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FOREIGN DIRECT INVESTMENT AND ECONOMIC GROWTH OF NIGERIA: AN ANALYSIS OF INFRASTRUCTURAL EXPENDITURE MOTIVATION

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ABSTRACT

The study examines the effect of foreign direct investment on economic growth in Nigeria. The aim of the study is to determine the impact of foreign direct investment as motivated by infrastructural expenditure on Nigerian economic growth between 1995 to 2015. The study employs Augmented Dickey Fuller Unit Root Test, Johansen Co-integration, OLS regression and Granger Causality for the study. The result of the study revealed that Foreign Direct Investment as motivated by Infrastructural Expenditure impacted economic growth significantly both in the long run and the short run. Hence, the study recommends that further expenditure should be made on infrastructural facilities to boost more investment both foreign and domestic.

Key Words: Foreign Direct Investment, economic growth, Sustainable Development

Introduction

Foreign direct investment (FDI) is real asset investment made by a company or entity based in one country into a company or entity based in another country. Foreign direct investment (FDI) plays an important role on economic growth and development. The inflow of foreign direct investment (FDI) to the Nigerian economy occurs in different sectors including agriculture, manufacturing, communication and other services. The desire of every economy is to achieve sustainable economic growth and development. However the means through which

this objective can be achieved are multidimensional and based on each country's specific experience. There is need for foreign direct investment in Nigeria because of the structure of the economy. According to (Ajayi, 2006), Foreign direct investment contributes to growth in a substantial manner because it is more stable than other forms of capital flows. Tang, Selvanathan and Selvanathan (2008), state that multinational enterprises (MNEs) diffuse technology and management know-how to domestic firms. The accomplishment of government policies of stimulating the productive base of the economy depends mainly on her ability to attract satisfactory level of foreign investment. For a consuming economy like to reshape into a supply economy require the heavy duty presence quality production capacity which can mostly be engineered by FDI. The investment environment is a key factor for foreign investment and infrastructural availability is another major booster that multiplies the threshold of Foreign Direct Investment in a developing economy like Nigeria. The continuity in government policy agreement and execution is another major factor that will trigger investment. However, various government administrations have solicit for foreign investment in Nigeria by entering all manner of agreement but the question is what are the infrastructural level of Nigerian government to attract foreign investment and how has such expenditure boosted economic growth for foreign investment to thrive. Hence, this study intends to determine how infrastructure expenditure of government has aided foreign direct investment to facilitate economic growth in Nigeria.

Literature Review

In the literature, different researchers have researched deeply into the forays of Foreign Direct Investment and economic growth both in a developed and developing economy. The role of FDI to a country can be positive, negative or insignificant, depending on the economic, institutional and technological conditions in the recipient countries. According to Denisia (2010), economists believe that FDI is an important element of economic development in all countries, especially in the developing ones. The relationship between FDI and economic development is that the effects of FDI are complex. From a macro perspective, they are often regarded as generators of employment, high productivity, competiveness, and technology spillovers. Especially for the least developed countries, FDI means higher exports, access to international markets and international currencies, being an important source of financing, substituting bank loans (Denisia, 2010).

In the study of Solomon and Eke (2013) on the relationship between Foreign Direct Investment and economic growth in Nigeria between 1981-2009 using the OLS method of analysis discovered that FDI has a positive but insignificant impact on Nigerian economic growth. Alejandro (2010) explained that FDI plays an extra ordinary and growing role in global business and economics. He went further to detail that FDI can provide a firm with new markets and marketing channels, cheaper production facilities, access to new production technology, skills and financing for a host country or the foreign firms with investment, it can provide a source of new technologies, capital processes products, organization technologies and management skills

and other positive externalities and spillover that can provide a strong impetus to regional economic growth. Caves (1996) considers that the efforts made by various countries in attracting foreign direct investments are due to the potential positive effects that this would have on economy. FDI would increase productivity, technology transfer, managerial skills, know-how, international production networks, reducing unemployment, and access to external markets. Borensztein (1998) supports these ideas, considering FDI as ways of achieving technology spillovers, with greater contribution to the economic growth than would have national investments. The importance of technology transfer is highlighted also by Findlay who believes that FDI leads to a spillover of advanced technologies to local firms (Findlay, 1978).

