DIRECT AND REVERSE CAUSATION OF EXTERNAL DEBT, FOREIGN INVESTMENT AND ECONOMIC GROWTH IN NIGERIA, 1980-2017

Paper Type: Original Research Paper

ABSTARCT

This study examined the direct and reverse relationship among external debt, foreign investment and economic growth in Nigeria, 1980-2017. The study is ex-post facto in design and adopted the autoregressive distributed lag (ARDL) model, Granger causality test, bound co-integration test and error correction representations. It was found that external debt and exchange rate were significant functions of Real Gross Domestic Product. Foreign Direct Investment and its lag were insignificant functions of real gross domestic product. The bound test following the ARDL framework, showed evidence in favor of co-integration among the variables regardless their stationarity properties. The rightly signed error correction term of 30.4% gives an indication that it takes about 3.28 years to restore the long-run equilibrium state on the real gross domestic product should there be any shock from the explanatory variables. It is therefore recommended among others that government should create an enabling environment that will attract foreign investment given the catalytic role it plays on economic growth in Nigeria.

Keywords: External Debt; Foreign Investment; Causality Test; Nigeria; ARDL

1. Introduction

It is difficult for a developing country to support itself with only domestic financial resources because these resources are limited. The dual gap theory identifies the need for financial resources from foreign sources to augment available limited domestic financial resources as to achieve sustainable economic growth in a country especially for a developing country. Hence, countries with inadequate resources to handle a fiscal vacuum created by proposed expenditure and expected revenue within a fiscal year; and low capital formation always resort to borrowing externally from foreign countries to supplement their domestic savings (Ogumuyiwa, 2011; Aluko & Arowolo,2010; Ezeabisili,2006 and Nwachukwu, 2017).

Many countries in the world do borrow for many reasons among which include to finance various sectors of their economies especially industry, energy, transport and communication, education and agriculture among others which results in external debts. Soludo, (2003) noted that a country can borrow for macro- economic reasons which include to finance high level of consumption and investment; or ,to finance balance of payment deficit in order to avoid budget constraints and to boost the economy. Also, Jilenga, Helian and Gondje-Dacka(2016) noted that Tanzania, for some good reasons has borrowed and has been borrowing funds to finance some projects due to budget deficit or having low investment in the country on condition to repay the loan within a specific period of time.

There is no agreement among researchers on the appropriate effect of external debt on the economic growth of a country particularly in Nigeria. To Gana (2002) external borrowing is advantageous and necessary to increase the pace of economic growth as long as they are channeled to increase the economic productivity. Bolanle, Oladapo, Aluko(2015) are of the opinion that external debt and foreign direct investment (FDI) are required by developing nations like Nigeria to attain the economic status that will improve the standard of the living and increase the per capita income of the people as well to compete globally. Other researchers like Atique and Malik (2012); Meng and Sumaria (2013) believe that accumulation of external borrowing has a significant impact on the growth and investment of a nation up to a point where high levels of external debt servicing sets in and the willingness of investors to provide capital starts deteriorating. Whereas, Pattilo, Poirson and Ricci (2012) noted that low levels of external borrowing is preferable because it has positive effects on growth to a particular point or threshold above which accumulated debt begins to have a negative impact on growth.

The genesis of Nigeria's debt can be traced to 1958 when 28 million US dollar was contracted from the World Bank for the construction of railways. Following the fall in oil price in 1978 which exerted a negative influential shock on government finances, the debt profile of the nation started increasing. The debt of $69.7 million in 1960 to US 246.0 Million in 1970 (Obadan, 2004) was followed up with the first major borrowing of 1 billion US dollar referred to as the "jumbo loan" contracted from the International Capital Market (ICM) in 1978 (Adesola, 2009). The debt profile increased to US$9 billion in 1980, and stood at US$19 billion in 1985. In 1986, Nigeria had to adopt a World Bank and International Monetary Fund (IMF) sponsored Structural Adjustment

Program (SAP), with a view to reviving the economy, making the country better-able to service her debt (Ayadi and Ayadi, 2008), yet the debt stock and its services increased tremendously to the extent that Nigeria was grouped among heavily indebted poor countries (HIPC). The debt stock rose to US $716,815.6 billion in 1995 but came down to US$489269.6 billion in 2004. In 2005, it stands at about US$26,950,072 billion. This increase was due to interest, surcharges and penalties rather than increase in borrowing of new loan (CBN, 2006). Currently, the debt statistics from DMO showed that the current debt stock rose from $10.32bn in June 30th 2015 to June 30th 2018 to$22.08bn with growth rate of 114.15%.

