

EFFECT OF FOREIGN PRIVATE CAPITAL ON ECONOMIC GROWTH IN NIGERIA (1986-2017)

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ABSTRACT

Foreign capital has been acknowledged as one of the driving forces of economic growth. The study examined the effects of foreign private capital on economic growth in Nigeria, using time series data for the period 1986-2017. To achieve the objective, the study employed Autoregressive Distributed Lag (ARDL) for the analysis. The study used real gross domestic product as proxy for economic growth, being the dependent variable, while the independent variables in the model included foreign direct investment, portfolio investment, international remittance, gross fixed capital formation, labour force, government expenditure, and trade openness. Stationarity test was carried out using the Augmented Dickey-Fuller (ADF) unit root test. The result of the stationarity test indicate that the variables have mixed order of integration. The ARDL bound test indicated the existence of a long-run relationship or cointegration among the variables. Furthermore, the result of the AR root graph indicates that the variables are stable. The empirical study indicated that foreign direct investment, remittances, portfolio investment, and trade openness exert positive significant effect on economic growth in Nigeria. However, government expenditure was negative but statistically insignificant. Based on this finding, the study recommended that government should create an enabling environment that will spur the inflow of foreign private capital.

JEL classification: F3, E22, G11, O16

1. Introduction

In most developing countries, domestic savings are not enough to finance long-term investment. This constitutes a serious impediment to economic growth. Thus, in view of the low income coupled with low savings-investment and technology-gap, developing countries require external capital to finance domestic investment to accelerate the pace of economic growth and development. In this regard, foreign capital helps in supplementing capital deficiency and reduces the shortage of domestic savings prevalent in developing economies. It is expected that external resources will help to fill the savings-investment gap (Vinh, 2010).

Foreign capital inflow refers to the movement of financial resources from one country (especially developed economies) to another country (developing economies) to enable the latter achieve their economic potentials (Iyoha, 2004, Obadan 2004). Ogujiuba and Obiechina (2012), Ndubisi (2013) and Adeola (2017) disaggregated foreign capital into five components namely, foreign direct investment, foreign portfolio investment, official development assistance, remittances and foreign/external debt flows.

Foreign capital has been acknowledged by the World Bank (2000) as one of the factors that have accounted for the sustained economic growth of East Asia and Latin America. Ndubisi (2013) posited that foreign capital accounted for the rapid and sustained economic growth and development of most industrialized countries such as Japan, United States and most emerging economies like China, Russia, Malaysia, Indonesia, Brazil, India, South Korea and Singapore. Therefore, in order to achieve sustainable economic growth, Nigeria requires other sources of capital outside the domestic economy.

In 1986, Nigeria adopted the Structural Adjustment Programme (SAP). The economy was liberalized and provided an enabling environment for attracting foreign capital. In response to the liberalization of the financial sector, democratization of governance and government economic policies, such as the establishment of the Nigerian Investment Promotion Commission (NIPC), privatization and commercialization, deregulation of the Nigerian economy, and banking sector reforms, foreign capital inflows have increased considerably over the years. According to Owo (2011), the upward surge in foreign capital inflows to Nigeria, especially in the 1990s, was probably due to the economic reform

programmes implemented by the government which encouraged investors to move into the economy.

Statistics have shown that FDI inflow into Nigeria, which stood at ₦157.5 billion in 2000 rose to ₦586.3 billion in 2010 before declining to ₦8.8 billion, ₦7 billion, ₦5.5 billion, ₦4.6 billion and ₦3.4 billion in 2012, 2013, 2014, 2015 and 2016 respectively (UNCTAD, 2016). The decline in FDI as from 2012 was probably due to insecurity in the country resulting from the activities of Niger Delta militants in the South-South and Boko haram insurgency in the North-East, which had devastating effect on the Nigerian economy. Portfolio investment also increased from ₦51,079.13 million in 2000 to ₦116, 035.00 million in 2005, ₦703, 677.60 million in 2007, ₦350, 919.40 million in 2008, \$1.5 billion and US\$2.6 billion in 2011 and 2012 respectively (Central Bank of Nigeria, 2012). International remittances also increased from \$2.3 billion in 2004 to US\$17 billion in 2007 and increased further to US\$19 billion in 2008, US\$20 billion in 2010, US\$20.6 billion in 2012, US\$21 billion in 2014, US\$21.6 billion in 2014 and US\$21 billion in 2015 (World Bank, 2015).