Obwona (2001) noted in his study of the determinants of FDI and their impact on economic growth in Uganda state that macroeconomic factors, political stability and policy consistency are important parameters determining the inflow of Foreign Direct Investment (FDI) into Uganda; and that Foreign Direct Investment (FDI) affects growth positively but insignificant. Foreign Direct Investment (FDI) also contributes to economic growth via technology transfer. Zhang (2001) argued that Foreign Direct Investment has positive growth impact that is similar to domestic investment along with partly alleviating balance of payment deficit in the current account. He opined that via technology transfer and spillover efficiency, the inflow of direct foreign investment might be able to stimulate a country's economic performance. Bende-Nabende (2002) also found that direct long term impact of Foreign Direct Investment (FDI) on output is significant and positive for comparatively economically less advanced Philippines and Thailand, but negative in the more economically advanced Japan and Taiwan. In the same line, However, Alfaro *et al*, (2003) affirmed that the contribution of FDI to growth depends on the sector of the economy where the FDI operates. He claimed that FDI inflow to the primary sectors tends to have a negative effect on economic growth. However, Durharm (2004) failed to establish a positive relationship between Foreign Direct Investment (FDI) and economic growth but instead suggests that the effects of Foreign Direct Investment (FDI) are reliant on the absorptive capability of host countries. Nwankwo *et al*, (2013) investigated the impact of globalization on foreign direct investment in Nigeria-since the world has become a global village. The methodology used is purely descriptive and narrative and the data used is secondary. It was found out that foreign direct investment (FDI) has been of increased benefit to Nigeria in the area of employment, transfer of technology, encouragement of local enterprises etc. But there are certain impediments to the full realization of the benefits of foreign direct investment. The findings of Otepola (2002) also supported the outlook of Nwankwo et al (2013), when he examined the importance of Foreign Direct Investment in Nigerian economic growth. The study concluded that FDI contributes significantly to growth especially through exports appreciation.

Adeolu (2007) reports positive linkages between Foreign Direct Investment (FDI) and economic growth in Nigeria. Adeolu (2007) discusses the linkages effects of Foreign Direct Investment (FDI) on the Nigerian economy and submits that these have not been considerable and that the broad linkage effects were lower. Eke et al. (2003) in their study used causality test to analyze the impact of FD1 on economic growth in Nigeria. They

investigated the causal test from foreign private investment to GDP and causality test from GDP to foreign private investment. The results indicate that causality runs in both directions. They concluded that foreign direct investment is relevant and also a significant determinant of real development in Nigeria. However, Adelegan (2000) also examine the impact of Foreign Direct Investment (FDI) on economic growth in Nigeria and found out that Foreign Direct Investment (FDI) is pro-consumption and pro-import and negatively related to gross domestic investment.

In conclusion, considering the wide range of conflicting empirical studies on how foreign direct investment in developing countries affect the rate of aggregate growth, distribution of income, employment and some non economic indicators like cultures and political structures, this study saw a need to determine the role of infrastructural expenditure of government to aid the impact of Foreign Direct Investment in Nigeria.

The study's theoretical framework is taken from the eclectic theory of FDI and Export theory. The eclectic theory of FDI was developed by professor Dunning. The theory is a mix of Ownership advantages, location advantage and Internalization as the primary motives of Foreign Direct Investment (Denisia, 2010). This theory is backed by Export theory for the objective of the study. Export theory states that "countries need to export goods and services in order to generate revenue to finance imports which cannot be produced indigenously (Coutts and Godley, 1992; McCombie and Thirlwall, 1992 in Maingi, 2014).

Research Objectives

Objectives of this study are as follows;

1. To determine the effect of Foreign Direct Investment on Economic Growth (GDP) of Nigeria.
2. To determine the effect of Infrastructure Expenditure on Economic Growth (GDP) of Nigeria.

Hypotheses Development

$H0_1$: There is no significant relationship between Foreign Direct Investment and economic growth (GDP).

$H0_2$: There is no significant relationship between Infrastructure Expenditure and economic growth (GDP).

