The Effect of Foreign Direct Investment (FDI) on the Ghanaian Economic Growth

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To cite this article:

Received: May 20, 2017; Accepted: July 31, 2017; Published: August 16, 2017

Abstract: Foreign direct investment (FDI) has been an important source of economic growth for Ghana, bringing in capital investment, technology and management knowledge needed for economic growth. This paper studied the relationship between FDI and economic growth in Ghana for the period 1980-2012 using time series data. The data used in this study was mainly from a secondary source consisting of yearly observations for real GDP growth and foreign direct investment net inflows as a percent of GDP (FDI ratio). The data was sourced from the World Banks World Development Indicators database. The linear regression technique was applied using the yearly data to ascertain the effect of FDI on real GDP. The study establishes that FDI and other two control variables under consideration impact significantly on the economic development of Ghana. It was determined in the research that the increasing trend of FDI inflows has also significantly increased the GDP of the country. Therefore, the FDI inflows to Ghana is a key driver for economic growth and development and that it does not only boost capital formation but also enhances the quality of capital stock in the country.

Keywords: Economic Growth, Foreign Direct Investment, GDP, Ghana

1. Introduction

Foreign direct investment (FDI) can be defined as the net inflows of investment to acquire a lasting management interest (10 percent or more of voting stock) in an enterprise operating in an economy other than that of the investor, and it is the sum of equity capital, other long-term capital, and short-term capital as shown in the balance of payments. It usually involves participation in management, joint venture, transfer of technology and expertise [1]. The foreign capital injected into the host economy could contribute to physical capital formation, while employee training can contribute to skill development in the country. In other words, FDI can contribute to the development effort of a country through factor accumulation – physical and human capital – or through improvements in total factor productivity [2]. However, the empirical evidence shows that neither of these benefits can be presumed.

In terms of capital accumulation, [3] and other writers show that investors often fail to fully transfer capital upon taking control of a foreign company; instead, they tend to finance an important share of their investment in the local market. If foreign firms borrow heavily from local banks, instead of bringing scarce capital from abroad, they may exacerbate domestic firms’ financing constraints by crowding them out of domestic capital markets [4].

The role and importance of FDI have been at the center of a debate over which public policies are most suitable for changing the emaciated state-owned economies of the former socialist world into competitive market systems [5]. Some scholars have claimed that countries which attracted large amounts of FDI were able to more easily overcome the challenges of rapid economic reform by privatizing state-held assets to foreign investors, and in doing so permitting efficiency gains, facilitating technology transfers, and improving access to world markets.

While a variety of case studies and small country comparisons confirm the idea that FDI has a positive impact [6] and [7], other researchers contend that FDI has had primarily negative implications for countries, including the destruction of existing production networks, the promotion of low-wage, low-value-added manufacturing, and the permanent dependence on foreign economic actors. This
therefore creates a dilemma and the question about the impact of FDI on the growth of a lower middle income economy such as Ghana becomes legitimate at this point. In trying to apply a linear relationship, contrary to [8] this study applied a time series regression switching the focus to a recipient country, specifically, a developing country such as Ghana.

2. Literature Review

The most widely accepted definition of FDI is known as “the IMF/OECD benchmark definition” because it was provided by a joint workforce of these two international organizations with the objective of providing standards to national statistical offices for compiling FDI statistics. The gist of the definition is that FDI is an international venture in which an investor residing in the home economy acquires a long-term “influence” in the management of an affiliate firm in the host economy. According to the definition, the existence of such long-term influence should be assumed when voting shares or rights controlled by the multinational firm amount to at least 10 percent of total voting shares of rights of the foreign firm.

There are two types of FDI: inward foreign direct investment and outward foreign direct investment, resulting in a net FDI inflow (positive or negative) and "stock of foreign direct investment", which is the cumulative number for a given period. Direct investment excludes investment through purchase of shares. FDI is one example of international factor movements.

