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The Growth Effect of Capital Inflows: Evidence from Nigeria Using ARDL Approach

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ABSTRACT

Developing countries like Nigeria lacked sufficient domestic capital formation to stimulate growth which juxtaposed the need for foreign capital. This study investigated the growth implication of foreign capital inflows in Nigeria. The study adopted Augmented Dickey – Fuller (ADF), Bound Test and Autoregressive Distributed Lag to evaluate the relationship between real gross domestic product, foreign direct investment, foreign portfolio investment, external debt and savings. The results of the unit root test indicated that foreign direct investment and foreign portfolio investment are stationary at level while real gross domestic, external debt and savings are not stationary at first differences. The result of the bound test indicated that there is long run equilibrium relationship between different order foreign direct investment, foreign portfolio investment, external debt and savings and real gross domestic product. Findings from the study showed that foreign direct investment and foreign portfolio influenced economic growth in short run but not in the long run. Also, external debt was found to have negative effect on economic growth both in the short run and long run. Based on the causality test, it was found that foreign direct investment, foreign portfolio investment and external debt did not cause real gross domestic product while causality flowed from savings to real gross domestic product and vice versa. The study thus concluded that, the inflow of foreign capital had mixed effect on economic growth both in the short run and long run. The study recommended that government should formulate policies that will stimulate the inflow of foreign direct investment in the economy, government should introduce more liquid and advanced instruments in the capital market in order to attract foreign portfolio investment and finally foreign borrowings should be mainly used for developmental purpose through the provision of infrastructural facilities in order to promote the growth of domestic investment and foreign direct investment.

Key Words: External Debt, Economic Growth, Foreign Capital, Foreign Direct Investment, Foreign Portfolio Investment, Savings.

INTRODUCTION

Developing countries have significantly focused their attention in receiving financial assistance from developed and industrialized economy in the recent years. The advent of globalization arises from the fact that most developing countries lack the necessary resources to experience significant growth and development, hence the need for the inflow of foreign capital.

Foreign capital inflows involve the inflow of both tangible and intangible capital from foreign countries into a domestic country for investment purpose in order to promote growth and development. Chigbu, Ubah and Chigbu (2015) defined foreign capital inflow as the movement of capital resources into a country for investment, trade and production purpose. Foreign capital inflow can be regarded as the inflow of huge financial resources which enhances

economic growth and development through the movement of modern technology, inventions, innovations and technical expertise from foreign countries into a domestic nation (Fambon, 2013; Adusah-Poku, 2016).

According to Chigbu, *et al.,* (2015), foreign capital inflow plays a significant role in closing the gap between inadequate domestic savings and investment in emerging countries by making available the required capital and technical inventions and innovations in order to stimulate economic growth development. Capital inflow plays a significant and advantageous role in an economy through the inflow of new technologies and external finance which are directly expected to result in stimulation of domestic investment, creation of employment, creation of new market, gaining of critical technical knowledge, deepening of financial sector and revitalization of industrial sectors which were necessary perquisite for achieving meaningful growth and development (Fambon, 2013).

Economic growth refers to the significant improvement in the performance of an economy in terms of employment generations, poverty reductions, investments increment and productivities enhancement. The need for foreign capital inflow is built on the principle of vicious poverty circle which resulted in mismatch between savings and capital required for investment and growth which created a vacuum thereby leading to the need for additional sources of capital which could be complemented by foreign capital inflows (Kanu, 2015). Ocharo, Wawire, Nganga and Koseimbe (2014) asserted that in order to cover the savings-investment gap created by poverty and unemployment, developing countries requires substantial inflow of foreign capital for the purpose of stimulating capital accumulation, investment and productions which are necessary for reducing poverty, improving standard of living and promoting growth and development.