Methodology

In order to meet the objectives and hypotheses of the study, data is collected from secondarily sourced from CBN statistical Bulletin of 2016 and *Ex Post Facto research design* were used for the study. The hypothesis will be tested at 5% level of significant. The functional relationship is specified thus:

$Y = F (FDI, INFRAC)$ ……. (1)

The econometric model of this functional relationship is given as:

$GDP = \alpha + \beta_1 FDI + \beta_2 INFRAC + \beta_2 Ex + \mu$ ……. (2)

Where,

GDP = Gross domestic product

FDI = Foreign Direct Investment

INFRAC = Infrastructural Expenditure

Exr = Exchange Rate (Control variable)

α = Autonomous GDP when FDI and INFRAC are held constant

β = Coefficient of FDI and INFRAC

μ = Error term

Given the assumed relationship, based on a priori reasoning between the GDP and the duo FDI & INFRAC.

Presentation of Results and Analysis

Table 1: Summary of Unit root test

MCKINNON CRITICAL VALUES								
VARIABLES	LEVEL	IST DIFF.	2ND DIFF.	1%	5%	10%	ORDER OF INTEGRATION	DF
GDP	-1.783822	-3.414794	-7.399255	-3.808546	-3.020686	-2.650413	I(1)	1%
FDI	-1.330703	-5.394791	-9.67786O	-3.808546	-3.020686	-2.650413	I(1)	1%
INFRAC	-1.549389	-5.792018	-9.467302	-3.808546	-3.020686	-2.650413	I(1)	1%
EXR	-1.128963	-4.166618	-6.565384	-3.808546	-3.020686	-2.650413	I(1)	1%

Sources: Researcher's Computation using E-views

The ADF Unit root test as shown in the table 1 indicates that all the variables are stationary at 1%, 5%, and 10% at order one, having established stationarity among the variables. Co integration analysis will be done in order to find out long term equilibrium relationship among the variables.

Table 2: Johansen Co-integration test (Trace Test)

Hypothesized		Trace	0.05	
No. of CE(s)	Eigenvalue	Statistic	Critical Value	Prob.**

None *	0.852740	74.29467	47.85613	0.0000
At most 1 *	0.671752	37.89910	29.79707	0.0047
At most 2 *	0.517343	16.73334	15.49471	0.0324
At most 3	0.141229	2.892814	3.841466	0.0890
Trace test indicates 3 cointegrating eqn(s) at the 0.05 level				
* denotes rejection of the hypothesis at the 0.05 level				

Sources: Researcher's Computation using E-views

The trace and maximum eigen –value test results in table 2, reveal the existence of three unique co-integrating vectors between test variables. This means the variables are integrated in the long run.

Table 3: Presentation and Analysis of Regression Result

Dependent Variable: LOG(GDP)				
Sample: 1995 2015				
Included observations: 21				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
LOG(FDI)	0.615881	0.250007	2.463451	0.0247
LOG(INFRAC)	0.462268	0.388075	1.191181	0.2499
LOG(EXR)	0.261013	0.241078	1.082689	0.2941
C	2.015200	1.330122	1.515049	0.1481
R-squared	0.830076	F-statistic		27.68154
Adjusted R-squared	0.800089	Prob. (F-statistic)		0.000001

Sources: Researcher's Computation using E-views

The result of the OLS regression in table 4 reveal that the coefficient of FDI is (0.615881) with a probability value of 0.0247, which is less than 0.05 meaning that 1% increase in FDI increases GDP by 0.615881%. Again the t-statistics value of 2.463451 with P-value of 0.0247 is significant. This means that FDI has positive and significant effect on GDP and comply with the apriori expectations. On the other hand, the coefficient of INFRAC in the model is 0.462268 with a probability value of 0.2499 which is greater than 0.005 meaning that 1% increase in INFRAC increases GDP by 0.462268%. The t-statistics value of 1.191181 with P-value of 0.2499 prove that INFRAC has a positive but insignificant effect on GDP. The control variable in Exchange rate's coefficient is 0.261013 with a probability value of 0.2941 which is greater than 0.005 meaning that 1% increase in EXR increases GDP by 0.261013%. The t-statistics value of 1.082689 with P-value of 0.2941 explains that EXR has a positive and insignificant effect on GDP. The R^2 value of 0.830076 signifies that 83.0076% of the variation in GDP is explained in the model leaving only less than 17% to the error term. The result of F-stat is 27.68154 and its P-value of F-stat is 0.000001 shows that the overall study is significant.

