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Foreign Direct Investment and Economic Growth in Nigeria

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Abstract

This study analyzes the relationship between foreign direct investment and economic growth in Nigeria. Secondary data on foreign direct investment, gross domestic product, and monetary policy rate were sourced from Central Bank of Nigeria. The model was analyzed using the Fully modified Least Squares, ADF Unit Root and the Johansen Cointegration test methods. The ADF test result revealed that the variables are not stationary at levels but stationary in first difference. There exists long-run relationship among the variables as shown from the Johansen Cointegration test result thereby forming the basis for employing the FMOLs. The Outcome of the Cointegrating test result shows that all the coefficients of the explanatory variable (FDI and MPR) are positive. However, only FDI was found to be significant. Based on the result of the research, the following recommendations were made among others: a combination of monetary, fiscal as well as other trade policies geared towards attracting foreign investors should be strategically deployed by the government, the government should create an enabling environment to encourage the inflow of foreign capital by the development of infrastructural facilities. There is also the need for a stable political environment to ensure the security of life and property.

Key Words: Foreign Direct Investment, Gross Domestic Product, Monetary Policy Rate

1. INTRODUCTION

Foreign direct investment (FDI) refers to investment from one country into another country (normally by companies) that involves establishing operations or acquiring tangible assets, including stakes in other business. Huge capital inflow into a country is expected to increase output, income, employment and accelerate the rate of economic growth and development.

The Nigeria government has adopted several policies to attract foreign direct investment into the national economy. An example of such program is the implementation of the Structural Adjustment Program by the then Ibrahim Babangida regime in the mid -80's which was geared towards liberalizing various sectors of the economy and attracting foreign investors. Despite widespread criticism of the policy at the time, FDI rose from an estimated \$200mn in 1970 to \$2bn in 1994. Unfortunately, the FDI fell between 1996 and 1999 following the 1993 general elections saga (World Bank, 2018).

Furthermore, Nigeria has witnessed the high flow of FDI over the years; this is due to its abundant natural resources which have attracted the attention of foreign investors from different parts of the globe. For instance, Nigeria has recorded a high flow of FDI from countries like the United States, the United Kingdom (with about 20% of the total FDI) and China. The sudden rise in FDI was also facilitated by the Nigeria Investment Act Of

1995 which allows foreign investors to maintain 100% ownership of their investment. The Nigeria FDI stood at \$8 billion in 2012 which represents 15% of the total FDI received by Africa. Furthermore, the ease with which the profit and dividend of the expatriate can be transferred to their countries has also aggravated FDI inflow.

While Nigeria has not been bereft of foreign investment, the question posed by economic analysts and observers is whether or not the huge capital inflow witnessed by the country has had a positive impact on the economy. The main objective of this study is to examine the trend of foreign direct inflow within the period of study. Also, to ascertain whether or not foreign direct inflow has had any impact on the Gross Domestic Product of Nigeria.

2. LITERATURE REVIEW

2.1. Theoretical Review

The Concept of FDI

FDI has been defined by the United Nations Conference on Trade and Development (UNCTAD, 2001) as a form of investment by an individual or firm in other countries aside their own. It's a scenario where an investor establishes foreign business operations or acquires business assets in a foreign company. FDI refers to capital inflow from abroad into a country whereby foreigners maintain a certain amount of shares of domestic firms (Egbo, 2010). Umuezuruike E. (2015) asserts that the study of Foreign Direct investment has to do with the proliferation of multinationals to other countries in order to seek the highest returns on investment.

Foreign Direct Investment and Monetary Policy

According to Akinremi (2017), the key policy variables found to affect FDI inflows to Nigeria are the exchange rate and interest rate captured by the monetary policy rate. He reiterated the need for a reduction of the monetary policy rate to boost productivity, reduce the rate of inflation (especially cost-push inflation), and consequently, bring about an increase in Foreign direct investment.

Foreign Direct Invest and Economic Growth

Whether or not foreign direct investment translates to economic growth has been at the front burner of economic debate. On apriori grounds, foreign direct investment is expected to boost economic growth by increasing the stock of a nation's capital either via physical transfer or technological transfer. Markusen (1995), posits that foreign direct investment precipitate economic growth through technological diffusion. According to him, multinational firms have a high ratio of research and development which has the potential of increasing output, income and employment in the resident country. He further stated that multination co-operations are technologically advanced the world over and that foreign direct investment will not only bring about the importation foreign technologies, but the multiplier effect of such imported technology on the local firms will be colossal.

Bonjour (2003), further buttressed the spillover effect of the foreign direct investment on developing countries. According to him, the productivity of the local firms in developing countries will be increased as a result of the spillover effect of the technological transfer.

