

Foreign Direct Investment - Growth Nexus: The Case of Nigeria³²

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Abstract

The quest by developing countries for increased FDI stems from the assumption that FDI leads to economic benefits within the host country. The study examined the paradigm ‘FDI led growth’ using dataset for Nigeria obtained from Central Bank of Nigeria span between 1970 and 2014. Modern econometric tools of Vector error correction model and Granger Wald test were employed. The econometric analysis reveals that there is steady long run relationship between FDI and output in Nigeria. Additionally, the causality result indicates that there is unidirectional causality between trade openness and per capita income, running from trade openness to per capita income proxy for economic growth. On the other hand, there is absence of short-run causality between FDI and economic growth in Nigeria. The policy implication is that FDI can be considered as an engine of growth and development. In the case of Nigeria, FDI can be used as a tool for structuring the economy and achieving inclusive growth. This can be done by attracting more FDI through creating conducive business environment, development of infrastructures and strengthening security especially in north-eastern part of the country.

Keywords: Economic growth, FDI and Vector error correction

Introduction

FDI plays a major role in developing countries like Nigeria. They act as a long term source of capital as well as a source of advanced and developed

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technologies. The investors also bring along best global practices of management. As large amount of capital comes in through these investments more and more industries are set up. This helps in increasing employment opportunities. FDI also helps in promoting international trade. This investment is a non-debt, non-volatile investment and returns received on these are generally spent on the host country itself thus helping in the development of the country (see Adewale, 2007; Jibir, 2015) In addition, there are existing empirical studies that have further highlighted the benefit of FDI in accelerating growth and development of a country (Folorunso, 2009; Okon, 2011; Oyatoye, 2011; Eravwoke and Eshanake, 2012; Jibir, 2015; Jibir, Adamu and Babayo, 2015).

FDI to Africa can be traced back to pre-independence era where foreign firms largely from European countries invested enormous resources to acquire natural resources like minerals, timber, oil etc. However, most African countries exhibits features which makes them unattractive to foreign investors especially FDI. First, given high dependence of these countries on export of few primary commodities, they became vulnerable to external shocks. Second, there reliance on agriculture and the usage of traditional implements expose them to such natural shocks, as drought and flood with severe adverse effect on economy. Unquestionable, these features sum of to make the region unattractive to FDI. Third, most of these countries have underdeveloped financial sector and low credit ratings (Udo and Obiora, 2006).

In 1970's, it is estimated that FDI inflows to Africa amounted to \$1 billion. By 1980, FDI inflows to Africa had grown to \$6.2 billion and \$23.8 billion during the period 2000-2010. The leading recipient of FDI inflows to Africa are South Africa, Nigeria and Egypt. In 2010, FDI inflows to South Africa amounted to \$6.4 billion representing 21.4 percent of the entire inflows to Africa. The continent has least proportion of FDI and the trend shows a continuous decline. Statistics indicate that in 2010 FDI inflows to Africa accounted about 4.0 percent of global inflows compared to 6.0 percent in the 1970's (UNCTAD, 2011). Thus, attracting FDI has become necessary for the development of their economies.

Many countries including Nigeria have undertaken structural and regulatory reforms such as privatization of state enterprises or liberalization of their foreign exchange market and establishment of fiscal incentives like tax holidays in order to attract more FDI. Given the abundance natural resources in the country and a large market size, qualifies her to be a major recipient of FDI in Africa and indeed one of the top three recipients of FDI in the continent. However, the level of FDI attracted by country has fallen drastically especially from 2009 to 2014 due to high level of insecurity bedeviling the north-eastern part of the country, political instability, poor infrastructures among other problems (Jibir, 2015).

There is volume of empirical studies that investigated the impact of FDI on economic growth of Nigeria with mixed findings and inconclusive results (Adelegan, 2000; Akinlo, 2004; Hansom, 2001; Adeniyi, Omisakin, Egwaikhide & Oyinlola, 2012). Besides that, most of the previous studies have not controlled for the problem of endogeneity. The contribution of this study to literature is twofold: firstly, it controlled for the problem of endogeneity and secondly, it has extended the study period by using large sample size and modern econometric techniques.

The paper is divided into five sections following the introduction, in section 2, review of related literature is undertaken, section 3, focuses on methodology and model specification while section 4, presents the result and findings of the study. Section 5 concludes the study with recommendations for policy action.