Over the years, since the adoption of Structural Adjustment Programme, Nigeria has experienced huge inflow of capital from developed countries like U.S.A., U.K., France and Germany among others. Eze and Okparaka (2017) opined that Nigeria has experienced the inflow of foreign capital through foreign portfolio investment, foreign aid, foreign direct investment, foreign remittance and external debts among others. According to Central Bank of Nigeria Statistical Bulletin (2017), the foreign direct investment fell from N 1,360.3 billion in 2011 to N 1,113.5 billion in 2012. Furthermore, foreign direct investment inflow into the economy continues to fall N 875.1 billion in 2013, N 738.2 in 2014, N 602.1 in 2015. However, the there was an increment in foreign direct investment to N 1,124.1 billion in 2016 before declining to N 1,069.4 billion in 2017 (CBN, 2017).

In the same vein, available statistics showed that inflow of foreign portfolio investment stood at N 792.4 billion in 2011 before rising to N 2,687.2 in 2012. However, in 2013, Nigeria recorded a decline of N 2,130.2 billion of foreign portfolio investment and has continued to decline with an inflow of N 832.4 billion, N 498.1 billion, N 477.0 billion in 2014, 2016 and 2016 reactively before rising significantly to N 2,604.3 in 2017 (CBN, 2017). From the above statistics, it could be seen that the Nigerian economy has experienced huge but fluctuating inflow of foreign capital since 2011.

Edu, Inaya and Bassey (2015) opined that in spite of the fact that Nigeria has experienced the inflow of foreign capitals in the recent years, the country has been facing the challenges of increased poverty, low capacity utilization, declining output, rising unemployment rates, unstable power supply and decay in infrastructure among others.

The effect of foreign capital inflows in the recent years has been a subject of debates among scholar. The first advocates of foreign capital asserted the inflows of capital from external sources assist in supplementing insufficient domestic savings thereby contributing significantly to investment, employment generation, poverty reduction and economic growth. Notable among these authors are Osinubi and Amaghionyeodiwe, 2010; Khadraoui, 2012; Odhiambo, 2011; and Ndambendia and Njoupouognigni, 2010; Orji, *et al.,* 2014; Adusah-Poku, 2016; Chigbu, *et al.,* 2017). Also, the second proponents are of the view that there is indirect relationship between foreign capital inflows and economic growth of developing nations (Akinlo, 2004; Burke & Ahmadi-Esfahani, 2006; Alfaro, Chanda, Kalimli & Sayek, 2001; Shahbaz & Rahman, 2010; Rehman and Ahmad, 2016; Kanu, 2015). These dividing views among scholars have generated an inconclusive result which need a further studies a developing country like Nigeria.

Furthermore, studies in the recent years have focused on the relationship between foreign capital inflows and economic growth in developing countries using panel data (Orji, *et al.,* 2014; Adusah-Poku, 2016; Rehman & Ahmad, 2016; Kanu, 2015; Chigbu, *et al.,* 2017). There is paucity of studies on the relationship between foreign capital and economic growth in Nigeria in the recent years. Furthermore, there are very few studies that examine the joint effect of foreign capital inflows like foreign direct investment, foreign portfolio investment and external debts on economic growth in Nigeria. This as thus, generated gap that need to be filled and this study examined the effect of foreign capital inflows on economic growth in Nigeria.

This paper is divided into five sections. Section one deals with introduction of the study. Section two focused on literature review. Also, three chapters captures methods adopted. Chapter four centered on interpretation of result while chapter five deals discussion of findings, conclusion and recommendations.

LITERATURE REVIEW

The need for foreign capital inflows resulted from the need to complement insufficient domestic savings in developing countries. In order to achieve meaningful investment, growth and development in the economy, there is need for adequate domestic savings which are not enough in most developing countries. Edu *et al.,* (2015) opined that the need for foreign capital inflows is based on the fact that foreign private capital inflows stimulate investment and productivity; result in competition among corporate organizations thereby leading to increase in unemployment and per capita income in the economy. According to Eze and Okparaka (2017) capital inflow creates a vicious circle leading to increased domestic investment which contributes to the achievement of higher growth through savings.

The advantages of capital inflows and other external financial resources include the complementation of domestic finance, enhancement of domestic investment, job creation, acquisition of knowhow by the workforce, as well as the competitiveness of exports (Fambon, 2013).

