

## **Effect of Foreign Direct Investment on Government Expenditure in a Pre and Post-Deregulation Period in Nigeria 1970-2016**

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### **ABSTRACT**

*The study critically and analytically examined the effect of foreign direct investment inflow on Nigeria expenditure in a pre and post deregulated economy in Nigeria for forty seven years that is from 1970-2016. The study employed ex-post facto research design. Data gathered for the purpose of this study were tested to establish the exact functional relationship between the variables using E-view version. Due to the linearity nature of the model formulation, Ordinary Least Square (OLS) estimation method was employed in obtaining the numerical estimates of the coefficients in the model using E-view. Findings from the analysis revealed that FDI has strong significant influence on capital expenditure in Nigeria in the both period but more significant during the post-deregulation economic period. Based on the findings, the study therefore recommends that government and the monetary authorities should design policies and programs that will encourage investors to invest in Nigeria by providing the basic amenities such as good road, constant electricity and water etc. Hence, if FDI must be attracted into the country, the government should increase their quest for capital spending in order to provide basic amenities necessary to make the environment conducive for investment.*

**Keywords:** *Capital expenditure, FDI, Government expenditure, Investment theory and recurrent government Expenditure*

### **1. INTRODUCTION**

In recent times, there has been a growing concern on the under developing nature of the Nigerian economy as compared to the economies of other developing countries in the world. However, Nigeria has adopted a number of measures aimed at improving growth and development in the domestic economy which one of such measures include the demand for Foreign Direct Investment (FDI) into the country (Ugwuegbe, Okore, & Onoh, 2013). Foreign Direct Investment is an international capital flow in which firms in a country creates a subsidiary in another country. It involves the acquisition rights and transfer of resources in the host country (Ude & Odo, 2017). FDI and Economic Growth are treated as endogenous variables and are causes of each other since they have endogenous relationship (Ugwuegbe *et*

al, 2013). Abbas, Akbar, Nasir, Ullah, and Naseem, (2011) opine that FDI is the net inflows of investment in an economy of a country. It is the sum of equity capital, reinvestment of earnings, long-term, and short-term capital. It usually involves participation in management, joint ventures, transfer of technology and experience. The concept of economic growth usually refers to the increase in the inflation-adjusted market value of the goods and services produced by an economy over time (Ude & Odo, 2017). It is conventionally measured as the percent rate of increase in real gross domestic product (real GDP), usually in per capita terms (i.e; inflation-adjusted terms) which inversely influences the level of foreign direct investment in a country (Asiedu, 2011).

Foreign Direct Investment (FDI) has emerged as the most important source of external resource flows to developing countries over the years and has become a significant part of capital formation in these countries, though their share in the global distribution of FDI continued to remain small or even declining (Khan, 2007 cited in Ugwuegbe et al., 2013). The role of FDI has been widely recognized as a growth-enhancing factor in the developing countries. Abbas et al (2011) state that government expenditure no doubt is an important instrument for controlling the economy of a nation. Anyways, the general view is that government expenditure notably on social and economic infrastructure can be growth-enhancing. Although, the financing of such expenditure to provide essential infrastructural facilities including transport, electricity, telecommunication, water and sanitation, waste disposal, education, and health can be growth retarding (Olukayode, 2009 cited in Olayungbo, 2013). Abbas et al (2011) suggested that excessive spending in public capital expenditure can reduce the positive impact of FDI on economic growth.

However, Ajudua and Devis (2015) opine that government expenditure and foreign direct investment (FDI) support the growth objectives of all economies worldwide. Ke-Young and Hermming (1991, cited in Ajudua & Devis, 2015) posited that government expenditure is one of many interventional strategies by the government to compensate for failed competitive market and secure equity distribution. It is on this note that it becomes imperative to study government expenditure and FDI flow so as to ascertain the extent to which allocation of expenditure to sectors influences FDI inflow in the country. Imoudu (2012) however opine that in Nigeria, there is that popular and commonly held view that manufacturing multinationals have done greater lower than good to the host communities as a result of their operations in their host communities has led to the loss of economic and social equality and environmental degradation. However as FDI is seen as a stimulant for productivity growth, capital formation, technology transfer, employment creation, export promotion, some school of thought such as the Marxist have laid emphasis on such benefit in the host economy (Gul and Naseem, 2015). They posited that FDI hindered total freedom and economic growth of the host nation. To them, FDI is linked to the perpetual dependence on developed countries by poor countries; local industries are out-competed, their productive activities in most cases depend on imported raw material thus the multiplier effect is lower than desired and it also implies increased income remittance abroad leading to capital flight (Ezirim, 1996 cited in Ajudua & Devis, 2015).