Literature Review

Empirical studies on the relationship between FDI and output remain vast and diverse both in developed and developing economies. For instance, Kelly (2016) investigated the impact of FDI on economic growth using data for East African countries, and applied modern econometric techniques; the result indicates that there is no relationship between FDI and output. Conversely, Adeniyi and Omisakin (2012) investigated the impact of FDI on economic growth using data for East African countries spanning between 1990 and 2005. The result shows that FDI induce growth in Ghana, Gambia and Sierra Leon but no short or long run relationship is found for Nigeria. Similarly, Jibir, Adamu and Babayo (2015) on the other hand looked at the relationship between FDI and output using data for Nigeria, the econometric result reveals that there is a positive correlation between FDI and GDP. Rehman (2016) studied the nexus between FDI and economic growth using data set for Pakistan, the result reveals that there is unidirectional causality between FDI and economic growth running from economic growth to FDI.

Erawoke and Eshanake (2012) examined the causation between foreign direct investment and Nigerian economy. The study employed the combination of ordinary least square, Augmented Dickey Fuller (ADF) unit root test, and the granger causality, to test if foreign direct investment granger cause economic growth in Nigeria. The study finds out that economic growth (GDP) does not granger cause foreign direct investment (FDI) in Nigeria. They recommend that government must appreciate the basic element of successful development strategy and encourage domestic investors before going after foreign investors considering the fact that they constitute the bulk of investment activities in the economy. Borensztein, De Gregorio and Lee (1998) studied the impact of FDI on economic growth. The empirical result reveals that FDI is an important vehicle for the transfer of technology,

contributing relatively more to growth than domestic investment. Similarly, Nair-Reicheif and Wanhold (2001) using a panel data of 24 developing countries, the study reveals that there is a strong positive nexus between FDI inflow, human capital and economic growth. Chakraborty and Nunenkamp (2008) examined the nexus between FDI and growth in India. They applied sector level analysis and the empirical result shows that the effect of FDI varies widely across reinforcing in the manufacturing sector, but no causality was found between FDI stock in service sector and output.

Oyatoye, (2011) conducted a study on foreign direct investment, export and economic growth in Nigeria. He examined the possible impact and relationship between foreign direct investment and economic growth in Nigeria. Data used for this study were sourced from annual accounts and statistical bulletin of the CBN. The scope covers a period of 20 years (1987-2006). Regression analysis of ordinary least square was used and the finding reveals that there is positive relationship between direct foreign investment and gross domestic product (GDP). They recommend that policies that will attract FDI inflows in the country should be encouraged. Okon, (2011) investigated the impact of foreign direct investment on economic growth in Nigeria. They employed econometric model using time series data spanning between 1970 and 2010. The study reveals that there is endogeneity i.e bi-directional relationship between FDI and economic growth in Nigeria. The finding shows that FDI and economic growth are jointly determined in Nigeria and there is positive feed-back from FDI to growth and from growth to FDI. The overall policy implication of the result is that policies that attract more foreign direct investment 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 rate.

Omankhanlen (2011) examined the impact of foreign direct investment on Nigerian economy. The study employed OLS regression techniques using time series data spanning from 1980 to 2009. Base on the data analysis it was discovered that significant impact on current account balance in balance of payment. While inflation was seen not to have significant impact on foreign direct investment inflows. The exchange rate has positive effect on foreign direct investment. Therefore it is recommended that for Nigeria to attract the desired level of FDI, it must introduce sound economic policies and make the country investor friendly. There must be a political stability, sound economic management and well developed infrastructural facilities. Folorunso (2009) examined the impact of foreign direct investment on economic growth of Nigeria. He employed granger causality and spearman's rho in the analysis. Time series data was utilized spanning from 1980 to 2007. The study reveals that the link between FDI and economic growth in Nigeria is very weak.

However, FDI is found to be related with export growth while human capacity building is found to be related to FDI flow. The endogeneity theory of FDI was found to be unrealistic for Nigeria. The study therefore, recommends infrastructural development, human capacity building and strategic policies towards attracting FDI flow.