External debt and FI are macroeconomic variables which tend to boost an economy. This is because both of them represent capital inflows which may likely increase the rate of capital formation that is necessary to propel economic growth. These variables may have shown some degree of positive or negative effect in economic growth. FI is one of the most important determinants of the rate of growth in an economy. Arguably, countries with high rate of investments experience high rate of growth, while countries with low investment rate are slow in their growth process (Tawiri, 2010).

A combination of private investment and well-directed external borrowing can boost a nation's financial needs. Studies carried out by Behname (2012); Sulaiman and Azeez (2012); Yagoob and Zhengming (2013); Melnyk, Kubatko and Pysarenko (2014); and Iqbal, Ahmad, Haider and Anwar (2014) report that external debt and foreign investment have growth-stimulating effect on the economy. In line with this opinion, Osinubi and Amaghionyediwe (2010) asserted that FDI supplements domestic financial resources in order to empower a country to effectually perform her development programs as well as elevate living standards of her populace. External debt and FDI are perceived as panaceas to these constraints, judging from the fact that it provides countries with the opportunity to increase capital formation.

Okon,Augustine and Chukwu(2013) opined that while the FDI and external debt growth linkage is still ambiguous, most macroeconomic studies nevertheless support the notion of a positive role of foreign direct investment within particular economic conditions. The emphasis is that there are three main channels through which FDI can bring about economic growth. Firstly, foreign direct investment augments domestic savings in the process of capital accumulation. Secondly, FDI is the main conduit through which technology spill-over lead to an increase in factor productivity and

efficiency in the utilization of resources which leads to growth. Thirdly, FDI leads to increase in exports as a result of increased capacity and competitiveness in domestic production (Kudaisi & Idharih, 2015). This linkage is often said to depend on another factor, called "absorptive capacity", which includes the level of human capital development, type of trade regimes and degree of openness (Ajayi, 2006).

External debt and foreign investment are assumed to be beneficial as some researchers like Oke and Sulaiman (2012), Melnyk, Kubatko, and Pysarenko (2014) believed, while some like Clement et al (2003), Cohen (1993) and Warner (1992) were of the opinion that these variables create more harm than good to the economic growth.

What applies within the context of the Nigerian economy remains an unresolved issue in research and the need to resolve this conundrum stimulated this study. In specific terms, the uniqueness of this study stems from the fact that it is focused on Nigeria which is the biggest economy in Africa and the fact that there is scarcely any study that has done a measurement of the effect of FI and External Debt on economic growth. Thus, this paper tends to empirically analyze the causal and reverse relationship among external debt, foreign investment and the economic growth of Nigeria from 1980-2017. This study specifically centered on private foreign investment and limits itself only to external debt and the economic growth. FDI and FPI data were combined because before 1995 there was no portfolio investment data for Nigeria and thus may prove difficult to work with.

This paper is organized in five sections. Next to this section discussed is section two which provides a brief summary of empirical literature, section three provides methodology and model specification, while section four shows empirical results and analysis and finally section five provides summary and conclusion of the study.

2. REVIEW OF RELATED LITERATURE

2.1 Conceptual Review.

Nwachukwu (2017) defined external debt as the borrowed fund from the foreign countries with specific percentage of interest rate attached to the money borrowed, whereas, World Bank (2004) defined external debt as debt owed to non-residents repayable in terms of foreign currency, food or

service. Also, Were (2001) described this economic variable as that part of a country's debt that is borrowed from foreign lenders including commercial banks, governments or international financial institutions like IMF, Asian Development Bank, World Bank or any other private corporation (Paris Club).

Foreign investments can be classified in one of two ways: direct and indirect foreign investment. Foreign direct investment inflows refer to capital that originate from the investor country to a host country. The foreign investor invests in assets of the host country. The foreign investor in such arrangement takes financial responsibility of the investment and also manages the assets in the host country (Ostadi &Ashjaa, 2014). Mugambi (2016) defined foreign direct investment as acquisition of foreign assets including foreign currency, rights, credits, property or benefits by foreigners.

Foreign portfolio investment (FPI), have been defined as a category of investment instruments that is more easily traded, may be less permanent, and do not represent a controlling stake in an enterprise. These include investments in equity instruments (stocks) or debt (bonds) of a foreign enterprise which does not necessarily represent a long-term interest.

2.2. Theoretical Review

The Dual – Gap Theory was propounded by Harrod and Domar in 1946 provides the motive behind external debt as pointed out by Jhingan (2004) which is to fill the lack of savings and investment in a nation as increase in savings and investment would lead to a rise in economic growth. However, Iya, Gabdo & Aminu (2013) stated that most economies have experienced a shortfall in trying to bridge the gap between the level of savings and investment and have resorted to external borrowing in order to fill this gap.

Eclectic theory of foreign investment developed by Professor Dunning is a mix of three different theories of direct foreign investments consisting of ownership advantages; location and internalization.(Dunning,1973,1980,1988).

