

## Impact of foreign direct investment on gross domestic product: empirical evidence from Nigeria

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### Abstract

Nigeria is one of the developing nations that have consistently received the foreign direct investment inflow as it is believed that this will add to its gross capital formation, technology transfer, competitiveness and industrial productivity among others. Despite the level of FDI attracted by Nigeria compared with its resource base and potential need, the FDI inflow has not translated meaningfully on the economic growth of the country. Perhaps, it has not significantly impacted on the Nigeria Gross Domestic Product (GDP). This study therefore seeks to examine the impact of the FDI on the Nigeria's GDP. This study made use of secondary data, which was obtained from the Central Bank of Nigeria's statistical bulletin, annual reports and statement of accounts. Data obtained spanned from 2000-2014 and were subjected to Dynamic Least Square regression analysis using E-views 7. Findings revealed that FDI has a positive and significant relationship with Nigeria's GDP. This study therefore recommends that: (i) the government of Nigeria should put in place economic policies that will attract more foreign investors and specifically, barriers such as arbitrary tariffs, high tax levies should be seriously reduced among others; (ii) Infrastructures should also be provided, especially power supply, as investors are also interested in the ease and cost reduction aspect of their production; and (iii) the government of Nigeria should also ensure a politically stable environment, as no investor will be willing to invest in a crisis prone environment. This study concludes that if the above recommendations are implemented, there is the possibility of increase and high inflow of FDI, which will positively impact on the Nigerian growth and development at large.

**Keywords:** Foreign Direct Investment, GDP and Monopolistic Advantage Theory

### 1. Introduction

Globalization has indeed offered the developing countries an unprecedented opportunity to achieve faster economic growth through foreign investment. Foreign Direct Investment (FDI) contributes to the host country's gross capital formation, industrial productivity, competitiveness and other spin-off benefits such as transfer of technology, managerial expertise, improvement in the quality of human resources and higher growth (Omankhanlen, 2011) <sup>[19]</sup>. According to Adegbite & Ayadi 2010, FDI helps fill the domestic revenue-generation gap in a developing economy, other benefits being the adoption of foreign technology.

Nigeria is one of the leading African countries that have been receiving foreign direct investment in the past decades, and the Nigerian government has been devising various strategies by using incentive policies and regulatory measures to promote the FDI inflow into the country. Some of these measures encompass privatization, where the management of state-owned enterprises (telecommunication, manufacturing, agricultural production, transportation, electricity and water supply), are completely or partly transferred to private individuals or companies (Lall, 2002) <sup>[15]</sup>. Other measures which Nigeria has used to woo foreign investors into Nigeria are the repealment of laws that are inimical to foreign investment growth and the promulgation of various investment laws (Shiro, 2009) <sup>[25]</sup>. According to United Nations Conference on Trade and Development (UNCTAD, 2014) <sup>[26]</sup>. Nigeria is one of the top three African countries that have constantly received FDI, but despite its large market size and natural resource base the level of FDI attracted by Nigeria is mediocre compared with its potential need, and thus has not translated meaningfully on the Economic growth of the country (Ugwuegbe, Okore, 2013) <sup>[27]</sup>. May be, it has not significantly

impacted on the Nigeria Gross Domestic Product (GDP) and that why it has not meaningfully translated on the economic growth of Nigeria. This study therefore seeks to examine the impact of the FDI on the Nigeria's GDP.

### 2. Literature Review

This section discusses the basic conceptual issues of the study, gave a theoretical background as well as considered previous empirical investigations.

#### 2.1 Conceptual Framework

The relevant conceptual issues were discussed under this heading.