The effect of foreign private capital on economic growth has become one of the most controversial issues in the empirical literature. Some scholars, like Ogujiuba and Obiechina (2012), Emmanuel and Ikenna (2016), and Adeola (2017), submitted that foreign capital has a positive effect on economic growth, while others, like Abdennour, Mohammed, Lakhdar and Rima (2014) and Uwubanwen and Ogiemudia (2016) posited that foreign capital has a negative effect on economic growth. It is against this backdrop that this study was undertaken. Its main objective is to investigate the effect of foreign private capital on economic growth in Nigeria using annual time series data for the period 1986 to 2017.

This study is structured into five sections. Following this introduction is section 2, which deals with review of related literature. Section 3 outlines the methodology and specification of the model to be empirically tested, while section 4 presents the results and discussion. The last section concludes and provides policy recommendations.

2. Literature Review

2.1 Conceptual literature

Foreign capital inflow is the flow of financial resources from rich, developed nations to the poor, underdeveloped nations. It could come from both private and public sources. From the private perspective, foreign capital can come in the form of foreign direct investment, remittances and foreign portfolio investment. Public sources include official development assistance (ODA) from bilateral and multilateral affiliates as well as foreign/external debt flows (Ogujiuba and Obiechina, 2012).

Ndubisi (2013) and Idoko, Idachaba and Agenyi (2015) viewed foreign direct investment as a long-term investment by a foreign investor in an enterprise resident in an economy other than the home country of the investor. It is an investment made to acquire a lasting management interest (normally 10% or more of the ordinary shares or voting power) in big enterprises operating outside the economy of the investor.

Remittances refer to all transfers from abroad in cash or kind received in a country by residents or non-residents. Remittances are the portion of migrant worker's earnings sent back from the country of employment to the country of origin. The World Bank (2014) classified total remittances to a country into three, which include migrant remittances, compensation of employees, and personal transfers. Workers'/migrants remittances are transfers from migrant workers resident in the host country for more than a year, irrespective of their immigration status, to recipients in their country of origin. Compensation of employees is the income of migrants who have lived in the host country for less than a year, while personal transfers refer to the net worth of migrants who are expected to remain in the host country for more than one year, that is transferred from one country to another at the time of migration.

Foreign portfolio investment (FPI) refers to non-FDI cross-order investment in equity and debt securities. Ndubisi (2013) viewed portfolio investment as an investment in financial assets, such as equity shares, debentures, and bonds, located in another country. It refers to the acquisition of assets by a foreign national or company in a domestic stock or money market.

2.2 Theoretical literature

The theoretical basis for this paper is anchored on three theories of capital. These theories include the “two-gap” theory, the three-gap theory and the neo-classical growth theory. The “two-gap” theory developed by Chenery and Strout and cited in Odoko, Englama and Nnana (2004), explained the various constraints experienced by developing economies in an attempt to industrialize. The basic argument of the two-gap model is that most developing countries face either a shortage of domestic savings to finance the investment required to attain a target rate of growth or a shortage of foreign exchange to finance needed imports of capital and intermediate goods. Hence, these gaps can be filled by the complementary role of foreign private capital to supplement domestic resources (Ndubisi, 2013).

More closely related to the two-gap model is the three-gap model by Bacha (1990), which is concerned with the “fiscal” gap between government revenue and expenditure. The three-gap theory is an extension of the two-gap theory. It is concerned with the interaction between savings-investment gap, foreign exchange gap and fiscal gap. The savings gap refers to the constraints to economic growth due to inadequacy of savings for investment; the foreign exchange gap refers to the constraints to economic growth due to the inadequacy of foreign exchange for importing capital goods; while the fiscal gap deals with the gap between government revenue and expenditure. When such gaps exist, there is the possibility of obtaining foreign capital to supplement domestic investments.

The neo-classical growth theory otherwise known as the Solow-Swan model posits that economic growth depends on increase in capital and labour and the pace of technological progress. The basic proposition of the neoclassical growth theory is that an increase in per capita GDP growth rate is a temporary phenomenon resulting from technological change. The neoclassical growth theory posits that technological progress is exogenously determined; this means that it is determined outside the model, hence it is called an exogenous growth model.