Table 4: Heteroskedasticity Test

Heteroskedasticity Test: Breusch-Pagan-Godfrey			
F-statistic	2.473242	Prob. F(3,17)	0.0967
Obs*R-squared	6.380672	Prob. Chi-Square(3)	0.0945
Scaled explained SS	3.676798	Prob. Chi-Square(3)	0.2985

Sources: Researcher's Computation using E-views

The result of the heteroskedasticitty test indicates that the probability is 0.0967 which is greater than 0.05 we then accept the null hypothesis (H0) meaning that there is no heteroskedasticity in the model and there is homoskedasticity. This shows that the models have global utility and is normally distributed.

Table 5: Granger causality test analysis

Pairwise Granger Causality Tests			
Lags: 1			
Null Hypothesis:	Obs	F-Statistic	Prob.
FDI does not Granger Cause GDP	20	12.1052	0.0029
GDP does not Granger Cause FDI		0.32164	0.5780
INFRAC does not Granger Cause GDP	20	13.3162	0.0020
GDP does not Granger Cause INFRAC		0.30767	0.5863
EXR does not Granger Cause GDP	20	2.11082	0.1645
GDP does not Granger Cause EXR		1.22845	0.2831
INFRAC does not Granger Cause FDI	20	0.18540	0.6722
FDI does not Granger Cause INFRAC		5.54337	0.0308
EXR does not Granger Cause FDI	20	0.71890	0.4083
FDI does not Granger Cause EXR		0.02423	0.8781
EXR does not Granger Cause INFRAC	20	0.12242	0.7307
INFRAC does not Granger Cause EXR		0.65410	0.4298

Sources: Researcher's Computation using E-views

The F-statistics of 12.1052 and 13.3162 with the probability value of 0.0029 and 0.0020 indicates that FDI and INFRAC were able to granger cause a change in GDP with causation flowing from FDI to GDP and from INFRAC to GDP, thereby proving a unidirectional relationship between the variables. The F-statistics of 5.54337 and the probability value of 0.0308 shows that there is unidirectional relationship between FDI and INFRAC with causation flowing from FDI to INFRAC.

Conclusion and Recommendation

Looking at the role of infrastructural expenditure as influencing factor for FDI into the Nigerian economy for economic growth, the study discovered that Infrastructural expenditure of government have positive effect for FDI to impact on the economic growth significantly. However, this effect of infrastructural expenditure is not significant but the

overall study proves that FDI significantly impacted on Nigerian economic growth both in the long run and short run. The study therefore recommends that further expenditure should be made on infrastructural facilities to boost more investment both in foreign and domestic investments. More liberal policies should be instilled to engender the culture of production for exportation thereby boosting the economic growth of Nigeria.

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Appendix

Table 4.1 **Data Presentation of macroeconomic variables**

YR	GROSS DOMESTIC PRODUCT N'BILLION	FOREIGN DIRECT INVESTMENT N'BILLION	INFRASTRUCTURE N'BILLION	EXCHANGE RATE
1995	2,907.36	75.9	121.14	21.89
1996	4,032.30	111.3	212.93	21.89
1997	4,189.25	110.5	269.65	21.89
1998	3,989.45	80.7	309.02	21.89
1999	4,679.21	92.8	498.03	92.69
2000	6,713.57	116	239.45	102.11
2001	6,895.20	132.4	438.70	111.94
2002	7,795.76	225.2	321.38	120.97
2003	9,913.52	258.4	241.69	129.36
2004	11,411.07	248.2	351.25	133.5
2005	14,610.88	654.2	519.47	132.15
2006	18,564.59	624.5	552.39	128.65
2007	20,657.32	759.4	759.28	125.83
2008	24,296.33	971.5	960.89	118.57
2009	24,794.24	1273.8	1,152.80	148.88
2010	55,469.35	905.7	883.87	150.3
2011	63,713.36	1360.3	918.55	153.86

2012	72,599.63	1113.5	874.70	157.5
2013	81,009.96	875.1	1,108.39	157.31
2014	90,136.98	738.2	783.12	158.55
2015	95,177.74	602.1	818.35	193.28

Source: CBN Statistical Bulletin, 2015