Impact of FDI on GDP: A Comparative Study of Mozambique and South Africa

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Abstract

Foreign Direct Investment (FDI) is regarded as vital injections incentive to the Mozambique and South Africa countries to improve and accelerate the economic growth. A few studies have been made in these two countries. This paper used yearly secondary data of Mozambique and South Africa covering the period1996-2014 to examine the effects of FDI on Gross Domestic Product (GDP). The variables used in this analysis are GDP is used as a dependent variable while Total Labour Force, human capital and Gross Fixed Capital Formation variable were regarded as independent variable. By using ordinary Least Square method of regression, the results from regression shown FDI is not significant but have positive relationship with economic growth for Mozambique. While for South Africa, FDI and total labour force is significant at the 10% level but have negative and positive relationship respectively with economic growth. It is important for both countries to improve its sectors of electricity supply and logistics and its business climate as well as to improve the governance in order to maintain a long run economic development and growth.

Keywords: Foreign direct Investment, GDP, Least Square method, Mozambique, South Africa.

Introduction

Foreign Direct Investment (FDI) is regarded as vital injections incentive to the developing countries to improve and accelerate economic growth. FDI inflows are useful to countries in various economic sectors such as financial resources, technology know-how and skills. Since most of the developing countries are experiencing a lack of financial resources, level of technology and skills. Foreign Direct investment is a vital factor for sustainable economic development and poverty alleviation as developing countries seek for FDI inflows to improve their economic growth. Most of FDI in Africa is injected in private sectors such mining, oil extraction, gas discovery, banking services, and other infrastructures such as telecommunication service road and airport construction for tourism point of views. According to Andreas (2006) who employed both cross section and panel data on 90 countries for 1980-2002, his result showed that FDI inflows brings about (a positive impact on) economic growth in those selected developing countries. Moreover, Ndikumana and Verick (2008) and Lumbila (2005) argued that FDI has a positive significant influence on economic growth to developing countries. FDI inflows to developing countries have different opinions by the scholars and researchers. Some researchers believe that FDI could be more helpful to developing countries to finance their long-term investment and can bring about positive effect in the economic growth while others argued that FDI is not helpful for the developing countries to attain and sustains economic development growth. Hence, they have to make good polices in order to attract FDI inflows. They have to analyse on which priority areas that FDI inflows are needed in order to promote their economic growth. Alfaro (2003) argued that FDI inflows can be more helpful to developing counties because it act as source of valuable technology and know-how to host developing countries by promoting linkages with local firms through MNEs. According to the World Investment Report (2013) by UNCTAD, the potential attractiveness for foreign investment in South Africa is higher compared to other countries, however performance is relatively low in terms of FDI attraction although the country progress through the investment potential in infrastructure. South Africa is the third country in terms of FDI inflows in Africa, after Nigeria and Mozambique. However Mozambique is the third host country for FDI in Southern Africa enjoying its maritime opening. The flows have been supported in recent years, particularly since 2011. In 2014, Mozambique has attracted more than 4 billion EUR of foreign direct investment, substantial higher than in 2013. The discovery of new gas fields generates a significant increase in foreign investment. The country has varied natural resources (energy, mining, agriculture, forestry, and fishing). Moreover, its geographical location gives it a special place in the field of transport. This consistency in driving of reform and sound economic policies and its public enterprises privatization program also offer great opportunities for foreign investors. This brief overview on the investment in these countries let us understand the amount of FDI that flows in