2.1. The Direct Impact – A Neoclassical Model

Early studies on economic growth commonly used the aggregate production function approach [9]. They attempted to describe the relationship between an economy’s output and tangible primary inputs (or capital and labour). Notably, these studies integrated the aggregate production function using macroeconomic data. The appealing simplicity of this neoclassical framework has made it the backbone of applied and theoretical work on capital accumulation and economic growth. Despite its popularity, however, the neoclassical model leads to several troubling results.

First, because capital accumulation is subject to diminishing returns, without exogenous technical progress steady growth in per capital income cannot be realized. This is a major weakness of the model since it does not explain technical progress at all. Moreover, despite being totally unexplained, [10] attributed 90% of U.S per capita output growth to exogenous technical progress. Other limitations of the neoclassical model are associated with the definition of the term capital accumulation. The Solow’s model considers investment to be purely in tangible assets. Since then, much more has been discussed on the definition of capital itself. For instance, [11] stated that there is an increasing consensus that the role of capital in economic growth should be broadly interpreted.

In the new investment there were also included the reinvested earnings, causing the outflows to exceed the inflows even more. Hence, most FDI was coming through capital raised in the host country instead of the U.S. which led FDI to cause a redistribution of capital from labor intensive countries to capital intensive countries. [12] identified another factor that caused the negative effects of FDI on growth, the price distortions due to protectionism and monopolization and, finally, natural resources depletion.

The glass-ceiling between the neoclassical model and the new growth theory is the introduction of the technology function. While the former assume technological progress to be exogenous, the latter explains technological progress as a form of investment spillover arising from different sources, for example: tangible capital, human capital, or research and development expenditures. More importantly, however, both the neoclassical and the new growth models defined capital accumulation (or formation, in the latter’s case), as key ingredients to growth. Based on the arguments, it can be deduced that if FDI contributes to both growth (direct impact) and domestic investment (indirect impact), then its overall impact can be substantial. Thus, depending on the size and level of spillover it creates, FDI represents a potential source for sustainable growth and development.

2.2. The Indirect Impact or FDI Spillovers

According to [3], the main reason to examine FDI spillovers from MNFs to indigenous firms is to understand the contribution of inward FDI to host country economic growth. Country level experiences suggest two types of FDI spillovers, namely: negative and positive. Early theories on FDI and spillovers on host economies were advocated by the dependency theorists. Basically, dependency scholars viewed FDI from the developed countries as harmful to the long-term economic growth of developing nations.

2.3. FDI Inflow in Ghana

Foreign direct investment (FDI) in developing economies has grown rapidly following financial and political transformation. To increase their share of FDI inflows, most countries have eased restrictions on foreign direct investment, strengthened macro stability, privatized state-owned enterprises, instituted domestic financial reforms, capital account liberalization and granted tax incentives and subsidies. Ghana for instance through the Free Zones Act, 1995 and the Ghana Investment Promotion Act 1994 has granted certain tax incentives and investor protection policies to attract foreign investors and also make the environment conducive for their operations. This initiative and policy taken in Ghana have increased the number of foreign direct investment and helped in economic growth.

Attracting FDI is a preoccupation of Ghana’s opening up policies and economic reforms. Various Governments in Ghana have developed various new legislations to improve investment conditions and the business environment in order to attract FDI, putting Ghana in the top ten reformers globally for the second year in a row, according to the World
Bank’s Doing Business team.

Ghana’s shares of FDI quadrupled from 2005 to $636M in 2006 and represent 19.4% of gross fixed capital formation according to 2008 World Investment Report (WIR). Still in 2008, Ghana experienced increased global attention as a result of hosting the 2008’s Africa Cup, the UNCTAD XII (United Nations Conference on Trade and Development) and WAIPA (World Association of Investments promotion Agencies) meetings. This attention comes at a time when the country has had strong GDP growth and significant increases in FDI inflows.