In his own view, Lerner argues that if borrowed fund from abroad is used in financing current consumption, it is possible that intergenerational effect is likely to take place.

This study is anchored on the theory of dual-gap and Lerner's theory of investment based on the premise that the theories go to a great extent to explain the importance of external debt on a nation's savings to enhance domestic investment.

2.3. Empirical Review

Essentially, several empirical literatures abound on the study of relationship between external debt, foreign investment and economic growth, particularly, in both developing and developed all over the world. These literatures differ in terms of time, space, setting and methodology.

Asogwa, Okechukwu and Onyekwelu(2018) evaluated the effect of federal government external debts and external reserve on economic growth in Nigeria. The study spanned 2007– 2016. The analytical tools used were unit root test and ordinary least square. The study found out that external debt stock had a negative and significant effect on real gross domestic product.

Accordingly, Ajayi and Oke(2012) took an empirical look on the trend of foreign borrowed fund on the development and growth of the Nigeria economy using least square regression analysis with data source from CBN statistical bulletin, the research work reported that a high quantum of foreign borrowed fund bring about reduction in the value of a country currency, reduction in the economical work force, increase level of poverty and generally economic imbalances.

Furthermore, Ezikwe and Mojekwu (2011) and Ezeabasili, Isu and Mojekwu(2011) were two studies in Nigeria in support of an adverse effect of debt on economic growth. They studied the relationship between Nigeria's external debt and economic growth between1975-2006, with an error correction approach. Error correction estimate revealed that external debt has negative relationship with economic growth in Nigeria.

In contrast, Oke and Suleiman (2012) examined the level of external debt, investment, and economic growth in Nigeria during 1980-2008 by adopting a debt-cum-growth model along with the investment model. The result of their analysis indicates that, there exists a positive relationship between external debt, investment, and economic growth. Also, Monogbe (2016) empirically investigated the intergenerational effect of borrowed fund on the performance of Nigeria economy from 1981 to 2014. He used OLS, Philip Perron test, co-integration test and Granger causality test

to investigate the direction of causality between the variables used. He found out that external debt has positive and significant relationship with economic growth.

Nwannebuike Ike and Onuka (2016) examined the impact of external debt on economic growth in Nigeria. The period of study was 1980-2013. Ordinary Least Square was used to analyze the data. Diagnostic tests were conducted using Augmented Dick Fuller Unit Root Test, Co-integration and Error Correction Model. They discovered that External Debt had a positive relationship with Gross Domestic Product at short run, but a negative relationship at long run.

Yet, Ogunmuyiwa (2011) in his study "Does external debt promote economic growth in Nigeria", revealed that causality does not exist between external debt and economic growth as causation between debt and growth was found to be weak and insignificant in Nigeria. In other words, economic growth and external debt does not have any causal relationship.

Considering the relationship that exist between foreign debt, investment and the economic growth of developing countries, Wasiu and Mubaraq (2018) explored the relationship between foreign capital flows and economic growth in Nigeria by collecting annual data over the period of 1986 to 2015 from various sources. The study employed a combination of stationary and non-stationary series, and reported the absence of a long-run relationship between economic growth and its determinants in Nigeria; net FDI inflows exerted positive short-run influence on growth, while net portfolio flows and net foreign remittance had significant negative short-run effects on growth.

Moga and Igor-Mathieu (2016) empirically explored the impact of external debt and Foreign direct investment (FDI) on economic growth in Tanzania using time series data from 1971-2011. The empirical analysis was based on ARDL model and the Bounds test approach of co-integration as advocated by Pesaran et al (2001) to test for long-run equilibrium relationship. The results show that, in the long-run debt promote economic growth in Tanzania while foreign direct investment exhibits a negative impact on economic growth.

Azeez, Oladapo and Aluko (2015) studied the impact of external debt and foreign direct investment on the growth of Nigeria from 1990 - 2013. With gross domestic product (economic growth) as dependent variable on external debt and foreign direct investment inflows. The model used error correction modeling approach. The findings showed that external debt is negatively and

insignificantly related to economic growth while foreign direct investment is also negatively but significantly related.

Also, Kudaisi, and Idharhi, (2015) examined the impact of foreign direct investment and external debt on the economic growth of Nigeria. It adopts the debt-cum-growth model of Oke and Sulaiman (2012) with a little modification of the model so as to accommodate the FDI data within the period covered by the study. Augmented-Dickey Fuller unit root test, Johansen co-integration test and ECM were used to empirically analyze the model. The result of the study showed that FDI and external debt have a statistically significant effect on the economic growth of Nigeria.

In another dimension, Olusanya (2013) studied the impact of Foreign Direct Investment (FDI) inflow and economic growth in Nigeria from 1970-2010, using a granger causality test and found that there is a causality relationship between economic growth (GDP) and FDI inflows, which implies that economic growth drives foreign direct investment inflows into the country and vice versa.