Orji *et al.,* (2014) employed Seemingly Unrelated Regression Estimation (SURE) technique to examine the effect of foreign capital inflows on output growth in West Africa Monetary Zone (WAMZ) economies over the period 1981-2010. It was revealed that capital inflow contributed positively to output growth in Nigeria, Sierra Leone, Ghana and Gambia. Chigbu et al., (2015) examined the impact of capital inflows on economic growth of developing economies in Nigeria, Ghana and India from 1986 to 2012 by adopting Augmented Dickey Fuller unit root and ordinary least square method. The study found that capital inflows have significant and

positive impact on the economic growth of the three countries. Adegboye, Ogbebor and Egharvba (2014) empirically examined the dynamic relationships existing between economic growth and the foreign capital factors of foreign direct investment (FDI), external debt and short term capital inflows. Results from the empirical analysis indicated that the categorization of foreign capital inflows into direct and foreign portfolio investment has significant relevance with regards to their effect on economic growth in Nigeria. It is also revealed that external debt has the strongest impact on economic growth in Nigeria compared to the foreign capital factors.

Ocharo *et al.*, (2014) investigated the causality between foreign direct investment, portfolio investment and cross-border interbank borrowing and economic growth; and analyzed the effect of foreign direct investment, portfolio investment and cross-border interbank borrowing on economic growth in Kenya. The OLS result revealed that foreign direct investment as a ratio of gross domestic product had positive and significant effect on economic growth while portfolio investment as a ratio of gross domestic product and cross-border interbank borrowing as a ratio of domestic product had positive and insignificant effect on economic growth. The causality test showed that there was a unidirectional causality from foreign direct investment to economic growth and from economic growth to cross-border interbank borrowing.

Nkoro and Uko (2013) evaluated the nature of causality between foreign capital inflows and real economic growth and also, the effect of foreign capital inflows on GDP in Nigeria. The result of the variance decomposition was in consonance with that of cointegration analysis of causality, which revealed that causality runs from foreign direct investment (FDI) and foreign aid to real GDP (growth). In addition, the result of the error correction model indicated that there is a significant positive effect of FDI on real GDP. Narayan (2013) examined the casual relationship between foreign capital inflows and economic growth in India using the pair-wise Granger causality test (1969).The important observations emerge from pair-wise Granger causality test, which showed there is the long-run equilibrium relationships exist between economic growth and Foreign Direct Investment (FDI), economic growth and Foreign Portfolio Investment (FPI). Aurangeb and Haq, (2012) investigated the impact of foreign capital inflows on economic growth of Pakistan using from the period of 1981 to 2010. Unit root test confirms the stationary of all variables at first difference. The multiple regression analysis technique was used to identify the significance of different factors and results indicated that the three independent variables are having positive and significant relationship with economic growth (GDP).

Obiechina and Ukeje (2013) examined the impact of capital flows (foreign direct investment), exchange rate, export and trade openness on economic growth of Nigeria as well as the causal long-run relationship among the variables, using time series data from 1970 – 2010. The unit root test confirmed the series to be stationary at I (1), while the Johansen Co-integration test suggested the existence of at least one Co-integration vector among the variables. Using Engle-Granger 2-Step procedure, it was observed that all the variables, except the FDI are statistically significant and influence economic growth in the short-run dynamic equilibrium model. Exogeneity test confirmed that FDI has weak exogeneity with economic growth. In addition, Temitope (2014) adopted both the Vector Autoregressive (VAR) analysis and the Impulse-Response Function (IRF) to examine the importance and the effects of domestic savings and foreign direct investment (FDI) on South African economy, using data spanning over the period 1975 to 2011. This result of the IRF showed that while increased domestic savings is important to improve the level of economic growth in South Africa, it also leads FDI. This means that the

economic environment needs to be suitable in order to attract foreign investments. The results obtained are reliable and stable as the model passes a battery of diagnostic tests.