2.3 Empirical literature

Empirical studies on the effect of foreign private capital on economic growth are reviewed based on national and international studies. Massa and Macias (2009)

examined the long-run relationship between economic growth and different components of private capital inflows (cross-border bank lending, FDI and portfolio equity flows) on a sample of selected sub-Saharan African countries for the period 1980-2007. The study employed co-integration and an error correction model for the regression analysis. The result showed that FDI and cross-border bank lending have positive significant impact on SSA growth.

Ali (2011) examined the effect of FDI and other capital flows on growth and investment in developing economies for the period 1970-2010. The method of analysis was based on the autoregressive distributed lag (ARDL) approach. The results demonstrate the existence of a positive significant relationship between capital flows and economic growth.

Junaid, Khalid and Iqtidar (2011) investigated the long-run relationship between remittances and economic growth in Pakistan for the period 1976-2010. The study employed the auto-regressive distributed lag (ARDL) test and error correction model (ECM) for the analysis. The empirical results indicate a positive significant relationship between workers' remittances and economic growth in the long-run and short-run in Pakistan.

Abdenmour, Mohammed, Lakhdar and Rima (2014) examined the long-run relationship between remittances and economic growth in Algeria for the period 1970 - 2010. Vector error correction model (VECM) was used for the analysis. The result showed that remittances had a negative insignificant impact on the Algerian economy in both the short and the long runs.

Nahla (2015) explored the nexus between international remittances and economic growth in Kenya for the period 1993-2014. The method of analysis was based on Granger causality and the auto regressive distributed lag (ARDL) model. The empirical results showed that remittances were found to Granger-cause economic growth over the period of study. The ARDL result revealed that international remittance had a positive significant impact on economic growth in Kenya for the period under review.

In addition, Chigbu, Ubah and Chigbu (2015) examined the impact of capital inflows on the economic growth of Nigeria, Ghana and India from 1986-2012. Adopting the ordinary least squares (OLS) estimation technique for the analysis, the study found that capital inflows had a positive significant impact on the economic growth of the three economies.

Kanu (2015) investigated the impact of foreign capital inflows on economic growth of three sub-Saharan economies (Nigeria, Ghana and South Africa) for the period 1980-2012. The variables for the study included FDI, foreign portfolio investment, official development assistance and migrants remittances, which were used as proxy for capital flows. The study utilized the ordinary least squares method of multivariate regression for the analysis. The result showed that foreign capital inflow indicators, with the exception of FDI, had positive insignificant impact on the economic growth of the three economies.

Alley (2017) examined the relationship between capital flows and economic growth in sub-Saharan Africa for the period 1976-2010. He employed the autoregressive distributed lag (ARDL) test and the error correction model (ECM) for the analysis. The results demonstrate the existence of a positive significant relationship between capital flows and economic growth.

In Nigeria, Ogujiuba and Obiechina (2012) examined the effects of capital inflows on economic growth in Nigeria for the period 1986-2008. The study employed a non-restrictive vector autoregressive (VAR) – structural vector autoregressive (SVAR) model for the analysis. The result showed positive significant impact of capital inflows on economic growth in Nigeria.

Eshenake and Oriavwote (2012) investigated the relationship between FDI and economic growth in Nigeria for the period 1970-2000. The method of analysis was based on the OLS estimation technique. The result showed a positive significant relationship between FDI and economic growth.

Fasanya (2012) investigated the nexus between capital inflows and economic growth in Nigeria for the period 1970-2010. The study used the OLS estimation technique for the analysis. The variables used for the study were real gross domestic product taken as proxy for economic growth, and net foreign direct investment taken as proxy for capital flows. The result showed that capital inflows had a positive significant impact on economic growth in Nigeria

Baghebo and Apere (2014) examined the impact of foreign portfolio investment (FPI) on economic growth in Nigeria for the period 1986 -2011. The study employed the Johansen co-integration approach for the analysis. The result showed that foreign portfolio investment; market capitalization, and trade openness had positive significant effect on economic growth in Nigeria.

Emmanuel and Ikenna (2016) investigated the relationship between FDI and economic growth in Nigeria for the period 1980-2014. The study used the

ordinary least squares method of multivariate regression for the analysis. The variables utilized were real gross domestic product as proxy for economic growth, and net FDI inflows as proxy for capital flows. The result showed that FDI had a positive significant impact on economic growth in Nigeria.

Elias (2016) examined the impact of remittances on economic growth in Nigeria using annual time series data for the period 1981-2012. The study employed the OLS estimation technique for the analysis. The result showed that remittances had a positive insignificant impact on economic growth in Nigeria.