Mozambique and South Africa are enormous to maintain a sustainable GDP growth. Mozambique and South Africa need FDI is due to the fact that the FDI is very vital source of capital formation mostly when they have low level of capital base. Therefore FDI inflows allow countries to create surplus in the capital account and promotes jobs opportunities and reduce the level of unemployment and poverty reduction. It is also important for transferring technology to developing countries. This will in turn help to improve the local production method resulting into better production and outputs, moreover, an increasing in terms of FDI amounts will have positive impact on the economic growth of the country especially the GDP. In another term FDI contribute to economic growth through different (channels) channel. Its affect GDP through being a source of capital formation. The gross domestic product (GDP) is one of the most used measurements to measure the production of an economy. According to Samuelson and Nordhaus (1948) in their book titled Economics, they argued that GDP allows policymakers and central banks to judge whether an economy contracts, if it is expanding, if it needs a boost or restraint, and if a threat as a recession or inflation looms on the horizon. If GDP is considered as source of judgment if it is important for African countries to set up some policies in order to increase GDP making FDI to be one of the key element to increase the GDP .According to Chenery and Strout (1966), they advocated that most countries were able to attain economic revolution by screaming for foreign aid and foreign direct investment in particular during 1966. Both developed and developing countries seek for FDI to improve their economic development. According to index mundi website the GDP composition by sector in Mozambique consists of three sectors such as Agriculture, Industry and Service. Agriculture has 28.7.6% of total GDP, Industry has 24.9% of total GDP and Service has 48.4% of total GDP while South Africa, Agriculture has 2.6% of total GDP, Industry has 29% of total GDP and Service has 68.4% of total GDP. The aim of this paper is to examine the effect of FDI on GDP of South Africa and Mozambique using multiple regressions, and further identify and recommend which lessons South African and Mozambique should learn from each other. The paper is structured into four sections. Following the introduction in section I. Section II takes the literature review. Methodology, results and discussion occupies section III while section IV takes conclusion.

Related literature Review

FDI is one of the economic significant indicators to be injected in the economy for the economic development in the long-run for Mozambique and South Africa countries. Many researchers have been more interested in examining the impact of FDI on economic growth. According to the study by Bezuidenhout (2009) argue that FDI is very significant indicator to influence economic growth. Bezuidenhout (2009) also further explain that FDI inflows will be properly managed if a country has potential incentive good criteria, then, more FDI inflows will flow and generate positive impact on GDP. Anyanwu (2012) analyses factors that influence FDI inflows Africa" found that market size, openness to trade , foreign aid, rule of laws and past FDI inflows had a positive effect on FDI inflows while higher financial development as a negative effect on FDI inflows. Hanson (2001) found that the FDI inflows spill-over for host countries is weak. According to Lall (2002), FDI inflows may influence various economic factors that affect economic growth and FDI inflows vary over time from one host country to another. He also argued that the effect of FDI on growth cannot easily be measured directly due to the fact that its impact depend on how it affect other factors. Gorg and Greenwood (2002) by examining the micro-data relating to spillovers from foreign firms investors to domestic firms, their results showed that FDI inflows generates negative effect on growth. De Mello (1999) found that FDI had a negative effect on non-OCED countries since FDI inflows decrease total factor productivity growth. Dondeti and Mohanty (2007) argue that FDI inflows can provide (proved) a ready market to the world and acts as key measure player for the host country to participate in the globalization process. Chowdhury and Mavrotas (2003) argued that the impact of FDI inflows to economic growth cannot be accessed within short-run period since its impact to economic growth rely on other factors such   the level openness in the economy and human capital base in the host country . FDI impacts to economic growth should be measures in the long-run period. Gorg and Greenway (2002) advocated that FDI can be seen as one of the sources of capital and technology that Mozambique and South Africa countries may rely on their servings or can find another way by seeking loans from global markets and other internal and overseas financial institutions in order to raise their capital base needed to finance their project for economic growth. They also pointed that countries which are in need of FDI in terms of technology and capital must advocate their limited resources for conducting domestic research and development that can lead them for technological sophistication. Townsend (2003) claimed the relationship between FDI and economy growth is uncertain. Moreover, some researchers think that impact of FDI to economic growth base on theoretical and analytical findings assuming that FDI is very useful indicator for economic growth to developing countries. The study of Carbolic and Levine (2002) examined the relationship between FDI and economic