In relation to the advantages of the spillover effect of technological transfer to developing countries, Ngowi (2001), identified ten benefits to these countries. They are; Job creation, skill acquisition, capital formation, production diversity, technology transfer, efficient local resource, observe human labour right, the creation of forwarding and backward linkages of the economy, use of clean environmental technology.

Although, the inflow of foreign direct investment has been dubbed a catalyst for economic growth and development, and developing nations over the years have been encouraged to create an enabling environment to attract such inflows. It is instructive to identify some of the costs to the recipient country which tend in the long run to offset its benefits. They are; high cost, foreign exchange crisis, loss of domestic autonomy, the creation of a monopoly, discouragement of local enterprise, etc. (Jhingan, 2007).

2.1 Empirical Review

Akpan and Eweke (2017), carried out a study aimed at examining the relationship between Foreign Direct Investment (FDI) and performance of the industrial sector on Nigeria's economic growth. Time series data relating to Foreign Direct Investment (FDI), Industrial Sector Output level (IND), and Gross Domestic Product (GDP) were analyzed using the Impulse Response Function (IRF) and Variance Decomposition (VDC) techniques within a Vector Autoregressive Framework. The VAR estimate shows that FDI and IND both had a slight positive significant impact on GDP. The Impulse Response Function revealed that the GDP has a negative response to a shock to both FDI and IND. However, while the latter response was up to the 3rd period, the former lasted throughout the period under observation. They concluded that the flow of FDI is not impactful on Nigeria's Economic growth whilst the contribution of the industrial sector has been very low hence, its inability to significant spur economic growth.

Adeleke K, Olowe. S, and Fasesin. (2014), their research explored the impact of foreign direct investment on economic growth empirically. Time series data on Gross Domestic Product (GDP), Foreign Direct Investment (FDI), Exchange Rate (EXR), and Export (EXP) were sourced from various publications of Central Bank of Nigeria, such as; Statistical bulletin, Annual Reports, and statements of accounts. The model was estimated to cover a period of 1999 – 2013 was analyzed using the regression analysis of Ordinary Least Square (OLS). Their findings revealed that economic growth is directly related to the inflow of foreign direct investment. The study recommended the liberalization of the foreign sector in Nigeria in order to eliminate all barriers to trade and encourage foreign investors.

Uzoka C. I (2012), the study examined the impact of foreign direct investment on economic growth. The data used were time series data which included Gross Domestic Product (GDP), Foreign Direct Investment (FDI) and Export Earning (EXE) which were computed from Central Bank of Nigeria Statistical Bulletin. The model was estimated to cover the period of 1980 -2010 and was analyzed using Ordinary Least Square (OLS) multiple regression analysis. The research finding showed that Foreign Direct Investment (FDI) had a positive impact on the Gross Domestic Product. He further recommended that the provision of adequate infrastructure and policy framework is important in order to induce a further inflow of FDI necessary to stimulate economic growth.

Oyatoye et al. (2011), studied and analyzed the relationship between foreign direct investment and economic growth. Secondary data on Gross Domestic Product (GDP), Foreign Direct Investment (FDI) and Export (EX) were gathered from the Central Bank of Nigeria Statistical bulletin. The scope covered a period of 20 years (1967 -2006). Regression analysis of Ordinary Least Squares (OLS) was used to analyze the data. The study concluded that there is a positive relationship between foreign direct investment and economic growth.

Theoretically, monetary policy plays a pivotal role in the maintenance of domestic price, exchange rate stabilization and the development of a sound financial system all of which are prerequisites for developing countries seeking to attract foreign capital. Unfortunately, previous empirical studies along this line have failed to identify the role of monetary policy in foreign capital inflow. This study intends to highlight the role of monetary policy in attracting foreign direct investment by introducing the monetary policy rate as a control variable, which has not been done before.

3. METHOD OF STUDY

3.1 Data Collection Method & Sources

The data used are time series data which includes Gross Domestic Product (GDP), Foreign Direct Investment (FDI), and Monetary Policy Rate (MPR) computed from the Central Bank of Nigeria Statistical bulletin.