Kehinde, Olanike, Oni and Achukwu (2015) are of the opinion that it is domestic debt that stifles investment rather than external debt. They investigated the effect of public borrowing on private investment in Nigeria. The study divides public debt into external debt and domestic debt. Johnasen Co-integration test and Vector Error Correction Model (VECM) were used in the analysis. The results showed that domestic debt crowds out domestic investment in both short run and long run, while external debt crowds in domestic investment in the long run.

Accordingly, Bamidele and Joseph(2013) examined the effect of financial crisis, external debt management on the economic growth of Nigeria using GDP as endogenous variable while exogenous variables measuring economic growth were Foreign Direct Investment, external debt, external reserve, inflation, and exchange rate proxies. Annual time series of 1980-2010 were used. OLS, Augmented Dickey Fuller (ADF) unit roof tests and the Granger causality test were employed in analysis. The result showed a positive relationship between FDI and economic growth while inverse relationship existed between external debt and economic growth.

Ezirim, Ofurum and Muogharu(2003) examined the impacts of external debt burden and FDI remittances on economic growth of Nigeria during 1970-2001. The authors used granger causality

procedure to test the causal relationship between external debt crisis and foreign investment crisis plaguing the country, and also x-rayed the relationship between these two variables and the GDP of the country. The results indicate the existence of dual causality between external debt and foreign investment burdens in the country.

3. METHODOLOGY

3.1 Data and Design

The study made use of the *ex post facto* research design that utilizes existing data on past events.The data for the analyses is annualized time series and is secondary in nature drawn from the Central Bank of Nigeria 2017 Statistical Bulletin from1980-2017. The study used Autoregressive Distributive Lag model (ARDL) to estimate the variables. The dependent variable for this work is economic growth proxy by real gross domestic product (RGDP) while the independent variables include external debt, (EXD), foreign investment (FDI) and exchange rate (EXCHR). Other preliminary tests like basic descriptive statistics test, unit root test and structural break test were applied in the estimation.

3.2 Model and Estimation Technique

This study followed Learner's theory of growth which sees GDP=*f*(Inv); while Inv=*f* (EXD). The general model for this work is thus stated as follows:

RGDP=$\beta_{0+}\beta_1 EXD+\beta_2 FDI + \beta_3 ECHR + u$*……..…..equation 3.1*

For the purpose of the estimation, ARDL model and Bound test were adopted following the form specified and advocated by Pesaran (2001) which appears thus:

RGDP=$\beta_0+\beta_1 EXD_{t-1}+\beta_2 FDI_{t-1}+\beta_3 ECHR_{t-1}+\sum ai\,\Delta GDP_{t-1} + \sum biFDI_{t-1} + \sum ciECHR_{t-1}+u_t$ eq.3.2

RGDP: Real gross domestic product used as proxy for economic growth.

EXD: External debt stock

FDI: Foreign direct investment representing capital inflows both direct and portfolio

ECHR: Exchange rate.

β_1-β_3: Coefficients of the Parameters of the variables;

μ: error term

ARDL Estimation Approach

ARDL technique is used for the baseline estimation. It has several advantages over other co-integration methods for which cause it is chosen for this work. Firstly, it is efficient in small samples and can allow a combination of I(0) and I(1) variables as per the stationarity of the variables. Other tools used include Bound test, consistent Breakpoint unit root test etc.

Bound Test Cointegration Approach

The bound test is a test for long run relationship following Pesarn Shin and Smith (PSS) (2001) Following the Bound test approach, co-integrating relationship among the variables is either established or not. Two critical values are to be used for the test for co-integration. They are the lower and the upper band. The decisions are to be made as follows:
Test statistics > upper band = co-integration
Test statistics < lower band = no co-integration
Test statistics within upper and lower band = inconclusive.

Error Correction Representation

At this stage we examine the speed of adjustment and dynamics of Real Gross Domestic Product to foreign direct investment, external debt and exchange rate. By this, we established the speed at which equilibrium is restored from shocks emanating from changes in the influencing variables or regressors.

Notably, if co-integration is established, short-run dynamic parameters is obtained by estimating an error correction model associated with the long run estimates:

RGDP= $\beta_{0+}\beta_1 EXD_{t-1}+\beta_2 FDI_{t-1}+\beta_3 ECHR_{t-1}+ECM_{t-1}$…….*equation3.3*

The estimates are subjected to diagnostic tests to confirm validity and reliability of the estimates.

Granger Causality Tests

In the second stage, causality test will be done using C.W.J Granger causality test method to determine the form of cause and effect relationship between economic growth, external debt and foreign investment represented by FDI.