growth for 72 countries covered the period ranging from 1960-1995. Their findings showed that FDI inflows did not affect an independent influence on economic growth to both developed and developing countries. Bora (2002) argued that FDI inflows may cause large scale environment negative impact if it is not well properly implanted in mining sector. Değer and Emsen (2006) by examining the relationship between FDI and economic growth for 27 transition economies covered the period from 1990-2002 by making distinction of Central Eastern Europe and Central Western Europe Asian countries by using panel data regression analysis. They found that FDI inflows have positive effects on transition economies. According to the study conducted by Mwilima (2003) on the impact of FDI on economic growth in 73 countries, argued that FDI is not a useful and instrument tool for development. He also argued that that the incentives and tax holiday adopted by most Africa countries to attract FDI inflows have not bear fruit, instead adding more economic problems to some countries such as South Africa, etc. Ercakar and Yılgör (2008) by examining the long-term relationship between FDI and economic growth in 19 selected countries by using the data covered the period of 1980-2005 using panel data unit root test and panel co-integration test. Their result by using the panel data unit root test showed that FDI and GDP do not have unit root test while the result of using panel co-integration test showed that co-integration test verify the long-term relationship between FDI and GDP. Khawar (2007) examined the impact of FDI on economic growth using OLS from 1970-1992 found that the FDI is significant and positively correlated on GDP. Athukorala (2003) examined impact of FDI on GDP using time series found that FDI is not a solely economic tool to influence economic growth. Moreover, Hermes (2003) , O'Sullivan & Sheffin (2003) explained that the impact of FDI on the GDP of a country is aimed to stimulate GDP at large when the economy is influence by high rates of unemployment, this in turn , it also increase wages.

Methodology

This paper used multiple by using Ordinary Lest Square (OLS) method for data analysis. The introduction and inventions of technology change leading to change the production function, resulting into more output, I also introduce net export (NX) as the measure of foreign trade in the economy. Assuming constant technology, any increase in the amount of labor and/or capital will increase the level of output in the economy. The study by Barro and Sala-I Martin (1995) show that they expanded this production function according to the new growth theory. The model to be used in this study is shown as follows:

$$GDP = \beta_0 + \beta_1 GCF + \beta_2 LFT + \beta_3 FDI + \beta_4 HC + \varepsilon$$

$GDP = \beta_0 + \beta_1 GCF + \beta_2 LFT + \beta FDI_3 + \beta_4 HC) + \varepsilon$

Where:

GDP = Gross Domestic Product (in $)

GCF = Gross Fixed Capital Formation % on GDP

FDI = (in $)

LFT = Labour Force Total of country

HC = Human Capital

We used five variables such as: Gross Domestic Product (GDP), Foreign Direct Investment net inflows (FDI), Gross Fixed Capital Formation (GCF), Labour Force Total (LFT) covering the period from 1996 to 2014 using Least squares method. Data was collected from World Bank and UNCTAD database and Human Capital (HC) from Human development Index.

Results and Discussion

Table 2 and Table 4 represent the summary of statistics for Mozambique and South Africa. The levels of FDI in Mozambique have been increased yearly compared to South Africa. FDI in Mozambique has been increased from USD $ 64400000 bil to USD $ 6700000000 from 1996 to 2014 while South Africa has been increased from USD $550000000 to USD $ 9890000000 1996 to 2014. FDI has small deviation compared to South Africa. We run the multiple regression for Mozambique and South Africa separately based on the above specified model and we obtain the following results shown below respectively. Table 3 and Table 5 show the estimated regression explaining the impact of FDI on GDP of Mozambique and South Africa respectively. Table 3 shows that FDI is not significant but have positive relationship with GDP of Mozambique despite the amount of FDI inflows in this country (Table 1). This can be explained by others factors which are outside our model such as forming good

policies through utilization to the priorities sectors which in turn affect economic growth. Others independents variables are not significant. Table 5 shows that both FDI and total labour force are significant at level of 10% respectively. However, FDI has negative relationship with GDP but Total Labour force has positive relationship with GDP. This result is consistent to the study by Gorg and Greenwood (2002). Moreover, such results can be influenced by other factors that are outside of the model such as lack of transparency and lack of adequate infrastructure. Other independent variable Gross Fixed Capital Formation and human capital are also not significant to South Africa.

Conclusion

This paper intends to examine the impact of FDI on GDP of Mozambique and South Africa covering the period for 1996-2014. We employed five variables: GDP (dependant variable) and other four independent variable such as FDI, Total Labour Force, human capital and Gross Fixed Capital Formation. After running Ordinary Least Square (OLS) method of regression; we found that FDI is not significant but have a positive relationship with GDP while South Africa has negative relationship with GDP. From the literature review perspectives we expected that FDI in South Africa would be positive affecting its economic growth as the case of Mozambique, but however the impact of FDI in South Africa is negative .It is important for both countries to improve its sectors of electricity supply and logistics and its business climate as well as to improve the governance.