##### i) Foreign Direct Investment (FDI)

The World Bank (1996), conceptualized Foreign Direct Investment (FDI) as investment that is made to acquire a lasting management interest (usually 10% of voting stock) in an enterprise operating in a country other than that of the investors. Foreign direct investment is seen as a veritable source of foreign exchange and technological transfer among developed nations or from developed countries to developing economies like Nigeria (Adeleke, Olowe, Fasesin, 2014) <sup>[2]</sup>. It can be analyzed in terms of inflow of new equity capital, re-investment of unremitted profit, net inflow of borrowing and other obligations from the parent company or its affiliates (Nwankwo, Ademola, Kehinde, 2013) <sup>[17]</sup>. FDI have been broadened to encompass the acquisition of long-run management interest in an enterprise or a company outside the boundary of the investor's home country (Omankhanlen, 2011) <sup>[19]</sup>. FDI have been argued to provide benefits to host economies and these include transfers of general knowledge and of specific technologies in production and distribution, as

well as work experience for the work force, industrial upgrading and the introduction of modern management skills (Antwi, Mills, Zhao, 2013)<sup>[3]</sup>.

## ii) Gross Domestic Product

It represents the monetary value of all goods and services produced over a specific period (Coyle, 2014)<sup>[9]</sup>. Its estimate is usually used for measuring the economic performance of a country or region and can also measure the sectoral contribution of every unit of an economy (Arema, 2014)<sup>[4]</sup>.

## 2.2 Theoretical Background

This study adopts the Monopolistic Advantage Theory (MAT). It was propounded by Stephen H. Hymer in 1960 but was made popular in 1976. The theory argued that a direct foreign investor possesses some kind of proprietary or monopolistic advantage not available to local firms (Burgel, 2000)<sup>[6]</sup>. It suggests that the foreign investors possess monopolistic advantages, enabling them to operate subsidiaries abroad more profitably than local competing firms can. Such advantages are specific to the investing firm rather than to the location of its production (Pitelis, 2002)<sup>[21]</sup>. Stephen Hymer found that FDI takes place because powerful multinational enterprises choose industries or markets in which they have greater competitive advantages, such as technological knowledge not available to other firms operating in a given country. These competitive advantages are also referred to as firm-specific or ownership-specific advantages (Caves, 1974)<sup>[7]</sup>. This theory proposes two major constructs which makes investors consider foreign investments: Superior knowledge and economies of scale (Ryszard, 2005)<sup>[23]</sup>. Superior knowledge encompasses production technologies, industrial organization, knowledge of product and managerial skills. Economies of scale on the other hand occur either through either horizontal or vertical FDI. Horizontal investment brings about reduction in unit cost of services such as marketing, financing and technological research, as each overseas plant produces the same product in its entirety. In vertical investment in which each affiliate produces those parts of the final product for which local production costs are lower, the foreign investor benefits from local advantages in production costs while achieving optimum economies of scale in the production of single components (Ryszard, 2005)<sup>[23]</sup>. According to John and Christos (2008)<sup>[13]</sup> such an international integration of production would be much more difficult through trade because of the need for close coordination of different producers and production phases.

Linking the theory to this study, superior knowledge is seen as the edge factors which foreign investors have over local firms as such making them invest in other countries while the economies of scale is seen as the advantages that accrue to investors for investing in foreign countries.

This theory was however, adopted by Caves (1974)<sup>[7]</sup>, Caves (1996), Ryszard (2005)<sup>[23]</sup>, Pitelis (2002)<sup>[21]</sup>. and John and Christos (2008)<sup>[13]</sup>, among others.

## 2.3 Review of Related Empirical Studies

Using a time series data, Basem, Abeer (2011)<sup>[5]</sup>. investigated the impact of foreign direct investment on the growth of Jordan Economy. Econometric results showed that foreign direct investment do not independently influence Economic growth and that the direction of causation is not towards FDI to GDP

but GDP to FDI. Findings also revealed that FDI has increased in Jordan due to political and implied policy stability.

Uzoka (2012), researched on the impact of foreign direct investment on Nigeria Economic growth. Using multiple regression analysis results revealed that FDI impact positively on the growth of the Nigerian Economy.

Saqib, Masnoon, Rafique, (2013)<sup>[24]</sup>. studied the impact of foreign direct investment on the Economic growth of Pakistan. The obtained spanned from 1981 to 2010. Findings indicate that Pakistan's Economic performance is negatively affected by foreign investment, while domestic investment has benefitted its Economy.