Saibu (2014) examined the effects of capital inflow on economic growth using time series data analyzed using Autoregressive Distributed Lag (ARDL) bound testing. The result showed that capital inflow had significant impact on growth, thus providing empirical support for the modernization hypothesis that capital inflow and trade policy are complementary and growth enhancing. The paper concluded that trade liberalization policies tend to enhance effectiveness of capital inflow and jointly promote higher economic growth in Nigeria.

Angmortey and Tandoh-Offin (2014) examined the effect of foreign capital – foreign direct investment, foreign aid and grants and foreign commercial borrowing on domestic savings. The study made use of co-integration technique to estimate the long-run relationships and the Error Correction Model (ECM) to estimate the short-run dynamic savings model in Ghana. The outcome of the study shows that there is a positive and significant effect of foreign capital on real domestic savings in Ghana in the long run, though not steady but volatile. The short-run dynamic model revealed that foreign capital has no significant effect on real domestic savings in Ghana in the short run and the long-run. Asien and Oriavwote (2013) examined the association between foreign capital inflows to Nigeria and real growth rate of gross domestic product, domestic credit to the private sector, rate of inflation, perceived level of corruption and market capitalization. The data were analyzed using econometric models of co-integration technique and error correction model (ECM). Results of the parsimonious ECM tests suggested that high level of corruption constituted greatest impediment to foreign capital inflow to Nigeria.

The results also revealed that high rate of inflation had a negative impact on foreign capital inflow to Nigeria while domestic credit to private sector, real growth rate of gross domestic product and market capitalization had been beneficial to foreign capital inflow to Nigeria in the short run.

Okafor, Ugochikwu and Ezeaku (2016) investigated the relationship between foreign capital inflows and economic growth in Nigeria for the period of 1981-2014 using Toda Yamamoto test of causality to determine the relationship between foreign capital inflow and economic growth in Nigeria. The result revealed that there is bi-directional causality running from GDP to FDI as well as from FDI to GDP. It also indicates that there is a unidirectional causality between FPI and GDP with causation running from FPI to GDP. Furthermore, the result showed a unidirectional causality between GDP and FA with causation running from FA to GDP. Finally the joint causation between all the components of foreign capital inflow i.e. FDI, FPI, FA and GDP indicates that increase in foreign capital inflow causes GDP to increase positively.

Rehman and Ahmad (2016) assessed the effect of foreign capital inflow on economic growth of 21 developing countries for the period of 1990 to 2013 using panel unit root test and pooled mean group (PMG) estimation for short-run and long-run analysis and it was indicated that inflows including net external debt and net official development assistance had significant and negative impact on economic growth of developing countries, while net foreign direct investment and net remittances had positive and significant impact on economic growth in the long-run. Adusah-Poku (2016) examined the impact of three of the four forms of foreign capital inflows on economic growth in SSA by employing pooled mean group (PMG) estimator for dynamic heterogeneous panels. However, the results of the study indicated foreign capital inflows had positive and significant impacts on economic growth in the long run.

Abdillahi and Manini (2017) investigated the impact of private capital inflow and financial development on economic growth in Kenya, using a panel data analysis from 1970 to 2014 by employing Johansen cointegration test and ordinary least squares. The study found that there was a unidirectional causality from foreign direct investment to economic growth and from economic growth to cross-border interbank borrowing. Eze and Okparaka (2017) examined the causal and long-run relationship between foreign capital inflow and domestic savings in Nigeria from 1970 to 2014. The study employed unit root test of AD, Johansen Co-integration and granger causality test. However, the result of the analysis indicated that there is a long run relationship between foreign capital inflow and economic while the causality result indicated that there is uni-directional relationship between foreign capital inflow and domestic savings in Nigeria.