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Appendix

Table1: GDP and FDI in Mozambique and South Africa

YEAR	MOZAMBIQUE		SOUTH AFRICA	
	GDP	FDI	GDP	FDI
1996	3241719358	72500000	1.47608E+11	816389273.8
1997	3810025426	64400000	1.52586E+11	3810543923
1998	4324474011	212700000	1.37775E+11	550338596
1999	4536278938	381700000	1.36632E+11	1503332454
2000	4310090791	139200000	1.36362E+11	968831356
2001	4075049538	255416251	1.21516E+11	7270344986
2002	4201332885	347584940	1.15482E+11	1479804589
2003	4666197195	336698815	1.75257E+11	783136092.3
2004	5697991242	244703873.4	2.28594E+11	701422007.6
2005	6578515331	122413755.6	2.57772E+11	6522098178
2006	7095918239	185376653.3	2.71639E+11	623291744.3
2007	9115528844	416689348.4	2.99415E+11	6586792253
2008	11050262133	559119391.3	2.8677E+11	9885001293
2009	10718503687	899291141.6	2.95936E+11	7624489974
2010	10119169260	1258161877	3.75349E+11	3693271715
2011	13197133578	3645044842	4.16597E+11	4139289123
2012	14934374229	5635092659	3.97386E+11	4626029122
2013	15457196860	6697422432	3.66058E+11	8232518816
2014	16385584919		3.49817E+11	5740650679

Source: author's construction based From World Bank, 2015

Table 2: Summary statistics for Mozambique

Variable	Obs	Mean	Std. Dev.	Min	Max
GDP	19	8.08E+09	4.42E+09	3.24E+09	1.64E+10
GCF	19	19.39353	4.84125	13.19378	30.95058
FDI	18	1.19E+09	2.00E+09	6.44E+07	6.70E+09
LFT	18	9734366	1395178	7576099	1.21E+07
HC	7	0.362857	0.038295	0.285	0.393

Source: author's construction from Stata 12.0 software

Table 3: Regression results for Factors affecting GDP in Mozambique

VARIABLE	β -Coefficient	Std. Err.	t-Statistic	P>|t|
FDI	0.628931	1.019469	0.62	0.6
GSF	-2.06E+08	4.30E+08	-0.48	0.68
LFT	2947.355	8933.925	0.33	0.773
HC	-4.89E+10	2.77E+11	-0.18	0.876
Constant	-9.90E+08	3.13E+10	-0.03	0.978
R-squared = 0.9608				
Adjusted R-squared = 0.8824				
F-statistics = 12.25				
P-Statistics = 0.0769				

Source: author's construction from Stata 12.0 software

Table 4: Summary statistics for South Africa

Variable	Obs	Mean	Std. Dev.	Min	Max
GDP	19	2.46E+11	1.04E+11	1.15E+11	4.17E+11
GCF	19	18.79998	1.899844	15.74461	23.00551
FDI	19	3.98E+09	3.07E+09	5.50E+08	9.89E+09
LFT	18	1.71E+07	1446805	1.43E+07	1.94E+07
HC	7	0.636429	0.0179244	0.608	0.658

Source: author construction from Stata 12.0 software.

Table 5: Regression results for Factors affecting GDP in South Africa

VARIABLE	β –Coefficient	Std. Err.	t-Statistic	P>|t|
FDI	-49.72648	16.77083	-2.97	0.097*
GSF	-5.38E+09	1.76E+10	-0.31	0.788
LFT	261576.3	73310.23	3.57	0.07*
HC	-7.20E+12	3.10E+12	-2.32	0.146
Constant	5.43E+11	9.68E+11	0.56	0.631
R- square = 0.9445				
Adjusted R- square = 0.8334				
F-statistics = 8.51				
P-Statistics = 0.1080				

Source: author construction from Stata 12.0 software.

The symbol **(*), (**) and (***)** show that coefficient are statistically significant at 10%, 5% and 1% levels respectively.