Okafor, Ugwuegbe and Ezeaku (2016) examined the impact of foreign capital inflows on the economic growth of Nigeria using time series data for the period 1981-2014. They employed the ordinary least squares (OLS) estimation technique for the analysis. They discovered a positive significant relationship between FDI and economic growth in Nigeria.

Adeola (2017) investigated the effect of different foreign capital flows (foreign direct investment, foreign portfolio investment, foreign debt flows, official development assistance, and remittances) on economic growth in four selected sub-Saharan African countries (South Africa, Nigeria, Kenya and Mauritius) over the time period 1970-2014. The study used co-integration and vector error correction modelling for the analysis. The result showed that FDI inflows, portfolio equity, official development assistance and remittances had positive significant impact on economic growth in the study areas while debt liability showed a negative insignificant relationship with economic growth for most of the countries studied.

However, from the literature reviewed, there are gaps that the present study intends to fill. Most of the previous studies that examined the effect of private capital on economic growth in Nigeria focused on only FDI. They did not include international remittance and portfolio investment, which are components of foreign private capital. The studies by Massa and Macias (2009), Junaid, Khalid and Iqtidar (2011), Adeola (2017) and Alley (2017) focused on three components. Also, their studies were based on cross-country analysis. In addition, some previous scholars used the ordinary least squares (OLS) estimation technique for the analysis which may not be appropriate where the data are non-stationary as it results in spurious regressions, and long-run relationship could not be ascertained. This paper is an attempt to fill such gaps.

To bridge the gap, this study, in addition to FDI, incorporated other variables such as international remittance, portfolio investment, gross fixed capital formation, labour force, government expenditure, and trade openness to make the model robust. Unlike previous studies that used OLS for the analysis, this study used the autoregressive distributed lag (ARDL) approach.

3. Methodology

The theoretical framework for this study is anchored on the neoclassical growth model developed by Mankiw, Romer, and Weil (1992). The model expresses output as a function of total productivity and capital stock as depicted in Equation (1):

$$Y = f(K, L) \tag{1}$$

$$Y = f(K^\alpha L^\beta) \tag{2}$$

The model in equation (2) is not linear and therefore transformed into a linear form as depicted in equation (3):

$$Y = \alpha_0 + \alpha K + \beta L \tag{3}$$

Estimating in logarithmic form, the model is as shown in Equation (4):

$$\ln Y = \alpha_0 + \alpha \ln K + \beta \ln L + \epsilon_{it} \tag{4}$$

where Y is the gross domestic product, a proxy for economic growth; K and L denote capital and labour respectively. α denotes the elasticity of output with respect to capital and β represent elasticity of output with respect to labour, \ln denotes the natural log and ϵ_{it} is stochastic error term.

This study employed the autoregressive distributed lag (ARDL) model developed by Pesaran, Shin and Smith (2001) to examine the long and short-run impact of private capital inflows on economic growth in Nigeria. The justification for the choice of this model was based on several advantages which ARDL has over other techniques of estimation. First, the estimates obtained from the long-run regression results using ARDL were consistent irrespective of whether the underlying regressors were stationary at I(1) or I(0) or a mixture of

both (Pesaran et al, 2001; Irefin and Yaaba, 2017). Secondly, it provides unbiased estimates of the long-run model as well as valid t-statistics, even when some of the regressors were endogenous. Thirdly, it is suitable for small sample size.

4. Model Specification

The model for this study was adopted from the works of Ogujiuba and Obiechina (2012) and Alley (2017), but with some modifications. The general form of ARDL specification is depicted in equation (5):

$$y_t = \beta_0 + \sum \beta_1 y_{t-i} + \sum \delta x_{t-i} + \mu_t \quad (5)$$

where: Y_t is the dependent variable which is a function of its lagged values Y_t as well as the lagged values of the independent variables X_{t-i} , and μ_t is the error term.