4. Empirical Results

4.1 Basic Descriptive Statistics.

To show the statistical properties of the data under study, the basic descriptive statistics is shown in Tale 1 below:

Table 1 The Basic descriptive statistics of GDP and economic growth indicators:

Variables	Mean	Median	Maxi	Mini	Std	Skewness	Kurtosis	Jarque Bera	Pro
RGDP	414395	297884	1037361	31546.76	272741.8	0.92	2.68	5.49	0.06
EXD	1062990	593185	4890270	1866.800	1333848	1.52	4.24	17.07	0.002
EXCHR	80.97	57.203	305.2899	0.56000	80.43290	0.75	2.89	3.56	0.17
FDI	2.72E+09	1.5E+09	8.84E+09	1.09E+08	2.60E+09	1.03	2.82	6.64	0.04

Source: E-view 10. Computation by the Author.

Table 1 contains the basic measures of central tendency, spread and variations calculated on the level series of the dataset. The researcher's interest is the Jacque-Bera (JB) statistics which is a test for normality. JB is a combined test of a skewness(S) of zero (0) and a kurtosis (K) of three (3), which are signs of a mesokurtic distribution. Considering the P-value, only RGDP and EXCHR passed the normality test while EXD and FDI were not normally distributed. In this case, the JB statistics shows that the variables are positively skewed and mesokurtic with the exception of EXD (4.24). The assumption of normality is rejected by the JB statistics, as well as the K and S figures. This, however, does not affect the goodness of the data for the estimation in this study as the

kurtosis of all the variables are below 3 except EXD (4.24) and the skewness above zero. (Brooks, 2008).

4.2Stationarity Properties of the Series.

The first step involves determining whether the datasets contain unit roots in the individual level series and that they are integrated of the same order; that is, they require the same number of differencing to attain stationarity. The variables under study were tested for structural breaks because the traditional unit root test using Augmented Dickey Fuller Test did not account for structural breaks. This was done by running each variable as an endogenous factor of its constant subjecting the regression result to multiple breakpoint tests.

Table 2 Unit root Test for all the variables using ADF

Variables	Critical Values			ADF	Probability	Order of Intg
	1%	***5%***	***10%***			
RGDP	-4.23	-3.54	-3.20	-6.02	0.0001	I(1)
EXD	-4.23	-3.54	-3.20	-4.48	0.0050	I(1)
EXCHR	-2.63	-1.95	-1.61	-2.78	0.0071	I(1)
FDI	-4.23	-3.54	-3.20	-7.31	0.0000	I(1)

Table 2 shows the results of the Augmented-Dickey Fuller Unit Root Tests of all the variables. The results are found to be integrated of the same order. At first difference, the p-values are found to be less than 5% level of significance, and the ADF statistics are found to be more negative than the critical values. The different order of integration is a precondition for the use of ARDL because it accommodates integration of variables at different orders.

Having confirmed the stationarity of the variables, breakpoint test is presented in table 3 to show the structural breaks.

Table 3: Breakpoint Tests Result

External Debt		
Break dates	Sequential	Repartition
1	2006	2006
2	2013	2013
Exchange Rate		
Break dates	Sequential	Repartition
1	2011	2011
Foreign Direct Investment		
Break test	F-Statistics	Scaled F-Statistics / Critical Value
0 versus 1	1.852564	3.705128 / 11.47

Source: Author's Extract from multiple breakpoint tests of the variable under study, GDP, ARDL.

This shows that the variables being studied have breakpoints at different dates and intervals. From the above test result, it is obvious that all the variables, with the exception of FDI have problem of structural breaks. While the sequential section lists the dates in order of intensity, the repartition section shows the breaks in order of chronology. The presence of the structural breakpoints shows that the traditional unit root test is less powerful in confirming the stationarity property of the variables when confronted with structural breaks. Hence there is the need to do structural breakpoint consistent unit root test. This will involve additive and innovational outliers. An outlier is a shift in time series that cannot be explained why such a shift in time series failed to follow the original trend. An additive outlier appears a large or small value of a single operation, but subsequent observation is not affected by it. It returns to normal after a while. An innovative outlier is characterized by an initial impact and continues and grows over time. Additive and innovational outliers breakpoint unit root test are presented in table 4 below

Table 4 Breakpoint Consistent Unit Root Test.

Variables	Innovational Outliers				Additive Outliers			
	ADF	Cv@5%	Intg odr	B.dates	ADF	Cv@5%	Intg. Od	B.dates

Log RGDP	-8.59	-5.18	I(0)	2012	-16.66	-5.18	I(1)	2016
Log EXD	-9.07	-5.18	I(1)	2012	-8.30	-5.18	I(1)	2002
EXCHR	-5.69	-5.18	I(1)	2012	-5.98	-5.18	I(1)	2012
Log FDI	-5.81	-5.18	I(0)	2010	-6.08	-5.18	I(0)	2001

Source: Author's computation

This shows that the variables being studied have different and consistent breakpoints at different dates and intervals validating the choice of ARDL test in this study.