2.4. The Impact of Foreign Direct Investment

Over a long period of time FDI creates many externalities in the form of benefits available to the whole economy which most companies cannot appropriate as part of their own income. These include transfers of general knowledge and of specific technologies in production and distribution, as well as industrial upgrading, work experience for the labor force and the introduction of modern management and accounting methods. The establishment of finance related and trading networks, and the upgrading of telecommunications services may also occur. FDI in services affects the host country’s competitiveness by raising the productivity of capital and enabling the host country to attract new capital on favorable terms. It also creates services that can be used as strategic.

[13] examined empirically the relationship of FDI and economic growth in developing countries. They showed that FDI allowed for transferring technology and for higher growth when the host country had a minimum threshold stock of human capital. Their results indicated also that the main way that FDI increases economic growth is by increasing technological progress, instead of increasing total capital accumulation in the host country. They used the gross FDI which refers only to inflows, reported in the “International Financial Statistics”, and for economic growth they used the growth rate of income as the average annual rate of per capita real GDP over each decade. Their results indicated that for host countries with very low levels of human capital the direct effect of FDI on growth is negative, otherwise it is positive.

In another paper, [14] employing panel data on 22 African countries for the period 1984-2000 empirically examines the impact of several variables including natural resource endowment, macroeconomic instability, FDI regulatory framework, corruption, effectiveness of the legal system and political instability on FDI flows. The paper debunks the notion that FDI in Africa is solely driven by natural resource availability and concludes that natural resource endowment, large markets, good infrastructure and an efficient legal framework promotes FDI while macroeconomic instability, corruption, political instability and investment restrictions deter investment flows. The result implies that governments in the region can play major roles in promoting FDI to the region through appropriate policy framework, and that FDI to Africa is not solely driven by natural resources endowment but also by other factors. In the short and medium term, government can increase their FDI by streamlining their investment regulatory framework, implementing policies, which promote macroeconomic stability and improve infrastructure. In the long run, more FDI can be achieved by curbing corruption, developing a more efficient legal framework and reducing political instability [14].

In similar works, [15] investigated the impact of foreign direct investment (FDI) on gross domestic product (GDP) in Pakistan from 2006 to 2010. The growth of gross domestic product (GDP) was also measured in their study. The study employed a multiple regression model to measure the association among gross domestic product (GDP), foreign direct investment and Inflation. The results specified that FDI and inflation (CPI) were independent variables and GDP was the dependent variable, [15] concluded that there is positive and significant connection between GDP and FDI, however, a negative and significant relationship was found between GDP and inflation.

Another study by [16] determined the contribution of FDI inflows in economic growth of Pakistan. [16] used time series data spanning from 1990 to 2015. The findings of the study are based on Unit root test which gives the evidence that data was stationery, Johansen Co-integration test which provides the strong evidences for the correlation between variables for long-run, and the regression model used to carry out this process was VECM model which finalize the results related to this study. [16] found that there is significant effect of FDI inflows on economic growth in the long-run and labor force is much correlated with FDI to boost up economic growth if given proper skills and trainings regarding modern technology. The findings of the paper described that in long-run, FDI and Labor force are significant but in short-run both are not much significant and the reason of their low significance is worse conditions of political policies which are unpredictable at every moment so investors are not certain for returns of their investment.

3. Methodology

The main goal of this study was to assess the impact of FDI on the economic growth in Ghana. To achieve this, the study employed a time series regression approach to investigate the relationship and impact. The study assessed the degree of relationship FDI and economic growth herein measured as the real GDP. Other variables such as inflation, and government consumption were added to the regression since they are believed to hugely influence economic growth. The study involved purely secondary sources of data for the completion of the research. Time series data spanning from 1980 to 2012 was therefore used due to the availability of data.

3.1. Research Population

The emphasis was on all the economic and development database containing Ghanaian data.

3.2. Sample and Sampling Procedures

Foreign Direct Investment. Foreign direct investment is
measured as net annual investment inflows. All FDI data are to be drawn from the Ghana Investment Promotion Centre (GIPC) other.