Oyatoye, Arogundade, Adebisi, Oluwakayode, (2011)<sup>[20]</sup>. investigated foreign direct investment, export and economic growth in Nigeria. Findings revealed that a positive relationship exist between foreign investment and GDP. Results further indicate that a one naira increase in the value of direct foreign investment will lead to N104.749 increase in the value of GDP.

Okon, Augustine, Chuku (2012)<sup>[18]</sup>. studied foreign direct investment and Economic growth in Nigeria: an analysis of the endogenous effects. Results showed that FDI and Economic growth are jointly determined in Nigeria. The study posits that enabling policies that attract more FDI to the Economy, greater openness and increased private participation will need to be pursued and reinforced to ensure that the domestic Economy captures greater spillovers from FDI inflows and attains higher Economic growth rates.

Antwi *et al.* (2013)<sup>[3]</sup>. observed that there is a positive relationship between GDP and foreign direct investment of Ghanaian Economy, while trade is positively correlated to FDI. Adeleke *et al.* (2014)<sup>[2]</sup>. Investigated the impact of FDI on Nigerian Economic Growth. It was observed that Economic growth is directly related to inflow of FDI and statistically significant at 5 percent level of significance. Macaulay (2010)<sup>[16]</sup>. Opined that human capital and labour were found to have a positive and significant effect on growth.

Ugwuegbe, Okore (2013)<sup>[27]</sup>. investigated the impact of FDI on the Nigerian Economy. Findings showed that FDI insignificantly but positively impact on GDP.

Using Ordinary Least Square regression analysis, Augmented Dickey-Fuller Unit root test and Granger causality test Eravwoke, Eshanake (2012)<sup>[11]</sup>. observed that GDP does not granger cause FDI in Nigeria. Danja (2012)<sup>[10]</sup>. Researched on FDI and the Nigerian Economy. Results showed a positive relationship between FDI and GDP but that FDI has not contribute much to the growth and development of the Nigerian Economy.

Qaiser, Salma, Ali, Hafiz, Muhammad (2011)<sup>[22]</sup>. Found that a significant and positive relationship exist between GDP and FDI while an insignificant relationship exist between GDP and inflation.

Review of literatures showed that there are lot of empirical studies on the impact of FDI and Economic growth of Nigeria. These studies established a positive and significant relationship between foreign direct investment and Nigerian Economic growth Macaulay, 2010<sup>[16]</sup>. Oyatoye *et al.* 2011<sup>[20]</sup>. Okon *et al.* 2012<sup>[18]</sup>. Eravwoke, Eshanake, 2012<sup>[11]</sup>. and Adeleke *et al.* 2014)<sup>[2]</sup>.

To the best of my knowledge no study specifically considered FDI's impact on the Nigerian Economic growth considering exchange rate alone. And this study also distinct itself from

others by adopting the monopolistic advantage theory which other studies did not consider. This study therefore examines foreign direct investment and Nigerian Economic growth.

**3. Methodology**

This section discusses the model specification, model estimation, sources of data, method of data collection and the method of data analysis.

**3.1 Model Specification**

For the purpose of satisfying the objective of this study, the below model was specified:

$$GDP = f(FDI, ExRat) \dots \dots \dots (1)$$

This is transformed into a linear equation as specified below:

$$GDP_i = \alpha_0 + \lambda_1 FDI_i + \lambda_2 ExRat + e_i \dots \dots \dots (2)$$

Where:

- GDP<sub>i</sub> = Gross Domestic Product (explained variable)
- FDI<sub>i</sub> = Foreign Direct Investment (explanatory variable)
- ExRat<sub>i</sub> = Exchange Rate (control variable)
- $\lambda_1$  and  $\lambda_2$  = Parameter estimates (coefficients)
- $e_i$  = error term

The explained variable is the Gross Domestic Product (GDP), while the explanatory variables are the FDI and Exchange Rate (ExRat)

**3.2 Model Estimation**

To estimate the model, a regression analysis was employed to test the validity of the model. The a priori was used to test for the overall validity of the model. The R2 was used to explain the degree of variation of the dependent variable caused by the independent variables. The t-statistic was used to test for the level of significance for each of the explanatory variables, while Durbin-Watson was used to test for serial correlation.