The mathematical form of the model is expressed as in equation (6)

$$GDP = f(FDI, REM, FPI, GFCF, LAB, GEXP, OPN) \quad (6)$$

The econometric form of the model is specified as in equation (7):

$$\ln GDP = \beta_0 + \sum \beta_1 \ln FDI_{t-1} + \sum \beta_2 \ln REM_{t-1} + \sum \beta_3 \ln FPI_{t-1} + \sum \beta_4 \ln GFCF_{t-1} + \sum \beta_5 \ln LAB_{t-1} + \sum \beta_6 \ln GEXP_{t-1} + \sum \beta_7 \ln OPN_{t-1} + i \quad (7)$$

where: GDP represents real gross domestic product (a proxy for economic growth) is used as the dependent variable while the independent variables are foreign direct investment (FDI), remittances (REM), foreign portfolio investment (FPI), gross fixed capital formation (GFCF), labour (LAB), government expenditure (GEXP), trade openness ((OPN) and i denotes pure white noise while $\beta_1 - \beta_7$ are the coefficient of the variables. All the variables for estimation in Equation [7] are estimated in their natural logarithmic function denoted by \ln in the model.

A priori expectations:

On a priori ground, we expect the value of $\beta_1 - \beta_7$ to be positive and greater than zero.

4.1 Data sources

The study used annual time series data covering the period 1986-2017. The data were sourced from *Central Bank of Nigeria Statistical Bulletin* (2017), National Bureau of Statistics (2017) and *World Development Indicators Database* (2017).

5. Results and Discussion

5.1 Test for stationarity

In any time series data, it is usually necessary to confirm that the mean, variance, and covariance are constant over time to avoid the problem of spurious regression. In view of this, the Augmented Dickey-Fuller (ADF) unit root test was performed to ascertain the order of integration. Table 1 presents the results of the stationarity test.

Table 1. Results of Stationarity Test

Variable	At level	At 1 st difference	Order of integration	Decision
<i>LnGDP</i>	(-2.000)	(-6.786)	1(0)	Not Stationary
	-2.963	-2.967	1(1)	Stationary
<i>LnFDI</i>	(-3.113)	-----	1(0)	Stationary
	-2.963			
<i>LnREM</i>	(-0.683)	(-5.404)	1(0)	Not Stationary
	-2.963	-2.967	1(1)	Stationary
<i>LnFPI</i>	(-0.837)	(-6.201)	1(0)	Not Stationary
	-2.980	-2.967	1(1)	Stationary
<i>LnGFCF</i>	(-0.020)	(-5.579)	1(0)	Not Stationary
	-2.960	-2.967	1(1)	Stationary
<i>LnLAB</i>	(-0.626)	(-5.407)	1(0)	Not Stationary
	-2.960	-2.963	1(1)	Stationary
<i>LnGEXP</i>	(-2.777)	(-5.165)	1(0)	Not Stationary
	-2.963	-2.971	1(1)	Stationary
<i>LnOPN</i>	(1.915)	(-10.471)	1(0)	Not Stationary
	-2.967	-2.967	1(1)	Stationary

ADF calculated in () & ADF critical value not in parenthesis.

Source: Computed by the author (2018).

The results of the stationarity test show that at 5%, the time series data for gross domestic product (GDP), remittance (REM), gross fixed capital formation (GFCF), labour force (LAB), government expenditure (GEXP) and trade openness (OPN) were stationary at their first difference, with a trend term included in the test equation. However, foreign direct investment (FDI) was found to be stationary at level 1(0). These results show that the variables have mixed order of integration, thereby lending support to the use of ARDL.

Table 2. Static Long-run Estimation Results

Dependent variable is lnGDP

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	40060.15	12535.28	3.195793	0.0036
lnFDI	0.066565	0.021871	3.043536	0.0053
lnREM	0.086437	0.043051	2.007793	0.0556
lnFPI	0.002808	0.000803	3.497103	0.0017
lnGFCF	3.397207	0.767329	4.427313	0.0002
lnLAB	0.637488	0.194784	3.272798	0.0030
lnGEXP	-0.056072	0.019592	-2.862056	0.0084
lnOPN	5.716654	2.728371	2.095262	0.0464
R-squared	0.841630			
Adjusted R-squared	0.757787			
F-statistic	23.79000			
D.W. Statistic	2.208278	Prob(F-statistic)		0.000000

The relevant critical values for unrestricted intercept and no trend at 0.05 are 4.27 and 4.56.

Source: Computed by the author (2018).

The ARDL bound test was used to ascertain the long-run relationship among the variables. From the analysis in table 2, the calculated F-statistic (F-statistic = 4.27) is higher than the Pesaran et al. (2001) upper bound critical value of 3.60 as tabulated in Pesaran et al (2001) at five per cent level of significance. This therefore indicates that there exists a long-run relationship or cointegration between the variables. Having established the cointegration relationship, the next step was to estimate the long-run estimated results.