**Economic growth** (measured as real GDP). GDP data is to be retrieved from the World Development Indicators Database.

**Inflation.** Inflation has been found to negatively impact economic growth. The underlying data source is the World Development Indicators Database.

**Government Consumption:** Government consumption is expressed as a percentage of Gross Domestic Product (GDP), has been found to exhibit a negative influence on economic growth, a fact that economists have linked to the changing effects of taxation and government expenditure programs. The data source is the World Development Indicators Database.

**Sample size:** the size of the data is from 1980 to 2012 which sum up to 32.

### 3.3. Research Instruments and Model Specification

The study applied a linear linkage between the study variables to evaluate their relationship. A multiple linear regression model was proposed and performed with the aid of SPSS.

The theoretical framework for the impact of FDI on the economic growth is based on the fact that, FDI has potentially positive or negative impact on the economic growth in the presence of other factors. The approach to modeling this relationship was to regress the FDI on the real GDP. Correlation analysis is a statistical tool that was employed in this study to describe the degree to which the variables are linearly related to one another.

The model is of the form:

\[
GD = \beta_0 + \beta_1 FDI + \beta_2 INF + \beta_3 GSP + \epsilon
\]

Where: FDI is the total foreign direct investment in Ghana; GDP is the real gross domestic product; INF is inflation and GSP is the government of Ghana spending.

Through conducting correlation analysis this study was able to identify the degree of association among the variables. This model puts GDP as dependent variable; and the rest as the explanatory variables. The study also used descriptive statistics to describe and to understand the basic features of the data that will be used in this study. Using this tool one will be able to know the minimum, maximum value, the mean and standard deviation of each variable giving the true characteristics of them.

### 3.4. Data Analysis Procedure

Data obtained from the relevant sources were prepared in the Microsoft Excel application and then transported to the SPSS tool. Univariate data analysis was performed on the four time series data. Simple data diagnostics were followed by some time series analysis. According to the model specified above, the regression analysis was therefore executed to establish the linkage between the variables. The results were then presented in tables and figures for clearer understanding.

### 4. Analysis and Discussion

#### 4.1. Data Presentation

![Figure 1. Trend of FDI to GDP Ratio.](image.png)

The trend of FDI inflows to Ghana can be seen clearly in the figure above. After the low inflows in the 1980’s, FDI inflow increased dramatically in the early 1990’s and declined after 1994. There was a substantial growth between 1998 and 2000 but the FDI to GDP ratio was below 2% in the early 2000’s. From 2006 onwards saw a significance increase in the FDI inflows to Ghana to date.

#### 4.2. Descriptive Statistics

The GDP has a larger standard deviation among all the variables, which supports the general intuition that GDP is highly volatile. The coefficient of skewness is low and positively skewed. The value for kurtosis in each variable is below the benchmark for normal distribution of 3 which
confirms near normality with the exception of inflation. The range of variation between maximum and minimum is quite logical. The Standard deviation, compared to the mean is low which indicates small coefficient of variation. FDI to GDP ratio has an average figure of 2.47% with a coefficient of skewness very low and negatively skewed.

<p>| Table 1. Descriptive Statistics. |</p>
<table>
<thead>
<tr>
<th>FDI</th>
<th>GSP</th>
<th>GDP</th>
<th>INF</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean</td>
<td>2.47</td>
<td>18.07</td>
<td>1453.76</td>
</tr>
<tr>
<td>S E</td>
<td>0.51</td>
<td>0.839</td>
<td>130.66</td>
</tr>
<tr>
<td>Med</td>
<td>1.57</td>
<td>19.19</td>
<td>1240.24</td>
</tr>
<tr>
<td>S D</td>
<td>2.95</td>
<td>4.82</td>
<td>750.61</td>
</tr>
<tr>
<td>S Var</td>
<td>8.69</td>
<td>23.27</td>
<td>563425.9</td>
</tr>
<tr>
<td>Kurt</td>
<td>0.64</td>
<td>-1.25</td>
<td>0.06</td>
</tr>
<tr>
<td>Skew</td>
<td>1.37</td>
<td>-0.23</td>
<td>0.98</td>
</tr>
</tbody>
</table>

4.3. Correlation Analysis

The estimated cross-correlation coefficients among the study variables were measured and have been given in Table 2. The table provides the Pearson correlation for the variables that were used in the regression model.