Akinlo (2004) investigated the impact of direct foreign investment (DFI) on economic growth in Nigeria using data for period 1970-2002. The result from error correction model (ECM) shows that both private capital and lagged foreign capital have small significant impact on export and economic growth. Financial development, which measured as M2/GDP has significant negative impact on growth. This he attributed to capital flight. Also, the results showed labour force and human capital have significant positive effect on growth. These findings suggest for labour force expansion and education policy to raise the stock of human capital in the country. Dritsala et al (2004) applied co-integration and causality approach in which they found a positive long run equilibrium relationship between FDI and economic growth and a one-way causality between FDI and economic growth, running FDI to growth. Tang et al (2008) explored the causal link between FDI, domestic investments and economic growth in china between 1988-2003 using the multivariate VAR and ECM. The results indicate that there is a bi-directional causality between domestic investment and economic growth, while there is a single directional causality from FDI to domestic investment on economic growth.

Ogbekor (2005) examined the role of FDI and export on economic growth of Namibian economy from 1991 to 2001. Using a combination of bivariate and multivariate variable model, the study concludes that FDI and export aids economic growth potential, Althukorala (2003) examined the impact of FDI on economic growth of Sri Lanka between 1959 and 2002, agrees that the regression result do not provide much support for the view of robust link between FDI and growth in Sri Lanka. He posits that the situation is due to lack of improved investment climate such as good governance, accountability, political stability among others.

Adelegan (2000) explored the seemingly unrelated regression model to examine the impact of FDI on economic growth in Nigeria and found out that FDI is pro-consumption and pro-import and an analysis of causality between economic growth and FDI in pre and post deregulated Nigerian economy (1970-2007) is negatively related to Gross Domestic Investment.

From the studies reviewed above it can be noted that majority of the studies conducted using dataset for Nigeria did not properly control for endogeneity. This is because FDI is part of GDP, therefore, the in-built relation between them need to be considered to have a reliable result. Additionally, same econometric tools had been mostly applied by most of the studies. To this effect, there is need for the use of modern econometric tools

like VEC model to understand both the short-run and long-run nexus between the variables. Lastly, the scope of the studies need to be extended to cover recent trends and, this paves the way for comprehensive study.

Methodology

The study employed secondary data which was collected from Central Bank of Nigeria (CBN) (2015). The data collected is for the period 1970-2014. Given the objective of the study, which is to examine FDI-Growth nexus, a set of econometric techniques were employed to realize the objective. A unit test was conducted using Augmented Dickey Fuller (ADF) to determine the level at which the variables, included in the model are, stationary. Given multivariate nature of the model, Johansen co-integration test was also carried out us to detect long-run relationship between the variables. Vector Error Correction (VEC) model was estimated to establish the short-run and long-run causality among the co-integrating variables. VEC model was chosen so as to take care of the problem of endogeneity among the variables in the model.

Theoretical Model specification

There are quite a number of economic growth theories ranging from the classical, neoclassical and endogenous theories. These theories were propounded to identify and explain various variables influencing economic growth. The classical theorists laid much emphasis on capital as major determinant of growth, neoclassical extended the Harrod-Domar classical formulation by including labour and technology into the growth equation (Solow, 1956). Endogenous growth models succeeded neoclassical growth model. The Solow neoclassical growth model provided the theoretical framework of this study. The model permits the inclusion of a wider range of policy variables including foreign direct investment. The model also provides both theoretical foundation and analytical tool for analysis of the impact of FDI on economic growth in Nigeria. We specify an augmented version of the model with the following functional forms:

$$RGDP_t = AK_t^\beta L_t^\alpha FDI_t Z_t \text{-----} (1)$$

Equation (1) above can be linearized by dividing both sides by L and taking logarithm of both sides:

$$\ln Percapita_t = a + \beta_1 \ln K_t + \beta_2 \ln FDI_t + Z_t + \mu_t \text{-----} (2)$$

Where:

$\ln per\ capita_t$ = logarithm of real GDP per capita at time t; $\ln FDI_t$ = logarithm of Foreign Direct Investment at time t; $\ln K_t$ = logarithm of stock of physical capital proxied by logarithm of gross fixed capital formation ($\ln GFC$)

at time t; Z_t = a vector of controlled variables, which include inflation (INF) and trade openness (TOP) at time t; and β_1 and β_2 = Parameters μ = error term.