Ajudua and Devis (2015) further state that Nigeria expenditure goals have been quite ambitious and resulted in high spending. This calls for a thorough recasting of priorities in the federal expenditure programme. Olaiya, Nwosa, and Amassoma (2012) state that government expenditure has consistently exceeded revenue for quite some time now and the symptom of such fiscal imbalance is budget deficits. While the deficit is not new in the country's history, the size of the deficit has become a cause of concern. It is, however, pertinent to note that much of the debates over the deficits have been more related to the effect of unacceptable large deficits rather than the cause of deficits. Also faced with social and political unrest in recent years in the country and the continuously high insecurity situation in the country, and with the contrasting views of scholars on the position of FDI in a developing economy, it thus becomes important to investigate government expenditure in Nigeria and to evaluate the standpoint of FDI in the country (Olaiya *et al.*, 2012).

More so, Ajudua and Devis (2015) stated that the role of government expenditure in determining income level and distribution is now well recognized. Keynes posited the use of government expenditures in maintaining macroeconomic stability (Naseem, 2011). Naseem (2011) further suggested that government expenditure can be used to raise aggregate demand and thereby get the economy out of recession (Ahuja 2013). According to him, an increase in government expenditures will have a multiplier effect on the national income leading to a more than proportionate increase in the national income. Ahuja (2013) also continued by saying that the variation in government expenditures does not only ensure economic stability but also generate and accelerate economic growth and promote employment opportunities thereby alleviating poverty. However, excessive government expenditures in most developing countries have led to high budget deficit and cases of debt problems.

Prior studies on accounting literature have concentrated on FDI and its effect on the total economic development of one country or the other. For instance, Abbas et al (2011) find that growth of any country depends upon investments, increasing assets, and infrastructure. Likewise, Imoudu (2012) revealed that the impact of FDI disaggregated into several components namely: agriculture, mining, manufacturing, telecommunication, and petroleum sectors are very little with the exception of the telecom sector which has a promising future for the economy, especially in the long run. Ugwuegbe, Okore, & Onoh (2013) also found out that FDI has a positive and insignificant impact on the growth of Nigerian economy. Gul and Naseem (2015) also revealed that FDI and Domestic capital are also throwing light on positive aspects of variables for accelerating economic growth. A closer examination of these previous studies reveals that conscious effort was not made to take care of the fact that more than 60 percent of the FDI inflows into Nigeria is made into the extractive industry. It is in view of the above that the study tends to find out the effect of FDI on government expenditure in a Pre and Post-Deregulation period in Nigeria.

The study would be guided by a research hypothesis and would study the trends in foreign direct investment and its effect on government expenditure in Nigeria between the periods between 1970 and 2016.

**H<sub>0</sub>:** *There exist no relationship between foreign direct investment and current expenditure in Nigeria.*

## **2. CONCEPT OF GOVERNMENT EXPENDITURE**

Government expenditure and Foreign Direct Investment are vital macroeconomic variables of any economy as they are strong propellant of economic growth (Ajudua and Devis, 2015). Nowadays, the relationship between government expenditure and FDI has continued to generate sense or controversies among scholars in economic literature (Umaru and Zubairu, 2012). Umaru and Zubairu (2012) opine that the nature of the impact of government expenditure on economic growth is in conclusion, and from the view point the student researcher is still not incontrovertible. As a matter of fact, while some author or researchers believed that the impact of government expenditure on economic growth is negative or non-significant (Totonchi, 2011), others believed that the impact is positive and significant (Yaqub, Adam, and Jimoh, 2013). The structure of Nigeria government expenditure can bawdily be categorized into capital and recurrent expenditure (Musa, & Asare, 2013).

However, it is a standard presumption that government expenditure and foreign direct investment (FDI) support the growth objectives of all economies worldwide. Ke-Young and Hermming (1991) cited in Ajudua and Devis (2015) posited that government expenditure is one of many interventional strategies by the government to compensate for failed competitive market and secure equity in distribution. In Nigeria it thus becomes imperative to study government expenditure and FDI flow in order to ascertain the extent to which allocation of expenditure to sectors and the FDI inflow in the country contributes to increased output and aggregate demand as the size and structure of government expenditure will determine the pattern and form of growth in output of the economy. The relationship between government expenditures (capital and recurrent expenditure) such as wages, salaries, interest on loans, roads, education, agriculture, industry, transport, electricity etc, and economic growth in developing countries is important an analysis as they ought to contribute to growth (Ajudua and Devis, 2015).