3.2 Model Specification

The model employed in this study is in line with the work of Oyatoye et al. (2011). However, it was modified for the purpose of this research. It is estimated to cover a period of 1996 – 2012. The functional form of this model is expressed as thus:

$$\mathbf{GDP} = f(\mathbf{FDI}, \mathbf{MPR}) \dots\dots\dots (3.2.1)$$

Where,

GDP = Gross Domestic Product

FDI = Foreign Direct Investment

MPR = Monetary Policy Rate

The econometric model for Gross Domestic reaction function in equation (3.2.1) above is postulated as the following linear specification.

$$\mathbf{GDP}_t = \alpha_0 + \alpha_1 \mathbf{FDI} + \alpha_2 \mathbf{MPR} + U \dots\dots\dots (3.2.2)$$

Where; GDP, FDI and MPR are described in equation above (3.2.1)

α_0 = Constant regression estimate, α_2 . α_1 = slope regression estimates and e_1 = random error term

The vector autoregressive models for estimating the casual relationship among the series are formalized as:

$$\Delta \mathbf{GDP}_t = \beta_1 + \sum_{i=1}^n \alpha_{11} \Delta \mathbf{GDP}_{t-1} + \sum_{i=1}^n \alpha_{12} \Delta \mathbf{FDI}_{t-1} + \sum_{i=1}^n \alpha_{13} \Delta \mathbf{MPR}_{t-1} + U_{1t} \dots\dots (3.2.3)$$

$$\Delta \mathbf{FDI}_t = \beta_1 + \sum_{i=1}^n \alpha_{21} \Delta \mathbf{FDI}_{t-1} + \sum_{i=1}^n \alpha_{22} \Delta \mathbf{GDP}_{t-1} + \sum_{i=1}^n \alpha_{23} \Delta \mathbf{MPR}_{t-1} + U_{2t} \dots\dots (3.2.4)$$

$$\Delta \mathbf{MPR}_t = \beta_1 + \sum_{i=1}^n \alpha_{31} \Delta \mathbf{MPR}_{t-1} + \sum_{i=1}^n \alpha_{32} \Delta \mathbf{GDP}_{t-1} + \sum_{i=1}^n \alpha_{33} \Delta \mathbf{FDI}_{t-1} + U_{3t} \dots\dots (4.2.1) \quad (3.2.5)$$

Where β_1 = intercept, $\alpha_{11} - \alpha_{33}$ = coefficient of the explanatory variables, Δ first difference operator, n = maximum lag order and $U_{1t} - U_{3t}$ = random error terms.

Unit Root Test

Owing to the characteristic nature of time series data and its implication on the regression result if not checked, the Augmented Dickey-Fuller unit root tests were employed to test whether or not the data are stationary. The null hypothesis (non-stationarity) was tested against the alternative hypothesis of no unit root (stationarity).

Mathematically, the unit root equation can be expressed thus;

$$\Delta(Y_t = m_0 + m_1(X_{t-1}) + \sum_{i=1}^q \beta_1 \Delta(x_{t-1}) + E_t$$

Where: Y = variable being tested for unit, m_1 and β_1 = parameter estimates, q = maximum order of lag, Δ = notation for first difference, E_t = Error term.

Co-integration Test

Co-integration is conducted based on the test proposed by Johansen it has to do with modeling non-stationary time series variables. The algebraic specification of the model is thus;

$$J_{\text{trace}}(r) = -N \sum_{i=r+1}^n \text{Log}(1 - \lambda_i)$$

$$J_{\text{max}}(r, r + 1) = -N \text{Log} \sum_{i=r+1}^n \text{Log}(1 - \lambda_{r+1})$$

Where $F_{trace}(r)$ and $F_{max}(r, r + 1)$ denotes trace and max Eigen statistics respectively.

λ = coefficient of characteristics root, N = Sample Size, r = cointegrating vectors

n = lag length and log = notation of logarithm transformation

4. RESULTS AND DISCUSSION

4.1 Descriptive Analysis of the Series

The descriptive analysis of GDP, FDI, and MPR relating to the mean, min, max values, normal distribution, and standard deviation are stated in table 5.1 below.

Table 4.1: Descriptive Statistics for GDP, FDI and MPR

	FDI	GDP	MPR
Mean	109.9988	512.8824	12.67294
Median	125.83	495	13.5
Maximum	157.5	834	19
Minimum	21.89	88	6.13
Std. Dev.	45.43527	182.8483	3.512068
Skewness	-1.17245	-0.225233	-0.138567
Kurtosis	3.039584	3.095124	2.434015
Jarque-Bera	3.895922	0.150144	0.28131
Probability	0.142564	0.927677	0.868789
Sum	1869.98	8719	215.44
Sum Sq. Dev.	33029.82	534935.8	197.354
Observations	17	17	17

Source: Calculated by Authors from E-view 9 statistical Package

The descriptive statistics of GDP, FDI and MPR are seen in table 4.1 above. The result indicates that the minimum and maximum levels of FDI over the period (1996 -2012) are 21.89 and 157.5 respectively. Also, on average, Nigeria witnessed FDI inflow of 109.99. The Nigeria economic growth rate measured by (GDP) averaged 512.88, with a maximum and minimum value of 834 and 88 respectively. The average Monetary policy rate was 12.6% with a maximum of 19% within the period under review.