4.3. Regression Analysis and Interpretation.

As previously discussed, ARDL test is was used for the regression analysis as the consistent breakpoint unit root test showed that the stationarity properties of the variables were at I(0) and I(1).

Table 5 ARDL Short Run Estimates

Variable	Coefficient	Std. Error	t-Statistic	Prob.*
LOGRGDP(-1)	0.695929	0.071184	9.776480	0.0000
LOGFDI	0.004439	0.041917	0.105891	0.9165
LOGFDI(-1)	0.060616	0.040898	1.482124	0.1499
LOGEXTDEBT	0.277436	0.019058	14.55730	0.0000
LOGEXTDEBT(-1)	-0.217894	0.022637	-9.625600	0.0000
EXCHR	-0.005922	0.001206	-4.910278	0.0000
EXCHR(-1)	0.003747	0.002070	1.809974	0.0814
EXCHR(-2)	0.003760	0.001698	2.214507	0.0354
C	1.684488	0.929158	1.812920	0.0810

Source: Author's computation from E-views

Focusing on the above regression result, the coefficient of external debt of 0.28 at p-value of 0.000 less than the 0.05 level of significant indicates that a unit increase in external borrowing will lead to 28% increase in the gross domestic product of Nigeria. The coefficient of foreign investment of 0.004 at p-value of 0.91 greater than 0.05 level shows that a unit increase in foreign investment inflows have a 92% insignificant effect on the gross domestic product of the nation, thus, does not impact the economic growth of Nigeria. Also, the coefficient value of exchange rate is -0.005 at p-value of 0.000 indicating that any little increase in exchange rate will result in 0.5% decrease in the

gross domestic product of Nigeria indicating that, as an importing economy, any slight change ,negative or positive will automatically affect the real gross domestic product of Nigeria.

4.4. Diagnostic Test Result

To ensure the results are not biased, the R^2 (goodness of fit) =98%; DW (Durbin Watson) = 2.04; F-statistics= 0.000. To show the robustness of result a test for a high order autocorrelation is done using BGLM test. This is necessary because the DW has apparent time limitation. It has only the 1st lag. BGLM Test F-Stat= 2.65; P-v F-Stat 0.04. With the P-value less than 0.05 level of significance, there is a serial correlation, hence the need for the test of heteroskedasticity. Het (Breusch-Pagan-Godfrey) F-Stat 0.25756 (0.8554), Ramsey (RESET) F-stat= 0.00036 (0.98415). All the independent variables and their lags are significant function of the dependent variable (RGDP) except FDI in its 1st lag within the short run relationship.

Following table 5.1above, Log linear and non-log linear variables were used in running the regression. Log EXD, Log FDI, and EXCHR were used as independent variables.The coefficient of external debt of 0.28, at p-value of 0.000 less than the 0.05 level of significant shows a positive and significant response to gross domestic product. It also indicates that a unit increase in external borrowing will lead to 28% increase in the gross domestic product of Nigeria. The R^2 which is a show of the goodness of fit of the model is 93% which means that 93% of variation in RGDP was explained by the explanatory variables and about 7% of the relationship is explained by factors not captured by the model. The F-statistics of 92.70, P-value = 0.000 at a critical value of 0.05 shows that the overall regression is significant and can be used for meaningful analyses. The Durbin Watson statistics (DW) value of 2.04 indicates that evidence of a first order serial autocorrelation AR(1) is not suspected.

Given that External debt has a positive coefficient and a significant t-statistics probability value of 0.000<0.05, the null hypothesis is rejected and conclusion is that external debt has positive and significant relationship with the economic growth in Nigeria.

In relation to the cause and effect relationship of the variables, a causality test is done to determine the direction of the relationship. Causality occurs when lag values of a variable can be used to predict the current values of another variable. Cause and Effect relationship can be in three forms: Bi-direction, Unidirectional, and no causation. Causality test is prescribed in Table 6. From the

result of the Granger causality test, FDI and RGDP have a unidirectional relationship at p-value of 0.001 <0.005 showing a significant relationship between economic growth and foreign investment, While others have insignificant relationship with each other.

Table 6

Pairwise Granger Causality Tests

Null Hypothesis:	Obs	F-Statistic	Prob.
LOGFDI does not Granger Cause LOGRGDP	35	4.92152	0.0142
LOGRGDP does not Granger Cause LOGFDI		0.36126	0.6998

Following table 6 above, Log linear and non-log linear variables were used in running the regression. Log EXD, Log FDI, and EXCHR were used as independent variables. The F-statistics of log FDI and its p-value of 0.014 indicate a unidirectional relationship running from FDI to RGDP without a feedback from RGDP. The RGDP p-value is insignificant showing that there is no feedback to FDI. It is concluded that foreign investment has a causal relationship with gross domestic product of Nigeria. The more there is foreign investment inflow the more the economic growth is impacted.