<p>| Table 2. Correlation Analysis. |</p>
<table>
<thead>
<tr>
<th>FDI</th>
<th>GSP</th>
<th>GDP</th>
<th>INF</th>
</tr>
</thead>
<tbody>
<tr>
<td>FDI</td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>GSP</td>
<td>0.74</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>GDP</td>
<td>0.88</td>
<td>0.78</td>
<td>1</td>
</tr>
<tr>
<td>INF</td>
<td>-0.32</td>
<td>-0.23</td>
<td>-0.46</td>
</tr>
</tbody>
</table>

4.4. Empirical Regression Results

The model is of the form:

\[
GDP = \beta_0 + \beta_1 FDI + \beta_2 INF + \beta_3 GSP + \epsilon
\]

Where: FDI is the total foreign direct investment in Ghana; GDP is the real gross domestic product; INF is inflation and GSP is the government of Ghana spending. The model above was used to ascertain the impact of FDI on economic growth proxy as GDP.

<table>
<thead>
<tr>
<th>Table 3. Summary Output.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Regression Statistics</td>
</tr>
<tr>
<td>Multiple R</td>
</tr>
<tr>
<td>R Square</td>
</tr>
<tr>
<td>Adjusted R Square</td>
</tr>
<tr>
<td>Standard Error</td>
</tr>
<tr>
<td>Observations</td>
</tr>
</tbody>
</table>

In Table 3, this report shows the regression statistics of the proposed model (GDP and FDI). The results suggests that the overall model is significant at level of significance because its p value is 0.00. Further, the R-square of this model is at a higher node i.e., 0.855, which suggests that the only 14.5% variation in this model is unexplained while the remaining variation of this model is explained by FDI and other variables.

The anova table, Table 4, shows the results for the F-test for the statistically significance of the model above. At a 90% confidence level (10% level of significance), the model above is statistically significant. Since the model recorded a p-value of 2.72E-12, this means that, from the analysis, we are more than 99% confident that the model which show the relationship between FDI and economic growth is correct. It is therefore can strongly deduce from this analysis that FDI significantly impact on the development of the Ghanaian economy.

<table>
<thead>
<tr>
<th>Table 4. Anova Table.</th>
</tr>
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<tbody>
<tr>
<td>Df</td>
</tr>
<tr>
<td>Reg</td>
</tr>
<tr>
<td>Res</td>
</tr>
<tr>
<td>Total</td>
</tr>
</tbody>
</table>

Also as expected, the regression analysis results show there is a positive relationship between government expenditure and gross domestic product per capita. This variable is a control variable indicating the GDP of the country is affected by some other factors.

<table>
<thead>
<tr>
<th>Table 5. Variable Output.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Coefficients</td>
</tr>
<tr>
<td>Intercept</td>
</tr>
<tr>
<td>FDI</td>
</tr>
<tr>
<td>GSP</td>
</tr>
<tr>
<td>INF</td>
</tr>
</tbody>
</table>

The coefficient of the FDI to GDP ratio in the regression model has a positive influence the GDP per capital of Ghana which is in line with our initial a priori assumptions and theory for that matter. In addition this variable is significant in explaining the variability in the economic development of Ghana. A major component of capital flow for emerging developing economies is Foreign Direct Investment (FDI). There is however an argument on its contribution towards economic growth. As noted by most researchers agree that the benefits of FDI outweigh its cost to the particular economies, [8] found that FDI does not induce economic growth independently. The contribution of FDI to growth is affected by microeconomic conditions of the country as well as the host country’s specific competitive advantage and its business environment.