Estimation procedures

Before conducting vector error correction estimation on the relationship between FDI and economic growth, the variables must be found stationary individually and co-integrated at same order of integration 1(1). This implies that the test for stationary and the co-integration test must be done before estimating VEC model. The study applied the Augmented Dickey Fuller (ADF) test due to Dickey and Fuller (1979). This test will be based on an estimate of the following regression.

$$\Delta y_t = \beta_0 + \beta y_{t-1} + \sum_{i=1}^n \beta_1 y_{t-i} + \mu_t \text{-----(3)}$$

$$\Delta y_t = \beta_0 + \beta y_{t-1} + \sum_{i=1}^n \beta_1 y_{t-i} + \delta_t + \mu_t \text{-----(4)}$$

Where:

Y is a time series, t is a linear time trend, Δ is the first difference operator, β_0 is a constant, n is the optimum number of lags on the dependent variable and μ is the random error term. The difference between equations (3) and (4) is that the first equation includes just drift, but the second equation includes both drift and linear time trend.

Co-integration test and vector error correction model

Next, we employed the maximum-likelihood test procedure established by Johansen (1988) to test the presence of co-integration. Specifically, if Y_t is a vector of n stochastic variables, then there exists a p -lag vector auto regression with Gaussian errors of the following form: Johansen’s methodology takes it starting point from the vector auto regression (VAR) of order P given by:

$$Y_t = \mu + \Delta_1 y_{t-1} + \dots + \Delta_p y_{t-p} + \varepsilon_t \text{-----(5)}$$

Where:

Y_t is an $n \times 1$ vector of variables that are integrated of order commonly denoted (1) and ε_t is an $n \times 1$ vector of innovations.

This VAR can be written as:

$$\Delta y_t = \mu + \eta_{yt-1} + \sum \tau_i \Delta y_{t-1} + \varepsilon_t \text{----- (6)}$$

Where:

$$\Pi = \sum A_{i-1} \text{ and } \tau_i = - \sum A_j$$

To determine the number of co-integration vectors, Johansen (1988) suggested two statistic tests, the first one is the trace test (λ trace). It tests the null hypothesis that the number of distinct co-integrating vector is less than or equal to q against a general unrestricted alternatives q = r.

The second statistical test is the maximum eigen value test (λ max) and can be calculated based on the given equation below:

$$\lambda \max (r, r + 1) = -T \ln (1-\lambda r + 1) \text{ ----- (7)}$$

The test concerns a test of the null hypothesis that there is r of co-integrating vectors against the alternative that r +1 co-integrating vector.

After determining that the variable are stationary and are co-integrated at same order 1(1), then we applied vector error correction model to examine both the short run and long run nexus between FDI and economic growth. To achieve this objective, the below equation is estimated.

$$\begin{bmatrix} \ln \text{percapia} \\ \ln GFC \\ \ln FDI \\ TOP \\ INF \end{bmatrix}_t = \Gamma(L) \begin{bmatrix} \ln \text{percapia} \\ \ln GFC \\ \ln FDI \\ TOP \\ INF \end{bmatrix}_{t-1} + \Delta Z + \Pi \begin{bmatrix} \ln \text{percapia} \\ \ln GFC \\ \ln FDI \\ TOP \\ INF \end{bmatrix}_{t-i} + \begin{bmatrix} \varepsilon_1 \\ \varepsilon_2 \\ \varepsilon_3 \\ \varepsilon_4 \\ \varepsilon_5 \end{bmatrix}_t \text{ ----- (8)}$$

From equation 8, $\Gamma = A$ vector of deterministic variables including trends and dummy variables, $\Pi = \alpha\beta$, $\Delta =$ the operator of, $L =$ operator of lags, $\Delta Z =$ short-run dynamics.

Results and Discussions

Table 1: Augmented Dickey Fuller (ADF) Unit Root Test Result

Variable	ADF Statistics	Critical Value			Order of Integration
		1%	5%	10%	
LnPer Capita	-5.636517	-3.592462	-2.931404	-2.603944	I(1)
LnGFC	-3.702268	-3.670170	-2.963972	-2.621007	I(1)
TOP	-8.939599	-3.592462	-2.931404	-2.603944	I(1)
LnFDI	-11.95797	-3.639407	-2.951125	-2.614300	I(1)
INF	-6.745628	-3.596616	-2.933158	-2.604867	I(1)

Source: Authors' Computation

Table 1 contains the estimates of Augmented Dickey Fuller (ADF) unit root test of stationary. The statistics reveal that all the variables in the model are integrated at order. This implies the variables are stationary at first difference. This suggests that Johansen co-integration testing can be conducted to detect long-run relationship between the dependent and independent variables. As a result, Johansen co-integration equation has also been estimated and the results are presented in table 2 below.

