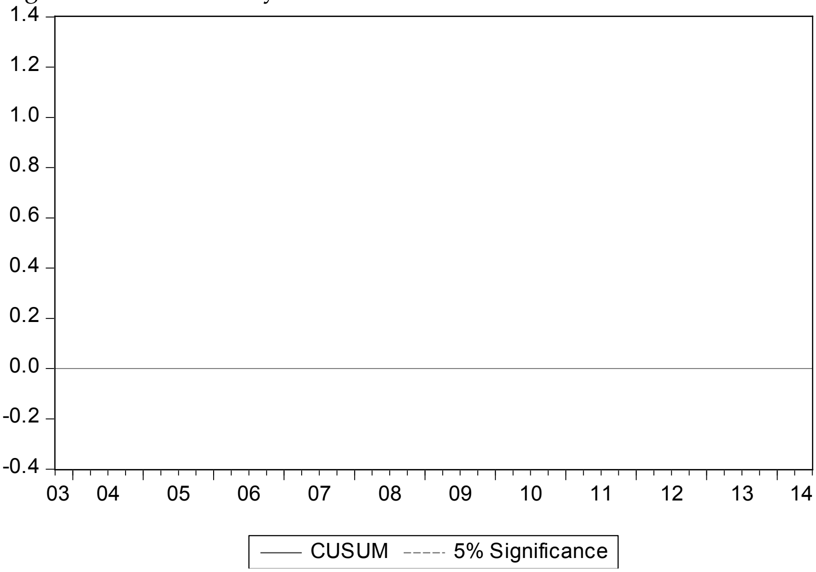
Table 14. Matrica e korrelacionit

	FDI	GDP_CAPITA	OPENING_TR	INF	INT	INV
FDI	1					
GDP_CAPITA	0.76	1				
OPENING_TR	0.79	0.48	1			
INF	-0.44	0.41	0.38	1		

INT	0.22	-0.41	-0.48	-0.43	1	
INV	0.38	0.30	0.31	-0.27	-0.04	1

Source: Author's calculations, 2017

Figure 2. Model stability test



Source: Author's calculations, 2017