The long-run estimated results show that the long-run overall model is well fitted. The coefficient of determination (R-square) and the adjusted R-square were 84 and 75 per cent respectively. This indicates a high explanatory power.

About 84% of the systematic variation in the dependent variable was explained by the independent variables. The remaining 16% left unexplained was due to factors exogenous to the model but being taken care of by the disturbance term (μ). Thus, the regression has a good fit.

The F-statistic, which is a measure of overall goodness-of-fit was 23.79000 with the corresponding probability value of 0.0000. This is statistically significant at the 5% level since the F-calculated (23.7) exceeds the critical F-value (2.51) at $v_1 = k - 1 = 6$ and $v_2 = n - k = 24$ degrees of freedom at $\alpha = 5\%$ level of significance $f_{0.05}(6,24) = 2.51$. Comparing the computed F-value with the critical F-value, we have $F = 23.7 > 2.51$. The Durbin-Watson statistic of 2.208278 indicates absence of autocorrelation.

The regression results show that the coefficient of foreign direct investment (FDI) is 0.066565 with a probability value of 0.0053. This regression coefficient is positive and statistically significant as shown by the probability value. This result implies that a unit increase in FDI would bring about 0.066565 unit rise in GDP. Furthermore, the coefficient of international remittance (REM) has a positive significant effect on economic growth in Nigeria. This result indicates that a unit increase in international remittance will increase economic growth by about 0.086437 unit, holding all other variables constant. Gross fixed capital formation, labour force and trade openness had a positive significant effect on economic growth. Foreign portfolio investment (FPI) also has a positive significant effect on economic growth in Nigeria. However government expenditure was negative but statistically significant. The policy implication arising from the results is that an increase in foreign private capital would lead to an increase in domestic investment and this would further stimulate economic growth in Nigeria. These results are in agreement with the previous submission by scholars like Ogujiuba and Obiechina (2012) Okafor, Ugwuegbe and Ezeaku (2016) that capital inflow has a positive significant effect on economic growth in Nigeria.

The results of the short-run parsimonious error correction model are presented in table 3. The analysis of the results shows that the lagged value of GDP is positive and statistically significant. The lagged value of foreign direct investment, portfolio investment and remittance exerted positive significant effect on economic growth in Nigeria. However, gross fixed capital formation, government expenditure and trade openness were not significant in the short run.

Similarly, the coefficient of labour (LAB) is also not significant in the short run as shown by the t-value.

The lagged error correction term (ECM) included in the model to capture the speed of adjustment towards the long-run equilibrium is negative and highly significant with a very low probability value of 0.012. This indicates that about 22.9 % of the disequilibrium from the previous year's shock will be corrected in the current year.

Table 3. Results of the Short Run Parsimonious Error Correction Model

Dependent variable is *lnGDP*

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	459319.3	56705.01	8.100155	0.0000
D(GDP(-1))	0.670301	0.171356	3.911736	0.0007
D(FDI(-1))	4.136947	1.542839	2.681386	0.0148
D(REM(-1))	0.034955	0.017312	2.019107	0.0578
D(FPI(-1))	0.069829	0.025685	2.718699	0.0141
D(GFCF(-1))	33.29545	21.67667	1.536004	0.1410
D(LAB(-1))	0.217750	0.165693	1.314180	0.2044
D(GXP(-1))	0.903335	0.978259	0.923411	0.3674
D(OPN(-1))	1.729178	9.365194	0.184639	0.8555
ECM(-1)	-0.229890	0.085211	-2.694732	0.0124
R-squared	0.637973			
Adjusted R-squared	0.611156			
F-statistic	17.98694			
D.W Statistic	1.872561	Prob(F-statistic)		0.000032

Source: Computed by the Author (2018)

5.2 Post-estimation analysis

5.2.1 Results of Serial Correlation Test

Test for autocorrelation was done using the Breusch-Godfrey Serial Correlation LM test. The results are presented in table 4.

From the results, the value of F-statistic is given as (6.60) and observed R^2 (12.00) with probability values (0.710 and 0.002 respectively). This probability values are greater than 0.05. The LM test confirmed the absence of serial correlation as shown by the low probability values.

Table 4. Results of Breusch-Godfrey Serial Correlation LM Test

F-statistic	6.601489	Probability	0.710738
Obs* R-squared	12.00169	Probability	0.002477

Source: Computed by the author (2018).