4.2 Test for Unit Root

The Augmented Dickey-Fuller unit root test was performed to ascertain the various levels of stationarity of the selected variables. The results are displayed in table 4.2 below:

Table 4.2: Unit Root Stationarity Test

Variables	ADF Test	Critical Value			Order of integration
		1% Critical value	5% Critical value	10% Critical value	
D(GDP)	-1.717356	-2.728252	-1.9663	-1.60503	(1)=1 St Diff.
D(FDI)	-3.231966	-2.728252	-1.96627	-1.605026	(1)=1 St Diff.
D(MPR)	-4.34806	-2.728252	-1.96627	-1.605026	(1) =1 St Diff.

Source: Calculated by Authors from E-view 9 statistical Package

The unit root test in table 4.2 shows that all the variables (GDP, FDI, and MPR) are integrated at order 1 (first difference) though at different levels of significance. From the result, only GDP was integrated at a 10% level of significance. While FDI and MPR were stationary at various levels of significance (1%, 5%, and 10%). Therefore all the time series in this study are stationary.

4.3 Test for Cointegration

Table 4.3: Cointegration Test Result

Series: GDP, FDI, MPR				
Hypothesized No. of CE(s)	Eigenvalue	Trace Statistic	0.05 Critical Value	Prob.**
None *	0.852106	41.04319	35.19275	0.0104
At most 1*	0.453214	35.37427	20.26184	0.0359
At most 2	0.198487	3.318806	9.164546	0.5228
Hypothesized No. of CE(s)	Eigenvalue	Max-Eigen Statistic	0.05 Critical Value	Prob.**
None *	0.852106	28.66892	22.29962	0.0056
At most 1*	0.453214	18.055464	15.8921	0.0279
At most 2	0.198487	3.318806	9.164546	0.5228

Source: Calculated by Authors from E-view 9 statistical Package

From the table 4.3 above, the trace, as well as the max Eigen statistics, are above their associated 5% critical values, which is an indication that there are two cointegrating equations. This collaborates the unit root test results in table 4.2 above, where we observed that all the variables are stationary at order one. The above cointegration result implies that there is a long run association in the variables thereby justifying the use of FMOLs in the estimation of the cointegrating equation model.

4.4 Cointegration Regression Analysis

The FMOLS was used to analyze the regressing cointegration equation. The result is as seen in table 4.4 below.

Table 4.4: Cointegrating Regression Result

Dependent Variable: GDP				
Method: Fully Modified Least Square (FMOLS)				
Sample Adjusted: 1996 - 2012				
Included Observations: 17 after adjustments				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
FDI	3.353174	0.847836	3.954982	0.0014
MPR	8.885031	7.898139	1.124952	0.2795
R-squared	-0.752728	Mean dependent var		522
Adjusted R-squared	-0.235066	S.D. dependent var		184.81
S.E. of regression	205.3865	Sum squared resid		590570
Long-run variance	39033.51			

Source: Calculated by Authors from E-view 9 statistical Package

Table 4.4 shows the cointegration result output of the observed variables. As can be seen, all the coefficients are not in consonance with apriori expectations. Both the FDI and MPR have positive coefficients (3.3) and (8.8) respectively. However, while the FDI coefficient conforms to apriori expectation, the MPR does not. Furthermore, The FDI is statistically significant at 5% level; this implies that a percentage increase in FDI will bring about a 3.3% increase in GDP. While MPR is statistically insignificant given the estimated probability level of (0.2) which is lower than 5%. The insignificance of the Monetary Policy Rate collaborates the work of Umuzuruike E. (2010).

5. CONCLUSION AND RECOMMENDATIONS

5.1 Conclusion

The study critically analyzed the relationship between foreign direct investment and economic growth. It concluded that foreign direct investment has a positive and significant impact on the gross domestic product; hence, it plays a pivotal role in propelling economic growth in the Nigerian economy. Furthermore, the Monetary policy rate though insignificant as revealed in the table (4.4) can still be impactful if complemented by other economic policies such as fiscal policy.

5.2 Recommendations

In line with the findings of this study, the following recommendations have been made.

- i. In order to attract foreign investors, the government should address the issue of the infrastructural deficit by embarking on the development of infrastructural facilities which will serve the purpose of reducing the cost of doing business in the country, thereby boosting both local and foreign investments.
- ii. A combination of monetary, fiscal as well as other trade policies geared towards attracting foreign investors should be strategically deployed by the government.

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