Edu *et al.,* (2017) examined the effect of foreign private capital inflows on Nigerian's gross growth rate (GDP), gross savings and investment, using data from period 1980 to 2013. The study employed Ordinary Least Square (OLS) and it was revealed that foreign capital inflow has a positive and insignificant effect of on economic growth and domestic investment, while having a negative and non-significant effect on national savings. Abdullahi, Garba and Magaji (2017) empirically analyzed the impact of foreign capital inflow on growth of sub-Saharan African countries for the period 2010-2015 using difference GMM. It was found that foreign capital inflow adversely affects the growth of the Sub-Saharan Africa economies. Chorn and Siek (2017) empirically examined the impact of foreign capital inflows consisting of foreign direct investment and official development aid on economic growth of developing countries using sample for 77 developing countries from 1997 to 2012 and analyzed using ordinary least square. It was found that FDI and ODA had positive and significant impacts on economic growth.

METHODS

This study employed ex post facto research design in order to examine the effect of foreign capital inflows on economic growth in Nigeria because the data for the study are mainly historical and non manipulative and analyzed using econometric techniques. Data were obtained from secondary sources from 1986 to 2017. The data for the research work are sourced from Central Bank of Nigeria Statistical Bulletin (2017).

This study adopted the dual-gap model which is an extension of the Harrod-Domar growth model in which growth is driven by physical capital formation. This dual-gap model stated that output depends upon the investment rate and the productivity of investment. A savings gap exists if domestic savings alone are insufficient to finance the investment required to attain a target rate of growth in the economy. The dual gap model can be derived as:

$$Y = C + I + (X - M) \quad (1)$$

Where Y= Aggregate National Income; C = Consumption; I = Investment; X = Exports; M = Imports.

$$Y + M = C + I + X \quad (2)$$

Where;

$$Y+M = \text{Foreign Resources} \quad (3)$$

$$C + I + X = \text{Domestic Resources} \quad (4)$$

By subtracting C from equation (3) and (4) and equating the equation together;

$$Y+M-C = C+I+X-C \quad (5)$$
$$Y+M-C = I+X \quad (6)$$

The equation is rearranged as:

$$Y-C+M = I+X \quad (7)$$

Science Y-C is Savings (S) therefore; S is substituted for Y-C

This leads to $S+M = I+X$ (8)

Where S + M is withdrawal and I + X is injection

Thus; I – S is the savings gap which requires foreign inflow of capital in order to simulate growth.

Based on the above, the study adapted the model of Kanu (2015) which was given as real gross domestic product as a function of Foreign direct investment inflows, Foreign Portfolio investment inflows, Overseas Development Assistance, Economic Migrants remittances, Degree of Trade openness, Prevailing exchange rate and Labor force. However, External Debts and Savings are employed in the study. External Debt represents an important foreign capital variable while Savings represents domestic resources.

$$RGDP = f(FDI, FPI, EXD, SAV) \quad (9)$$

The linear equation of this model can be written as:

$$RGDP_t = \beta_0 + \beta_1 FDI_t + \beta_2 FPI + \beta_3 EXD_t + \beta_4 SAV + e_t \quad (10)$$

Where:
GDP = Real Gross Domestic Product
FDI = Foreign Direct Investment
FPI = Foreign Portfolio Investment
EXD = External Debt
SAV = Savings
β_0 = Constant Term
$\beta_1 - \beta_4$ = Parameters of the variables to be estimated
e = Unexplained Error Term

Method of Data Analysis

The non-random behaviour of the time series data could undermine the usefulness of the standard econometrics methods if it was applied directly without estimating the time series properties of the data. Using non-stationary series in estimation of regression could yield spurious results. Thus, stationarity testing was conducted using the Augmented Dickey-Fuller (ADF). The ADF assumes that the error terms are independently and identically distributed.