5.2.2 Results of Normality Test

The Jarque-Bera normality test was carried out to ascertain the distribution of the residuals in the model using histogram-normality test. The result of the normality test are presented in figure 1. The results show a probability value of 0.353042 which is greater than 0.05. This result indicates that the residual is normally distributed.

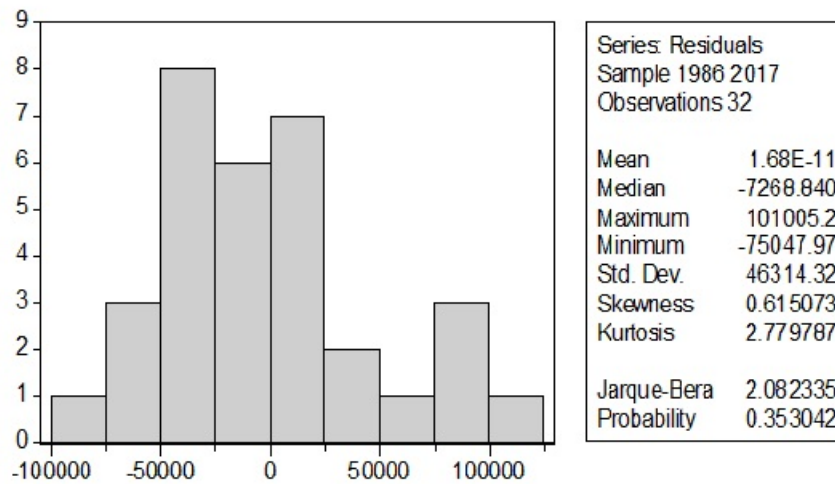


Figure 1. Results of Jarque -Bera Normality Test.

5.2.2 Results of Stability Test

To determine the stability of the model, the inverse roots of AR characteristic polynomial stability test was conducted. The estimated model is said to be stable only if all the roots have modulus less than one and lie inside the unit circle (Atoyebi et al., 2013). The results are presented in figure 2.

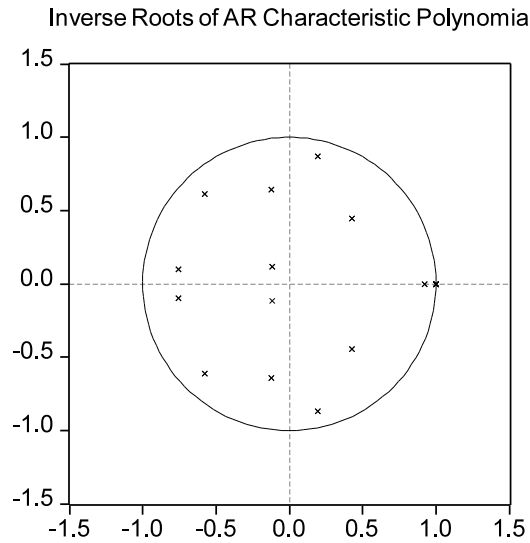


Figure 2. AR Root Graph for Stability Test.

Figure 2 shows that no root lies outside the unit circle. This result shows that the model satisfies the stability condition. The model is therefore satisfactory and robust for policy analysis.

Conclusion

This paper has examined the effect of foreign private capital on economic growth in Nigeria for the period 1986-2017, using the ARDL approach. The results of the analysis indicate that foreign direct investment, portfolio investment, remittances, trade openness, and gross fixed capital formation exerted positive significant effect on economic growth in Nigeria. However, government expenditure was found to be negative but statistically significant. Based on this finding, the study concludes that foreign private capital should be encouraged for the promotion of economic growth and development in Nigeria.

Recommendations

Based on the findings, the following recommendations are put forward.

1. Government should provide an investment-friendly environment that will spur foreigners to invest in Nigeria. This could be achieved through the provision of basic infrastructure like good roads, adequate electricity supply and security. This will boost foreigners' confidence to invest in the Nigerian economy.
2. Government should formulate sound macro-economic policies that would engender the openness of the economy. Increased trade openness through trade liberalization and other forms of FDI-induced policy should be vigorously pursued by the Nigerian government in order to spur the inflow of foreign capital.
3. Finally, government needs to increase her level of expenditure, especially capital expenditure. This will lead to increase in capital formation which will translate to economic growth.

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