Our findings add to such studies and affirms that FDI promote economic growth. FDI is found to have a positive and significant impact on growth when host countries have better level of initial GDP and human capital. This is also in line with [9] which examined the links among FDI and GDP growth.

4.5. Hypothesis Testing

The hypothesis is evaluated from the regression analysis above. This is mostly achieved by looking at the overall significance of the regression model. There has been this one important question about the linear relationship between the FDI and economic growth hence for postulated the hypothesis below:

H0: There is expected to be a negative relationship
between FDI and the host country’s growth, as measured by the GDP, or not any relationship at all.

H1: There is expected to be a positive relationship between FDI and the host country’s growth, as measured by the GDP. The null hypothesis is based on the assumption that FDI causes factor price distortions, monopolization, transfer pricing and worse terms of trade for the recipient country, therefore it reduces that country’s growth.

From the anova table, the significant value of the F statistics of the regression is 2.72E-12 which is far less than 0.01, we can therefore reject the null hypothesis and conclude that, there is a positive relationship between FDI and the host country’s growth, as measured by the GDP. And hence, FDI to Ghana does not cause factor price distortions, monopolization, transfer pricing and worse terms of trade for the recipient country, therefore it reduces that country’s growth.

For the undying debate on FDI and economic growth, this study goes a long way to add to the several authors who believe FDI promote economic growth like [17] who looked at the case study of India from 1974 to 1996 and found that FDI had a positive and significant impact on growth, both in the short and long run. Also, [18] looking at East-Asia and Latin America from the 1960s to 1997 found mixed evidence on the impact of FDI on growth. While FDI was found to be growth enhancing in the long run in Taiwan, Mexico, Hong Kong, Malaysia, and Indonesia, this was not the case in Columbia, Argentina, Brazil, Korea, Malaysia, Thailand and Singapore (however in Singapore FDI has a positive impact of growth in the short run).

5. Conclusions and Recommendations

5.1. Conclusion

Growth of any country depends upon investments, increasing assets and infrastructure. Foreign Direct investment in an economy shows that there is a good trend of investment which ultimately results in increasing the GDP and growth of the country as the study has found from the results that increasing trend of FDI also increases the GDP of the country.

It was also conclude that foreign direct investment (FDI) is as an important catalyst for economic growth in developing countries such as Ghana. FDI affects the host countries’ economic growth by transferring technology, increasing human capital formulation and by stimulating domestic investment, and access to global markets. Thus, foreign direct investment contributes to growth in a substantial manner because it is more stable than other forms of capital flows. It is believed that by providing access to foreign markets, transferring technology and generally building capacity in the host country firms, FDI will inevitably improve the integration of the host country into the global economy and foster growth. FDI is a key driver of economic growth and development and that FDI not only boosts capital formation but also enhances the quality of capital stock.

5.2. Recommendations

Based on the conclusion above, the author gives the following recommendations: Ghana should encourage improved domestic investment to accelerate growth rather than relying on FDI as a prime mover of the economy.

The government should re-visit the issue of local content requirement and also, Ghana should ensure a stable government by guaranteeing the sustainability of democratic rule devoid of unwarranted changes.

Finally, the Government of Ghana should invest in the most critical parts of the economy to attract foreign direct investment.

5.3. Further Studies

i. Future research, when more data become available, could examine possible causality effects between FDI and the host country’s growth.

ii. One can also investigate other factors that might affect or determine these two variables for the transition economies.

iii. Furthermore, future research can investigate the effects of FDI on the level of human capital, since FDI is a means for the adoption and implementation of new technologies and therefore, there will be required training to prepare the labour force to work with the new technologies.

5.4. Limitations

The study did not deal with quarterly and/or half-yearly data, and the information content of those periods have therefore not been captured in this study.

References