It was found after the unit root analysis that foreign direct investment and foreign portfolio investment were stationary while real gross domestic, external debt and savings are stationary. Thus, the best estimation technique adopted in the study was Autoregressive Distributed Lag. The Autoregressive Distributed Lag approach estimates the short run and long run coefficient. The short run coefficient is given as:

$$RGDP_t = \alpha_0 + \sum_{i=I}\lambda_1 RGDP_{t-1} + \sum_{i=I}\lambda_2 FDI_{t-1} + \sum_{i=I}\lambda_3 FPI_{t-1} + \sum_{i=I}\lambda_4 EXD_{t-1} + \sum_{i=I}\lambda_5 SAV_{t-1} + ECT_{t-1} + \mu_t \quad (11)$$

From equation 11, ⍰⍰is the coefficients relating to the short run dynamics of the convergence to equilibrium, ⍰ represents the differencing of the varaibles, $ECT_{t⍰⍰}$⍰is the error correction term resulting from the estimated long run equilibrium relationship, and ⍰⍰is the coefficient denoting the speed of adjustment to long run equilibrium when there is a shock in the system. However, the long run coefficient is given as:

$$RGDP_t = \alpha_{01} + \sum_{i=I}\theta_1 FDI_{t-1} + \sum_{i=I}\theta_2 FPI_{t-1} + \sum_{i=I}\theta_3 EXD_{t-1} + \sum_{i=I}\theta_4 SAV_{t-1} + e_t \quad (12)$$

However, for the purpose of estimating the long run relationship among the varaibles ARDL Bound Test Co-integration is adopted. The model is given as:

$$D(L(RGDPt)) = \alpha_{01} + \beta_1 RGDP_{t-1} + \beta_2 FDI_{t-1} + \beta_3 FPI_{t-1} + \beta_4 EXD_{t-1} + \beta 5 SAV_{t-1} + \sum_{i=1}^{q}\alpha 1 RGDP_{t-1} + \sum_{i=1}^{q}\alpha 2 FDI_{t-1} + \sum_{i=1}^{q}\alpha 3 FPI_{t-1} + \sum_{i=1}^{q}\alpha 4 EXD_{t-1} + \sum_{i=1}^{q}\alpha 5 SAV_{t-1} + \varepsilon 1 \quad (13)$$

Where FDI, FPI, EXD and SAV are variables of study, D is first difference and ε is error term. Under the above equation, the null hypothesis is that no cointegration exist, whereas alternative hypothesis is that cointegration exist.

Other test that is conducted in this study includes correlation matrix and descriptive characteristics test. Also, Pairwise Granger Causality test is conducted in order to establish the direction of causality among the variables employed in the study.

Diagnostic Tests

Diagnostic test was conducted on the estimated model to examine the effect of foreign capital inflows on economic growth in order to validate the parameters of the estimated varaibles. Diagnostic tests such as serial correlation test using Lagrange Multiplier test, Heteroskedasticity and Jacque Bera Normality test were conducted.

PRESENTATION AND INTERPRETATION OF RESULTS

Test of Stationarity

Table 1: Unit Root Test at Level and First Differences

Level Form				First Differences			
Variables	**T-stat**	**5% Critical Value**	**P-value**	**T-stat**	**5% Critical Value**	**P-value**	**Order of Int.**
RGDP	-0.630165	-2.963972	0.8492	3.062111	2.963972	0.0405	**1(I)**
FDI	-3.632635	-2.960411	0.0107	NA	NA	NA	**1(0)**
FPI	-5.563832	-2.960411	0.0001	NA	NA	NA	**1(0)**
EXD	-0.387546	-1.952473	0.5359	-2.313178	-1.952473	0.0223	**1(1)**
SAV	-0.722180	-3.562882	0.9623	-4.032892	-3.568379	0.0183	**1(1)**

Source: Researchers' Computation, 2019

Table 1 reveals the summary of unit root test for the macroeconomic variables using Augmented Dickey Fuller test both at level and first difference. In order to reject the unit root the test statistics must be greater than the critical value at 5% level of significance in absolute term.

The table reveals that at level, foreign direct investment and foreign portfolio investment are stationary since their respective t-statistics are greater than their critical value at 5% while

real gross domestic, external debt and savings are not stationary at level since their t-value are less than the critical value 5% significant level.

However, when taken at first difference, it is indicated that real gross domestic, external debt and savings are stationary, since their respective t-statistics are greater than their critical value. Thus, the hypothesis of unit root is rejected for all the variables. The implication of this result is that the varaibles are integrated of different order with foreign direct investment and foreign portfolio investment integrating at 1(0) and real gross domestic, external debt and savings integrating at1(1).

