
ABSTRACT

The aim of this study was to examine the relationship theoretically global Foreign Direct Investments (FDI) to the global GDP of all countries in the world. This study emphasizes the relationship between global GDP and global FDI in all countries in the world, whether in theory has a coherent nature with theoretical expectations. Multiple linear regression analysis applied in this study. According to the results of linear regression test the evolution of global FDI in terms of changes in global GDP in 2014 is inversely proportional to the existing theories. The results of this study may help us to describe the linear relationship between the variables studied. Linear regression models estimated proved to be one of the characters right, because it has a high ratio of determination $R^2 = 0.002$, so that almost 2% FDI is explained by the independent variables included in the model. Based on all the comments made following the analysis of global GDP using the regression model, concluded that this indicator is strongly influenced by changes in the global GDP. The results obtained from this study little theory has not been in line with expectations.

KEYWORDS: GDP, FDI, linear regression.

INTRODUCTION

In economics the GDP and the amount of investment that can be widely accepted as the main determinant of growth in a country. If a country has abundant investment and more, it will be able to make the level of GDP in some of these countries are at the level of prosperous economy. Value of investing in a country largely determines all, let alone a country that has a fairly dense population. In theory can explain it, because basically if the investment into a very large, then the employment and income of workers will increase, with the growing number of workforce and revenue earlier will cause the value of the per capita income in a country will be able to increase, then already with definite figures in the country's GDP will also increase, but what about the analysis globally around the world. Countries that suffer from low levels of investment and capital that have then will be faced with a choice between finding foreign debt and or will cause the opposite, unemployment increases. Although in the many studies that found a positive relationship between the level of investment in a country with per capita income, but has not been definitely positive relationship globally. Fundamentally financing in a country is usually sourced from national income and investment in the plant from abroad, either from external financing in developed countries and countries suffer from low capital in the last 20 years thanks to a positive effect on a country. In Yilmazer, (2010; 242) and Davies (2010) say their onboarding process industrialization policy in order to increase economic growth as countries China, Brazil, Russia, Singapore and India can make a major country can attract large amounts of FDI to some countries requiring.

In some economic theory that many proposed Berthelemy, Demurger, (2000: 140); Mencinger (2003: 491); Lyroudi et. al, (2004: 198); Athukorala, (2003: 4), says that FDI has a positive impact on economic growth in a country without the other in maskud is GDP. The existence of a process of increasing marginalization both capital efficiency, efficient distribution as well as their source of increased efficiency, organizational skills, knowledge, skilled manpower, brand, easy to enter the market, although theoretically the positive effects of FDI have not felt directly against the increase in GDP in a the state in national economic scale, there are no facts empirically and theoretically that found significant influence and direct FDI can make a country can increase its GDP. Call it a study done by Carcovic and Levine (2002: 196) which states that the results of several studies by sector, FDI does not affect economic growth significantly and directly. In these studies the assumption that any positive externalities

between domestic and foreign companies could not be found. Another with a study done by Demirel, (2006: 111) which assumes a positive relationship between FDI and economic growth, but the positive impact of FDI on economic growth depends on the level of income, human capital and trade financial policy in a country run smoothly. Some policies in getting FDI development as a fundamental tool for achieving economic growth that is making rules such as tax incentives and others in Lyroudi et. al, (2004: 198).

In the theory of neo-classical explained that the model of growth in a country is usually in view of the rate of increase of FDI and investment efficiency and the impact on economic growth while, and in the long-term economic growth rates can be considered things that can be made as a function of technological improvements in the model The new endogenous growth.

LITERATURE AND RESEARCH METHODS

Literature Review

Correlation between macroeconomic variables such as FDI and economic growth often made as a teaching both theoretically and empirically. Some authors and researchers as well as many academics who are conducting ongoing research mainly on the economic effects of FDI and GDP in the countries that are developing. According Borensztein Et. al (1998) a consensus has not developed on the results of the analysis of a study, there are some summaries of several studies that have and will be made as the study of the theory of the future, by looking at the size and the impact of FDI on economic growth in many developing countries over the period 1970 -1979, using a variety of the usual multiple regression model and panel data regression. From some of the results of these studies provide a conclusion that the presence of FDI relationship to other macroeconomic variable which many consider to contribute to GDP and economic growth in some countries. Average almost most of the research that has been done in the conclusion that the FDI has a positive effect on economic growth because of factors other macro-economic determinants of.