**3.3 Sources of Data and Method of Data Collection**

This study made use of secondary data which was obtained from the Central Bank of Nigeria (CBN) Statistical bulletins, Annual Reports and Statements of Accounts, spanning from year 2000 to 2014.

**3.4 Method of Data Analysis**

Data obtained were subjected to Dynamic Least Square regression analysis using Economics statistical package for data analysis (E-views 7), while inferences were drawn from analysis.

**4. Discussion of Results**

**Table 1: Regression Results**

Variables	Coefficients	T-statistic	Prob.
C	5.124183	1.529727	0.2236
FDI	23425.33	2.865234	0.0643 ***
ExRat	-3143561.0	-2.477459	0.0895 ***
R <sup>2</sup> = 0.833854			
Adjusted R <sup>2</sup> = 0.390798			
DW = 1.329612			

\*\* indicates 5% level of significance and \*\*\* indicates 10% level of significance

Source: Author’s Computation, 2015

The a priori expectation of the model is that  $\lambda_1 > 0$  and  $\lambda_2 > 0$ . The a priori expectation was satisfied as FDI has positive relationship with Economic growth proxied by Gross Domestic Product (GDP), while exchange rate also has positive relationship with GDP. Thus, imply that the model for this study is valid.

On the grounds of the coefficients of the independent variables, a unit increase in FDI inflow will lead to 23425.33 increases in GDP, while a unit increase in exchange rate will lead to a - 3143561 unit increase in GDP. The coefficient of the constant variable is 5.124183; this implies that GDP will increase with this value irrespective of the relationship of FDI and exchange rate with the GDP.

The result also showed that the t-statistics of the constant variable, FDI and exchange rate are 1.529727, 2.865234, and - 2.477459 respectively with the attendant probability values of 0.2236, 0.0643, and 0.0895 respectively. These imply that with the exception of the constant variable, FDI and exchange rate are both significant at 10% level of significance.

The value of the R<sup>2</sup> is 0.833854, implying that approximately 83% variation in GDP can be explained by FDI and exchange rate while the remaining 17% can be explained by other factors not captured by the model (the error term).

**Serial Correlation Test**

The Durbin Watson from Table 1 indicates a value of 1.32, which implies absence of serial or auto-correlation. This is in line with the view of Alsaeed (2005) that if the Durbin watson is within the range of 1 and 3, then it signifies absence of serial correlation.

**Unit Root Test**

**Table 2: Phillips-Perron test Statistic**

Variables	t-stat.(Prob.)	Order of Integration
GDP	0.0245	I (1) **
FDI	0.0213	I (0) **
ExRat	0.0000	I (0) *

\* indicates 1% level of significance and \*\* indicates 5% level of significance

Source: Author’s Computation, 2015

Unit Root Test was conducted using the Phillips-Perron test statistic on all the variables: GDP, Foreign Direct investment (FDI), and Exchange rate (Ex Rat). GDP was stationary at first difference, while FDI and Exchange rate were found to be stationary at level.

The findings of this study however concur with the findings of Oyatoye *et al.* (2011)<sup>[20]</sup>, Okon *et al.* (2012)<sup>[18]</sup>, Danja (2012)<sup>[10]</sup>, Antwi *et al.* (2013)<sup>[3]</sup>, and Adeleke *et al.* (2014)<sup>[2]</sup>, among others.

**5. Conclusion and Recommendations**

Based on the findings of this study, this study therefore recommend that: (i) the government of Nigeria should put in place economic policies that will attract more foreign investors and specifically, barriers such as arbitrary tariffs, high tax levies should be seriously reduced among others ; (ii) Infrastructures should also be provided, especially power supply, as investors are also interested in the ease and cost reduction aspect of their production; and (iii) the government of Nigeria should also ensure a politically stable environment,

as no investor will be willing to invest in a crisis prone environment. This study concludes that if the above recommendations are implemented, there is the possibility of increase and high inflow of FDI, which will positively impact on the Nigerian growth and development at large.

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