ARDL Bound Result

Table 2: Bound Test

Test Statistic	**Value**	**K**
F-statistic	5.199154	4
Critical Value Bounds		
Significance	**I0 Bound**	**I1 Bound**
10%	2.45	3.52
5%	2.86	4.01
2.5%	3.25	4.49
1%	3.74	5.06

Source: Researchers' Computation, 2019

The co-integration result which measures the long run relationship among the varaibles is presented in table 2 using Bound Test. The result shows that the F-statistic value id given as 5.199154 which is greater than the upper bound critical value of 4.01 at 5% level of significance. This is implies there is long run equilibrium relationship between different order foreign direct investment, foreign portfolio investment, external debt and savings and real gross domestic product.

Autoregressive Distributed Lag Result

Table 3: Short Run Cointegrating Form

Variable	**Coefficient**	**Std. Error**	**t-Statistic**	**Prob.**
DLOG(FDI)	0.010655	0.007077	1.505582	0.1505
DLOG(FDI(-1))	0.015681	0.006329	2.477739	0.0240
DLOG(FPI)	0.007487	0.004023	1.861167	0.0801
DLOG(FPI(-1))	-0.017449	0.005109	-3.415733	0.0033
DLOG(EXD)	-0.044004	0.014146	-3.110633	0.0064
DLOG(SAV)	0.034768	0.041968	0.828428	0.4189
DLOG(SAV(-1))	-0.148974	0.059183	-2.517192	0.0222
CointEq(-1)	-0.609928	0.132353	-4.608354	0.0003

Source: Researchers' Computation, 2019

The short run co-integrating of the Autoregressive Distributed Lag technique is presented in table 3. The result shows that the current period of foreign direct investment has positive and insignificant effect on real gross domestic product. Also, the first period lag of foreign direct investment exerted positive but significant effect on real gross domestic product. This implies that an increase in foreign direct investment will lead to increase real gross domestic product in the short run.

Furthermore, the result shows that foreign portfolio investment has positive and insignificant effect on real gross domestic product in the current period while the first period lag of foreign portfolio investment has negative and insignificant effect on real gross domestic product. Similarly, the result shows that there is negative and significant relationship between external debt and real gross domestic product which implies that an increase in external debt will lead to fall in real gross domestic product in the short run.

The result of the short run co-integrating form also shows that savings has positive and insignificant effect on real gross domestic product which implies that an increase in savings will lead to fall in real gross domestic product. However, the result shows that at lag one, savings negative and significant effect on real gross domestic product.

Finally, the co-integrating equation (CointEq(-1)) has coefficient of -0.609928 which is significant at 5% significance level and it implies high speed of adjustment from shocks (variables of real gross domestic product) indicating co-integration and disequilibrium in the long-run indicating that disequilibrium in the previous period will be adjusted at a speed of 60% in the current period.

Table 4: Long Run Coefficient

Variable	Coefficient	Std. Error	t-Statistic	Prob.
LOG(FDI)	-0.002892	0.018954	-0.152569	0.8805
LOG(FPI)	0.034022	0.011808	2.881118	0.0104
LOG(EXD)	-0.008236	0.011469	-0.718087	0.4825
LOG(SAV)	0.221368	0.005961	37.136968	0.0000
C	8.986828	0.127874	70.278898	0.0000

Source: Researchers' Computation, 2019

Table 4 presents the long run result of the study. The result shows that foreign direct investment has negative and insignificant effect on real gross domestic product with a coefficient of -0.002892 which implies that 1% increase in foreign direct investment will lead to 0.2% fall in real gross domestic product.

Also, the long run result shows that there is positive and significant relationship between foreign portfolio investment and real gross domestic product with a coefficient of 0.034022 which implies that 1% increase in foreign portfolio investment will lead to 3% increase in real gross domestic product.

Furthermore, the result shows that external debt has negative and insignificant effect on real gross domestic product with a coefficient of -0.008236 which implies that 1% increase in external debt will lead to fall in 0.8% fall in real gross domestic product.