According Carcovic and Levine (2002) and Nair-Reichert et. al (2000), who conducted the research using causality test and using fixed effects as well as effects panel data estimation methods random between FDI and economic growth in some developing countries over the period 1971-1995 interval. By using econometric analysis, the researchers believe the presence of the influence of the effects of FDI on economic growth varies across developing countries in doing research. Although there are differences between countries in doing research, but the results showed that the effect of FDI on a country's GDP in high value in open economies of scale. Researchers are of the opinion that the influence of economic variables earlier FDI to GDP of a country during an interval in the period 1960-1995 do that research, using statistical techniques and the latest econometric models seen that FDI has no effect on the rate or variable GDP alone. In Chowdhury and Mavrotas (2003) and Lyroudi et. al (2004), provides the empirical results using innovative econometric methods to define the direction of causality between FDI and economic growth in some developing countries such as Chile, Malaysia and Thailand, indicate that FDI has no significant effect on economic growth in transition countries. With the implementation of Augmented Dickey Fuller (ADF) unit root test and Toda-Yamamoto causality test for time-series data period 1969- 2000. Empirically, the study concludes that the GDP is the cause of FDI in Chile, there is a twoway causality between FDI and GDP in Malaysia and Thailand. they examined the effects of FDI on economic growth of transition economies. In contrast to those Roy and Berg (2006) who conducted research on several countries in Eastern Europe and the Balkans in the period 1995-1998. From the results of their papers found their consideration of whether FDI inflows have contributed to the growth of the US economy in their research covers the period 1970-2001. The study is to attempt to determine a two-way relationship between FDI and GDP in the country in doing research. Similar to previous research studies using time-series data and simultaneous equation model. Recording found their positive and significant impact on economic growth in the country in doing research.

In a paper Erçakar and Yılıgör (2008), Deger and Emsen (2006) who studied variables FDI and economic growth in some countries making the transition economies in the period 1990-2002 for the region Central European countries, East and West as well as several countries in region through a panel data regression analysis. The results of the research they have done indicated FDI has a positive effect on the economies in transition, as well as their long-term relationship between FDI and economic growth in the 19 countries using data carriers period 1980-2005 through panel unit root test and co-integration test panel. However Ekinçi (2011) conducted a study to look at long-

term relationship between FDI and economic growth in Turkey the data period 1980-2010, analysis model that is in use by Ekinici not to apply Granger causality test, so the results can be concluded there is a two-way relationship between FDI and economic growth.

Research Method

Data and Time research

In this study the authors use data on FDI and GDP of 204 countries in the whole world for data FDI and GDP in 2014. The authors conducted this study during the month of February 2016. The study will be undertaken by this author guided by the analysis model Anghelache et al, 2012;. Chamberlin, 2011; Anghelache, 2008; Colloredo-Mansfeld, 2005, Constantin, 2013;. Mitruț et al, 2014; Ionesco and Mândreici 2010. The two indicators can be presented in summary form as follows:

Table 1. GDP and FDI in million 2014

No.	COUNTRY	FDI	GDP
		\$ millions	\$ millions
		2014	2014
1	Afghanistan	49	20.038
2	Albania	1,149	13.212
3	Algeria	1,505	213.518
4	Andorra	0	3.249
5	Angola	1,922	138.357
6	Antigua and Barbuda	167	1.221
7	Argentina	6,055	537.660
197	Uzbekistan	751	62.644
198	Venezuela, RB	0	381.286
199	Vanuatu	13	815
200	Vietnam	9,2	186.205
201	West Bank and Gaza	127	12.738
202	Yemen, Rep.	-738	35.955
203	Zambia	1,508	27.066
204	Zimbabwe	545	14.197

USD, at the level of 1 \$ = 14.000 IDR .

Source: www.worldbank.com.

Research Data Analysis

In this context, the analysis of the relationship between two variables macro-economic indicators, using a linear regression model of the model adoption of two variables instead of three variables as in Anghelache et al., (2014). With the form of the following equation:

$$y_i = a + b_1x_{1i} + c_i$$

FDI or commonly referred to as direct investment is a variable Y, while the Gross Domestic Product (GDP) is its variable X, the model to reflect the effect of terms that are not considered when building a linear regression model.

RESULTS AND DISCUSSION

By using a regression model that made the authors can estimate model parameters using the least squares method and the statistical significance of the parameters included. Results Obtained by using statistical software are as follows:

Figure 1. The results of the regression model parameter estimates
Dependent Variable: FDI

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	147.9111	20.02415	7.386634	0.0000
GDP	-8.83E-06	1.27E-05	-0.693910	0.4885
R-squared	0.002402	Mean dependent var		144.5436
Adjusted R-squared	-0.002586	S.D. dependent var		275.7561
S.E. of regression	276.1124	Akaike info criterion		14.08934
Sum squared resid	15247614	Schwarz criterion		14.12210
Log likelihood	-1421.024	Hannan-Quinn criter.		14.10260
F-statistic	0.481510	Durbin-Watson stat		2.040916
Prob(F-statistic)	0.488544			

Sources : Proceed by author

By using a regression model that made the authors can estimate model parameters we can see in [Figure 1] that the model was not statistically significant after applying the F test, the result is more than the reference value based on the table, is used to test the validity of econometric models. Also, the proposed model, shall have a significance level of zero Prob (F-statistic), far higher than 5%. For each independent variable and constant in their report the standard error of the coefficient, t-test statistics and probabilities associated. With the use of a 5% level of relevance, the probability attached to the t-test statistic is below that level only for a "final GDP" exogenous variables. Free term coefficient is not significant because the probabilities attached to the t-test statistic is higher than the threshold of significance of 5%.