4.6. Bound Test and Error correction Test.

A test for long run relationship between the variables was done using Bound test. It is a co-integration test in ARDL. It uses a combination of I(0) and I(1) variables; most suitable for data samples and not restricted in terms of stationarity of the variables.

4.6.1 Bound Test of Co-integration

Table7 ARDL Bound Test

Null hypothesis: No level relationship.

Test stat	Value	K
F-stat	11.1810	3

Significance	Critical values	
	I(0) bound	I(1) bound

10%	2.72	3.77
5%	3. 23	4.35
2.5%	3.69	4.89
1%	4.29	5.61

Focusing on the co-integration test for long run relationship in table 7 above, the null hypothesis is rejected because the F- statistics is greater than the lower and upper critical bands at 0.05 significant levels. This implies that long run equilibrium relationship exists between the variables. Therefore, error correction test is presented in table 8 below to determine how the deviation from short run equilibrium is restored in the long run.

Table 8 Error Correction Model of Long Run Relationship.

Indices	ECM(-1)	D(log EXD)	D(logFDI)	D(EXCHR)
Coefficient	-0.304	0.28	0.004	-0.06
Std.Error	0.004	0.02	0.03	0.24
T-Statistics	-7.03	17.55	0.14	7.07
P-value of t-stat	0.0000<0.05	0.0000<0.05	0.89>0.05	0.000<0.05

Source: Author's computation External Debt, FDI, ECM

Considering the result from the ECM model, the error correction term of -30.40% is negatively signed and with p-value of 0.000 less than 0.05 critical value. Hence, any departure from the short run equilibrium is corrected by 60.60% speed of adjustment in the long run. This is a convergence from the short run equilibrium to long run equilibrium showing how the RGDP adjust speedily to the shocks from the independent variables.

5. SUMMARY OF THE FINDINGS, CONCLUSIONS AND RECOMENDATIONS

This study examined the direct and reverse causality between external debt, foreign investment and economic growth in Nigeria, using the ARDL econometric analysis technique. The main objective of the study is to examine if a causal relationship exist between the economic growth, external debt and foreign investment in Nigeria. The specific objectives are: to examine the extent to which external debt affects gross domestic product of Nigeria; and to examine the causality between foreign investment and economic growth in Nigeria. This was done by modeling foreign domestic investment, external debt, exchange rate and economic growth (represented by gross domestic product as proxy) in Nigeria. The study used annual time series data from 1981 to 2017. In the

regression analysis, descriptive statistics, the Augmented Dickey Fuller (ADF) unit root test, consistent Breakpoint unit root test, the Granger causality test, Bound test of co-integration and Error correction model were employed, to examine the degree of integration among the variables. Empirical findings from the study showed that:

(i) External debt has significant and positive effect on economic growth;

(ii) Foreign direct investment has a unidirectional causality with real gross domestic product of Nigeria, without a feedback from gross domestic product. This implies that FDI is an important factor to the economic growth of an importing economy like Nigeria. The reason for the non-feedback from RGDP could be attributed to insurgency and insecurity inhibiting foreign investors from Nigeria;

(iii) Exchange rate has a negative but significant effect on the real gross domestic product of Nigeria.

(iv) The ECM result shows that about 30.40% of any disequilibrium between the short-run and long-run of external debt, foreign investment, economic growth relationship is covered within a year by a speed of adjustment of 60.60%.

It has been discovered from various research reports that external debt, foreign investment inflow have one form of relationship with economic growth especially in the developing countries like Nigeria. But the kind of impact, whether positive or negative is what has been discovered to be the issue of debate. Some researchers agree with positive significant impacts while others agree with negative impacts and to others no impact at all. In Nigeria various research reports have been carried out on external debt, foreign investment and economic growth. Nevertheless, it has also been discovered that no matter how good external debt and foreign investment have been in economic development, Nigeria have so far attracted little of foreign inflows due to insecurity, exchange rate instability, political crises and more so, and the much that has been attracted have not so far been retained. Secondly, external borrowing has been on the increase without being channeled to productive sector that guarantee positive return on investment. Mismanagement of borrowed fund has been ugly phenomena among the political class in Nigeria. This as a course for concern has led many research work into examining the direct and reverse cause and effect relationship between external debt, foreign private investment, and economic growth. This discourse being one of them, have looked at External debt, foreign direct investment and economic growth in Nigeria: direct and reverse analysis, using ARDL method, Bound test of co-integration