Table 2: Johansen co-integration result

Co-integrating Rank (r)	Trace Test			
	Eigen Value	Trace Statistic	Critical Value	Prob.
$r = 0^{***}$	0.691158	83.69029	69.81889	0.0026
$r \leq 1$	0.484811	46.09269	47.85613	0.0725
$r \leq 2$	0.371602	24.86960	29.79707	0.1662
$r \leq 3$	0.242113	10.00300	15.49471	0.2805
$r \leq 4$	0.034755	1.131948	3.841466	0.2874
Co-integrating rank (r)	Maximum Eigen Value			
	Eigen value	Max-eigen value	Critical value	Prob.
$r = 0^{**}$	0.691158	37.59760	33.87687	0.0171
$r \leq 1$	0.484811	21.22309	27.58434	0.2630
$r \leq 2$	0.371602	14.86660	21.13162	0.2983
$r \leq 3$	0.242113	8.871056	14.26460	0.2970
$r \leq 4$	0.034755	1.131948	3.841466	0.2874

Source: Author's computation. Note: Trace and Maximum Eigen test indicates one co-integrating equation. *, ** denotes rejection of the null-hypothesis and critical values at 5% level of significance, respectively.

Both Maximum Eigen value and Trace statistics of Johansen co-integration reveal that there is at least one co-integrating equation in the FDI-Economic growth model. This shows the evidence of a long run relationship between per capita GDP and Foreign direct investment (FDI) in Nigeria. Establishing an evidence of long-run relationship in the model gives room for the estimation of Vector Error Correction Model (VECM) just to take care of the endogeneity among the variables under consideration. Table 3 contains the estimates of a VEC model for co-integrated variables to evaluate short-run and long-run relationship between the co-integrating variables. The long-run causal relationship is determined by the significance of the error correction term, and short-run causal relationship is established by the sum of the lagged coefficients of the independent variables at given levels of significance.

Table 3: Estimates of Vector Error Correction Model

	$\Delta \ln(\text{percapita})$	$\Delta \ln(\text{GFC})$	$\Delta \ln(\text{FDI})$	$\Delta \ln \text{INF}$	ΔTOP
ECT_{t-1}	0.348384 (0.31051)	2.979083 (0.81729)	6.020694 (1.64103)	160.9061 (140.060)	194.2605 (138.440)
$\Sigma \Delta \ln \text{percapita}$	-0.466481 (0.69716)	2.437922 (1.83501)	-7.14725 (3.6845)	-688.0058 (314.467)	-358.8577 (310.83)
$\Sigma \Delta \ln \text{GFC}$	0.196473 (0.14846)	0.457817 (0.39077)	1.244494 (0.78463)	115.41378 (66.9671)	9.357184 (66.1924)
$\Sigma \Delta \ln \text{FDI}$	0.012864 (0.07503)	0.007638 (0.1975)	-0.676049 (0.39656)	66.93007 (33.8458)	20.498124 (33.4543)
$\Sigma \Delta \ln \text{INF}$	-0.00069 (0.00087)	0.000973 (0.00228)	0.003497 (0.00457)	-0.787276 (0.39049)	-0.352975 (0.38598)

$\Sigma\Delta TOP$	0.001542 (0.0015)	-0.003385 (0.00394)	-0.010664 (0.00791)	-1.267277 (0.67481)	-0.957645 (0.667)
Constant	0.008765 (0.00605)	0.024080 (0.01593)	0.094892 (0.03198)	0.356934 (2.72948)	1.194417 (2.69791)
Statistics					
R-squared	0.377389	0.669518	0.773225	0.603461	0.357504
F-statistic	1.046969	3.499246	5.889391	2.628599	0.961106
Log likelihood	73.65413	43.65274	22.04311	-115.8060	-115.4452

Source: Authors' Computation

It is evident in table 3 that there is unidirectional causality between FDI and Economic growth, running from Economic growth to FDI since the error term of growth model is insignificant but that of FDI is significant. To assess the actual long-run impacts of variables in the models, the following equations are being specified based on VEC model estimates.