If we look at [Figure 1] above probabilistic value for its C significantly while its GDP was not. Adjusted R Squared also very low, then it is ensured that the regression model that created the model is not perfect. So it can be made the conclusion that the model generated by the software analysis, multiple regression model that describes the relationship between the two macroeconomic indicators can be written in the form of an equation under the following form:

using the least squares method and the statistical significance of the parameters included. Results Obtained by using statistical software are as follows:

Estimation Command:

```
=====
LS FDI C GDP
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Estimation Equation:

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=====
FDI = C(1) + C(2)*GDP
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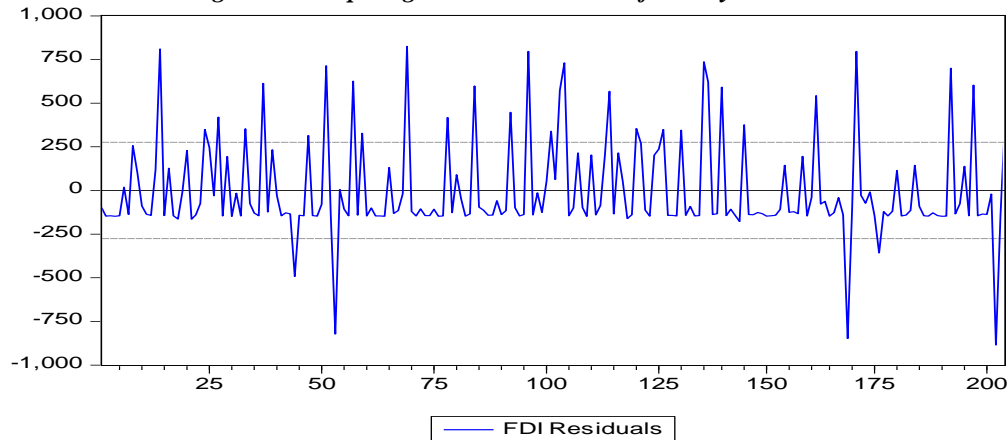
Substituted Coefficients:

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=====
FDI = 147.911085771 - 8.83066305502e-06*GDP
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It should be underlined that, for the reduction of the amount of GDP by one million FDI, GDP will decrease by

8.830663 with others while maintaining a constant variable with notes other factors included in the model remain constant. Therefore there is a direct relationship between global GDP and indirect global FDI in 2014.

Figure 2 : Graphic global FDI and GDP for the year 2014



Sources : Proceed by author

To need to know that the value of term smoking can significantly lower compared with the analysis of single factor based on the type of regression equation in the offer on the model, but the thing that allows us to conclude that the use of regression models multifactor recommended to be included in the macro-economic analysis is a matter which can be justified, and on a general analysis of the regression equation would approach macro-economic indicators and the evolution / forecasts.

From the viewpoint of statistical test results that verify the accuracy of econometric models considered, it can be seen that the test scores R^2 and R^2 - adjustable height ($R^2 = 2.4\%$ and adjusted $R^2 = -2.5\%$), can enable us give a conclusion that in the correct model and with minimal risk to the economic analysis. We can also see that the introduction, in a model that requires variable additional factors can cause a decrease when compared to the possibility of a simple linear regression.

CONCLUSION

If the view of the model of understanding the methodology, the use of linear regression model allows researchers to draw conclusive results in macro-economic analysis, without stating that single-factor regression model does not allow observation relevant to the evolution of the international economy. Given the above considerations, it is understood that the selected model can represent to illustrate the impact of the global FDI and on the growth of global GDP. Linear regression analysis model has followed the evolution of global FDI in terms of changes in global GDP in 2014. The results of this study may help us to describe the linear relationship between the variables studied. Linear regression models estimated proved to be one of the characters right, because it has a high ratio of determination $R^2 = 0.002$, so that almost 2% FDI is explained by the independent variables included in the model. Based on all the comments made following the analysis of global GDP using the regression model, concluded that this indicator is strongly influenced by changes in the global GDP.

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