Finally, the result of the long run relationship indicates that saving has positive and significant effect on real gross domestic product with a coefficient of 0.221368 which implies that 1% increase in savings will lead to 22% increase in real gross domestic product.

Post Test Techniques

Table 5: Diagnostics Results

Diagnostics test	Observed value	P-value (Chi-square)
Normality Test	2.904393	0.2341
Breusch-Godfrey LM test for Serial Correlation	0.329460	0.8481
Heteroskedasticity Test: Breusch-Pagan-Godfrey	8.721320	0.7265

Source: Researchers' Computation, 2019

Table 5 shows the diagnostics test for the regression result. The table reveals that the residual is normally distributed given the value of the normality test which is statistically not significant. Likewise, the result of the serial correlation indicates that the residual is not serially correlated given p-value of 0.8481 which is statistically not significant. In the same vein, the result shows that the residual of the regression has no Heteroskedasticity problem.

Granger Causality Test

Table 5 Pairwise Causality Test

Null Hypothesis:	Obs	F-Statistic	Prob.	Result
FDI does not Granger Cause RGDP		1.02166	0.3745	Independent
RGDP does not Granger Cause FDI	30	0.65870	0.5263	Relationship
FPI does not Granger Cause RGDP		0.38769	0.6826	Independent
RGDP does not Granger Cause FPI	30	0.98782	0.3865	Relationship
EXD does not Granger Cause RGDP		0.28191	0.7567	Independent
RGDP does not Granger Cause EXD	30	4.02365	0.0306	Relationship
SAV does not Granger Cause RGDP		5.60467	0.0097	Bi-directional
RGDP does not Granger Cause SAV	30	7.32084	0.0031	Relationship

Source: Researchers' Computation, 2019

The 5 presents the result of Pairwise causality for the study. The result shows that there is unidirectional relationship between foreign direct investment and real gross domestic product which implies that foreign direct investment does not granger cause real gross domestic product.

The result also shows that foreign portfolio investment does not granger cause real gross domestic product with causality not flowing between foreign portfolio investment and real gross domestic product. The result also shows that unidirectional causality exist between external debt and real gross domestic product without causality running from external debt to real gross domestic product. Finally, bidirectional relationship is found between savings and real gross domestic product indicating causality between savings and real gross domestic product.

DISCUSSION AND CONCLUSION

Foreign capital inflow results from the inadequacy of domestic resources to cater for the development need of a nation. Capital usually flows from developed countries in forms of foreign direct investment, foreign portfolio investment and external debts among others in order to complement insufficient domestic resources for the purpose of supporting the growth aspiration of developing or emerging economies.

However, whether capital inflows have supported the development and growth of developing countries remains a question which needs to be answered. Thus, this study examined the effect

of foreign capital inflow on economic growth in Nigeria. The study found that though foreign direct investment had desirable effect on economic growth in the short run, while in the long run was undesirable which may result from expatriation of profit by multinational companies and divestment. Furthermore, it was indicated that external debt produced undesirable effect on economic growth in Nigeria both in the short run and long run.

Furthermore, it was indicated that the inflow of portfolio investment has negative effect on economic growth in the short run but positive effect in the long run. Finally, it was indicated that the effect of savings on economic growth in Nigeria was negative in short but had little desirable effect on economic growth in the long run which juxtaposed the need for foreign capital inflows. The study thus, concluded that foreign capital inflows had mixed effect on economic growth in short run but undesirable effect in the long run.

It was thus concluded that, policies like tax holiday should be formulated in order to encourage the inflow of foreign direct investment in the economy. Financial market should be highly liquid by introducing more advanced instruments in order to attract foreign portfolio investment. Finally, government should ensure that foreign borrowings are used for developmental purpose through the provision of infrastructural facilities in order to promote the growth of domestic investment and foreign direct investment. Foreign debt should be monitored in order to ensure that government should not go beyond its debt limit for the purpose of preventing crowding out of investment.

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