$$\ln \text{percapita}_{t-1} = 0.3560 \ln \text{GFC}_{t-1} + 0.1001 \ln \text{FDI}_{t-1} - 0.0008 \text{INF}_{t-1} - 0.0018 \text{TOP}_{t-1} - 0.0026 t - 2.3694 \text{-----} (3)$$

$$\ln \text{FDI}_{t-1} = 9.9900 \ln \text{percapita}_{t-1} - 3.5564 \ln \text{GFC}_{t-1} + 0.0080 \text{INF}_{t-1} + 0.0180 \text{TOP}_{t-1} + 0.0260 t + 23.6703 \text{-----} (4)$$

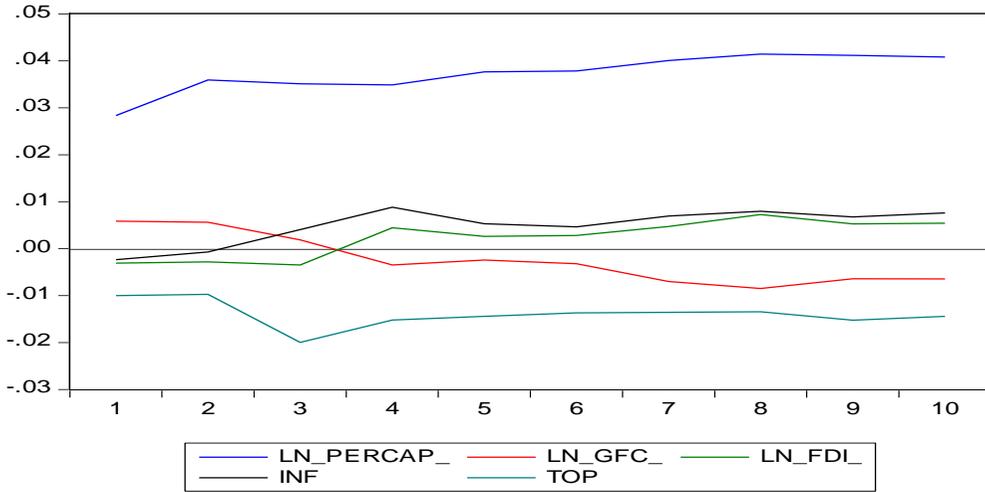
The above equations summarize the long-run relationship of the variables which is, to some extent, consistent with the theory: Per capita is related positively with GFC and FDI, but it is negatively related with INF and TOP. Moreover, FDI is related positively with per capita, INF and TOP, whereas it is negatively related to GFC. The Granger causality test sets out to establish whether there is short-run causal relationship between co-integrating variables. Table 4 reports the results of Granger causality test between the endogenous variables included in the estimated VEC model. There is unidirectional causality between TOP and per capita income, running from the former to the latter. In other words, there is no any evidence of short-run causality between FDI and economic growth in Nigeria.

Table 4: VEC Granger Causality/Block Exogeneity Wald Tests

	$\Delta \ln \text{percapita}$	$\Delta \ln \text{GFC}$	$\Delta \ln \text{FDI}$	ΔINF	ΔTOP
$\Delta \ln \text{percapita}$	-----	4.710785* (0.0949)	1.545073 (0.4618)	4.927067* (0.0851)	2.838404 (0.2419)
$\Delta \ln \text{GFC}$	3.465811 (0.1768)	-----	1.223278 (0.5425)	7.459299** (0.0240)	0.538994 (0.7638)
$\Delta \ln \text{FDI}$	0.110139 (0.9464)	3.094129 (0.2129)	-----	6.818730** (0.0331)	0.742787 (0.6898)
ΔINF	0.753598 (0.6861)	2.437230 (0.2956)	5.071844* (0.0792)	-----	1.949412 (0.3773)
ΔTOP	5.579774* (0.0614)	2.205494 (0.3320)	1.437790 (0.4873)	5.958761** (0.0508)	-----

Source: Author's computation. Note: values in parenthesis are estimated P-values, all other values are asymptotic Granger causality values. *, **, *** shows significance at 10%, 5%, and 1* level, respectively.