He further opines that government expenditures have far a very high effect on the overall economic activities of any nation. Government expenditure on production depends on three factors; the ability to work, save and invest; the willingness to work, save and invest and the diversion of economic activities between different uses and localities (Musa, & Asare, 2013). Government expenditure in the form of grants and subsidies to farmers, firms and industries is highly productive as it minimizes cost of production which leads to a fall in prices while expenditures on education and health has direct welfare effect on the society. Expenditure on education and health seen as investment in human capital improves skill formation and raises the ability to produce which has the effect of raising disposable income and in turn increases consumption and investment. Government expenditure could be current, recurrent and capital expenditures. Capital government expenditure refers to spending on fixed assets such as roads, schools, hospitals, building, plant and machinery etc, the benefits of which are durable and lasting for several years while recurrent government expenditure refers to the expenses that government incurs for its maintenance, for the society and the economy as a whole.

### **3. THEORETICAL FRAMEWORK**

The study was anchored on Keynesian investment theory. The theory was propounded by John Maynard Keynes in 1936. In this theory, Keynes made much of the investment decision but was quiet about the underlying fixed capital. This was effectively what neoclassical theorists such as Dale W. Jorgenson in 1963 picked up in their theories. Investment is the change in capital stock during a period. Consequently, unlike capital, investment is a flow term and not a stock term. This means that while capital is measured at a *point* in time, while investment can only be measured over a period of time. In Keynesian terminology, investment refers to real investment which adds to capital equipment. It leads to increase in level of income and production by increasing the production and purchase of capital goods. Investment thus includes new plant and equipment, construction of public works like roads, dams, buildings. In the words of John Robinson, “By investment, is meant an addition to capital, such as addition to capital, such as occurs when a new house is being built or a new factory is built. Investment means making an addition to the stock of goods in existence.” The relevance of investment theory to this study is that capital investment (government capital expenditure) if invested properly can attracts foreign direct investment and as well foreign direct investment can as well increase the per capital income of a country as it contribute to a greater height the internal generated revenue of a country thereby increasing the money available for government expenditure in the country.

### **4. METHODOLOGY**

The study is design as an Ex-post facto one. Ex-post facto research design means ‘after-the fact’ research. It uses available data for confirmatory purpose. The events that generate the data took place in the past and could, therefore, not be manipulated (Anderson, Sweeney & Williams, 2008). Data used here in this study is based on secondary source completely. The study employed Chow test in the analysis of the raised hypothesis. Before the analysis of the formulated hypothesis using Chow test, the granger causality test will be employed to reveals the direction of causation between two variables (FDI and GCP). The basic principle is to know whether a past change in one variable A causes a current change in another variable B or whether the relation works in the opposite direction. Chow test of structural stability version of ordinary least square (OLS) method of econometric regression was employed to test the formulated hypothesis (Gujarati & Sangeetha, 2007). Chow test is a special kind of *f*-test propounded by Chow in 1960 and it is based on the idea that a series of data can contain a structural break. The model uses an *f*-test to determine whether the perceived structural change has a measurable effect on the study period and the aim is to determine whether a single regression covering the FDI on government capital expenditure before and after deregulation period in Nigeria is more efficient than the two separate regressions involving the splitting of the data into two samples, one representing the period before the deregulation period and another the period after the deregulation period. This is shown in figure 1 and 2 below where the study observed a structural break at time “T” below:

Case 1

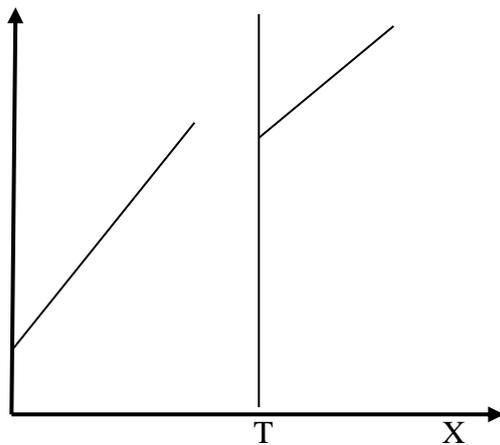


Figure 1: Partial Regression

Case 2

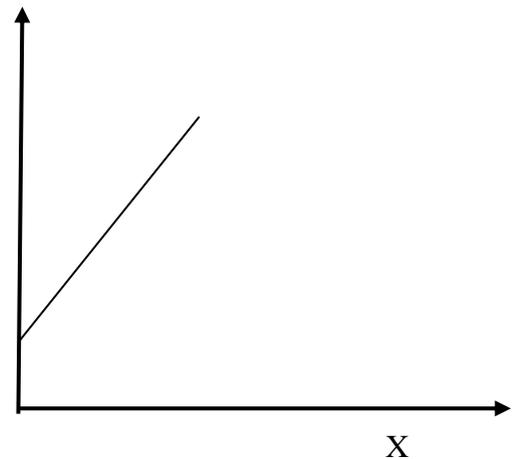


Figure 2: Pooled or Single Regression

**Model Specification: The Chow Test Analyses**

A single or pooled regression period 1970-2016 to fit the whole series of data is employed thus;

$$1. Y = a + \beta_1 X_1 + \mu \dots (1)$$

Where Y= FDI (Proxy by net inflows as a percentage of Gross Domestic Product)

$X_1$ = Government Capital Expenditure (GCE)

a= the constant or intercept on Y axis.

$\mu$ = Erroe or disturbance term.

$$2. \text{ Partial Regression (Pre- Deregulation period 1970-1986)}$$

$$Y = a + \beta_2 X_2 + \mu \dots (2)$$

Where Y= FDI (Proxy by net inflows as a percentage of Gross Domestic Product)

$X_2$ = GCE

a= the constant or intercept on Y axis.

$\mu$ = Erroe or disturbance term.

$$3. \text{ Partial Regression (Post- Deregulation period 1987-2016)}$$

$$Y = a + \beta_3 X_3 + \mu \dots (3)$$

Where Y= FDI (Proxy by net inflows as a percentage of Gross Domestic Product)

$X_3$ = GCE

a= the constant or intercept on Y axis.

$\mu$ = Error or disturbance term.

## 5. ANALYSIS OF THE FORMULATED HYPOTHESIS

**Table 1: Pairwise Granger Causality Tests**

Pairwise Granger Causality Tests  
 Sample: 1970-2016  
 Lags: 2

Null Hypothesis:	Obs	F-Statistic	Prob.
FDI does not Granger Cause GCE	47	0.50209	0.0052
GCE does not Granger Cause FDI		0.83979	0.0065

Source: Author computation, 2017 using E view 7.0

The hypothesis is tested using granger causality test. From the result in table 7, the P-value for the f-value for the granger causality running from FDI to GCE is 0.0052 while the p-value for GCE to FDI is 0.0065. Since the two p-values is less than 0.05 significant levels, we reject the alternative hypothesis and conclude that there is causality either ways between FDI and GCE and between GCE and FDI. This implies that there is causality between the two variables either ways in Nigeria.

**Table 2: Dependent Variable: COS**

Method: Ordinary Least Square  
 Sample: 1970-2016

Included Observation: 47

Valuable	Coefficient	Std. Error	t-Statistic	Prob.
FDI	-8.762609	3.449463	-2.953096	0.0183
GCE	4.936272	88.27146	7.695885	0.0000
R-squared	0.58617	Mean dependent Var		488.4226
Adjusted R-squared	0.42862	S,D. Depended Var		355.6859
S.E. of Regression	312.3234	Akaike info criterion		14.39714
<b>RSS<sub>1</sub></b>	<b>5388349</b>	Scharz criterion		14.49313
Log likelihood	-192.8614	Hannan- Quinn criter		14.42568
F-statistics	8.720778	Durbin-watson stat		2.902397
Prob (F-statistics)	0.007656	d.f	45	

Source: Regression Data Analysis (2018).

**Table 3: Dependent Variable: COS**

Method: Ordinary Least Square  
 Sample: 1970-1986  
 Included Observation: 17

Valuable	Coefficient	Std. Error	t-Statistic	Prob.
FDI	-9.28426	1.62762	-3.527624	0.0068
GCE	2.890364	47.56271	5.7765762	0.0000
R-squared	0.45622	Mean dependent Var		642.231
Adjusted R-squared	0.46772	S,D. Depended Var		326.1883
S.E. of Regression	152.2471	Akaike info criterion		33.51422
<b>RSS<sub>2</sub></b>	<b>274652</b>	Scharz criterion		16.31332

Log likelihood	-126.4163	Hannan- Quinn criter	18.62228
F-statistics	5.231448	Durbin-watson stat	1.836836
Prob (F-statistics)	0.003532	<i>d.f</i>	15

Source: Regression Data Analysis (2018).

**Table 4: Dependent Variable: COS**

Method: Ordinary Least Square

Sample: 1987-2016

Included Observation: 30

Valuable	Coefficient	Std. Error	t-Statistic	Prob.
FDI	8.563472	5.286728	2.8728262	0.0019
GCE	3.712325	49.98726	6.844943	0.0000
R-squared	0.86383	Mean dependent Var		525.123
Adjusted R-squared	0.62625	S,D. Depended Var		4723632
S.E. of Regression	144.6726	Akaike info criterion		36.87383
<b>RSS<sub>3</sub></b>	<b>2382418</b>	Scharz criterion		11.28262
Log likelihood	152.26252	Hannan- Quinn criter		16.84235
F-statistics	5.653652	Durbin-watson stat		3.437673
Prob (F-statistics)	0.005441	<i>d.f</i>	28	

Source: Regression Data Analysis (2018).

To compare the Chow Test using the formula thus;

$$F_{cal} = \frac{(RSS_R - RSS_{UR}) / K}{(RSS_{UR}) / (n_1 - n_2 - 2k)}$$

( ) - t-value, RSS – Residual Sum of Squares, \*\* - (p<0.05) – significant at  $\alpha= 0.05$

The table above shows that;

$$\text{Unrestricted sum of Squares (RSS}_{UR}) = \text{RSS}_2 + \text{RSS}_3$$

$$= 274652 + 2382418 = 2657070$$

$$\text{Restricted sum of Squares (RSS}_1) = 5388349$$

Following the *F* distribution with (n<sub>1</sub> - K) and (n<sub>2</sub> - K)*df* in the numerator and the denominator respectively, in this study, K = 2, since there are only two parameters in each sub-regression and

$$n = n_1 + n_2 = 17 + 30 = 47$$

Therefore,

$$F_{cal} = \frac{5388349 - 2657070 / 2}{2657070 / 43} = 2731279$$

$$61792.32558$$

$$= 44.31$$

$$F_{\text{tab}} = F_{\alpha, [k, (n_1+n_2-2k)]} = F_{0.05, [15, 28]} = 1.1$$

## 6. DISCUSSION OF THE RESULT

From the results of Chow test computed and table 2-4 above, at  $\alpha=0.05$   $F_{\text{cal}} = 44.31 > F_{\text{tab}} = 1.1$  at [15,28] degree of freedom. The study therefore rejects the null hypothesis ( $H_0$ ) and concludes that there is a structural change on government capital expenditure after deregulation period at 0.05 level of significance. This implies that since after the deregulation period in Nigeria, government increased their capital expenditure to attract foreign direct investment into the country. The result chow test shows that, the introduction of deregulation period into the Nigeria economy has significant influence total government capital expenditure in Nigeria when related to pre-deregulation period as shown in the Chow test analysis above. The result of the regression model of FDI on GCE in table 2-4 above shows a positive significant coefficient of 316.572. Which indicates an increase in government capital expenditure by N1 will produce an increase in foreign direct investment by 316.572. This shows that FDI has a significant positive and Negative impact on government capital expenditure. However, the finding implies that FDI affects government expenditure as when the country does not attract FDI through its policies, the internal generated revenue will decline therefore reducing the available fund to embark on capital projects. In turn, a good capital expenditure like provision of good road, constant electricity supply, railways, etc attract FDI and if not properly provided, can reduce FDI in a country. Nevertheless, the finding shows that, FDI affects government capital expenditure in a post-deregulation period than pre-deregulation period.

## 7. CONCLUSION AND RECOMMENDATION

This study critically and analytically examined the effect of foreign direct investment inflow on Nigeria expenditure in a pre and post deregulated economy in Nigeria for forty seven years that is from 1970-2016. Foreign Direct investment in an economy shows that there is a good trend of investment which ultimately results in increasing government expenditure and growth of the country as the study has revealed that increasing trend of FDI also increases the government capital expenditure and vice versa. However, in conclusion, the empirical results show that there is positive relationship between government expenditure and FDI. The result was positive but statistically insignificant contrary to the negative findings. This insignificant relationship could be as a result of insufficient FDI fund invested into the Nigerian economy which has not been able to significantly impact on the government expenditure. The result of our study also portrays that domestic investment was also responsible for the growth witnessed in Nigeria's economy over the period under review. In this regard, the study therefore recommends that the government and the monetary authorities should design policies and programs that will encourage investors to invest in Nigeria by providing the basic amenities' such as infrastructural development (Capital Expenditure). The finding of this study has as well created a gap for another study into the effect of government expenditure on FDI.

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