Figure 1: Response of LN_PERCAP_ to Generalized One S.D. Innovations



Furthermore, Generalized Impulse Response (GIR) function has been run to examine the response of per capita to a shock of generalized one Standard Deviation (S.D.) innovations. Figure 1 reveals the response of per capita to a generalized one S.D. innovation introduced through the GIR function for a period of ten years. Consequently, there exists evidence that GDP growth responds positively but weakly to generalize one S.D. innovations from other endogenous variables. Similarly, Generalized Impulse Response (GIR) function has been run to examine the response of FDI to a shock of generalized one Standard Deviation (S.D.) innovations.

Figure 2: Response of LN_FDI_ to Generalized One S.D. Innovations

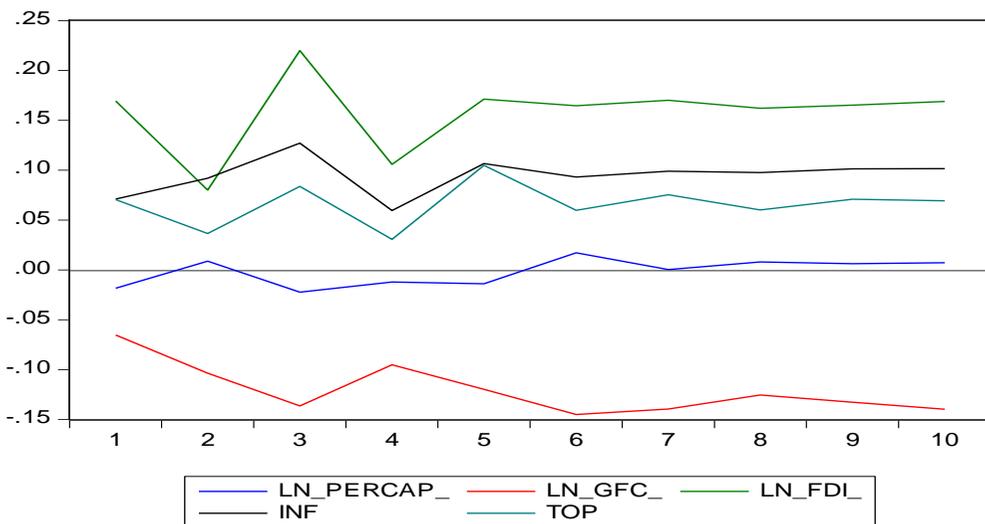


Figure 2 shows the response of FDI to a generalized one S.D. innovation introduced through the GIR function for a period of ten years. Consequently, there exists evidence that FDI responds positively and moderately to generalized one S.D. innovations from other endogenous variables.

Conclusion

Most less developed countries experience a shortage of capital, which is reflected in their respective saving-investment and import-export gaps. This implies that developing countries have insufficient savings/foreign exchange to finance their large investment needs for the overall development of their economies. To bridge this lacuna, they need an inflow of foreign capital. Foreign direct investment is thus an important source of capital for financing medium and large scale enterprises which in turn will provide job opportunities and reduce poverty in a country.

The overall objective of this study is to examine the paradigm of 'FDI led growth' using Nigerian dataset obtained from World Bank and Central Bank of Nigeria spanning between 1970 and 2014. After applying modern econometric techniques of vector error correction model and Granger Wald test, the result shows that there is long run and steady relationship between FDI and economic growth in Nigeria. Additionally, the causality result indicates that there is unidirectional causality between trade openness and per capita income, running from trade openness to per capita income proxy for economic growth. On the other hand, there is absence of short-run causality between FDI and economic growth in Nigeria. The findings of this study are in line with previous studies such as Chakraborty & Nunenkamp, 2008; Jibir, Adamu and Babayo, 2015 and Kelly, 2016. The policy implication of the above findings is that FDI can be considered as the engine of growth and development. In the case of Nigeria, FDI can be used as a tool for restructuring the economy from its present position of backwardness to a more robust and diversify economy through investment, income creation, employment among others.

In order to actualize this, the federal government and various states governments should as a matter of priority, improve the business environment by consciously providing the necessary social and economic infrastructures, which will lower the costs of production and attract FDI into the country. A related issue on business environment is the need to address the problem of bribery and corruption by supporting the anti-graft agencies. Besides that, government should encourage domestic investment through providing necessary incentives to local businessmen. Security should also be provided especially in the North-eastern part of the country in order to control terrorist activities and pave way for more investment in the region.

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