and consistent breakpoint unit root test and Granger causality. Causal relationship exist between FDI and RGDP without a reverse cause, whereas, external debt relationship with real gross domestic product is insignificant. Since external debt is significant and positive in this study, it implies that borrowed fund should be channeled properly to projects that will generate positive return on investment and should not be used to finance current consumption expenditures and the rate of borrowing should be reduced. The study found out that a causal relationship exists between foreign investment and real gross domestic product though without a response from RGDP. This implies that FDI can bring about economic growth if investment environment is provided for foreign investors. Here, the investors are moving out of Nigeria due to insurgency and political unrest in the nation as well as instability of exchange rate. The study recommends that insurgency and insecurity be reduced to a barest minimum, maintain a stable exchange rate so as to attract foreign investment into Nigeria and look inward for other factors that will also be a determining factor in boosting foreign investment in Nigeria. The study also recommends that the economy be diversified to agriculture, manufacturing etc.

REFERENCES

Adegbemi, B.O (2012*). Foreign Direct Investments and Economic Growth in Nigeria: A Disaggregated Sector Analysis. Journal of Economics and Sustainable Development, 3(10), 2012*

Abala, D. (2014*). Foreign Direct Investment and Economic Growth. An*

Adesola, W.A, (2009). *Debt Servicing and Economic Growth in Nigeria: An Empirical Investigation, Global Journal of Social Sciences*, vol. 8, (2), 1-11.

Ajayi, L.B. and Oke, M.O. (2012). *Effect of external debt on economic growth and development of Nigeria. International Journal of Business and Social Science, 3(2), 297-304.*

Aluko F. and Arowolo D. (2010). *Foreign aid, the Third World's debt crisis and the implication for economic development: The Nigerian experience.African Journal of Political Science and International Relations.* **4**(4): 120-127.

Asogwa, J. O. Okechukwu, E. U, Onyekwelu, U. L, (2018).*Evaluation of theEffect of Federal Government External Debts and Reserves on Economic Growth in NigeriaJournal of Economics and Sustainable Development 9(6), 2018.*

Atique, R. and Malik, K. (2012). *Impact of domestic and external debt on the economic growth of Pakistan. World Applied Sciences Journal, 20(1), 120-129.*

Ayadi, F.S and Ayadi, F.O (2008). *"The Impact of External Debt on Economic Growth: A Comparative Study of Nigeria and South Africa". Journal of Sustainable Development in Africa. 10 (3).*

Azeez, Oladapo, Olufemi and Aluko, (2015) *External Debt or Foreign Direct Investment: Which has greater significance Economic Impact on Nigeria.European Scientific Journal July .11(19).*

Bamidele, T. B. &Joseph, A. I (2013). *Financial crisis and external debt management in Nigeria, International Journal of Business and Behavioural Sciences, 3(4): 16-24.*

Behname, M. (2012). *Foreign direct investment and economic growth: evidence from Southern Asia. Atlantic Review of Economics, 2.*

Bolanle Azeez, Fapetu Oladapo, and Olufemi A. Aluko**.***External Debt Or Foreign Direct Investment: Which Has Greater Significant Economic Impact On Nigeria? European Scientific Journal July 2015, 11(19)*

Borensztein, E. (1990).*Debt overhang, credit rationing and investment. Journal of Development Economics, 32,315-335.*

Chowdhury, A.R. (2004).*External debt, growth and the HIPC initiative: Is the country choice too narrow? In: Addison,T.Hansen, H and Tarp, F editors. Debt Relief for Poor Countries. 8. New York 2004, 158-180.*

Clements, B, Bhattacharya, R and Nguyen, T.Q. (2004).*External debt, public investment, and growth in low-income countries. IMF Working Paper WP/03/249, International Monetary Fund.*

Clements, B., Bhattacharya, R., and Nguyen, T.Q. (2003). *External Debt, Public Investment, and*

Cohen, D. (1993). *"Low Investment and Large LDC Debt in the 1980s." American Economic Review, 83(3): 437-449.*

Corden, W. M. (1989). *"Debt Relief and Adjustment Incentives." in Jacob, F.*,Dunning, J. H. (1988). *The Eclectic Paradigm of International Production: A Restatement and Some Possible Extensions. Journal of International Business Studies, 19(1), 1-31.*

Eduardo,B. (2009). The effect of external debt on Investment. *European Journal of Accounting Auditing and Finance 4(2), 33-48.*

Elbadawi, I.A., Ndulu, B.J., Ndung'u, N. (1997).*Debt overhang and economic growth in Sub-Saharan Africa.In Iqbal, Z., Kanbur, R., editors. External Finance for Low-income Countries.*

Washington, DC: International Monetary Fund.Empirical Analysis of Kenyan Data. DBA African Management Review. 4(1), 62-83.

Ezeabasili, V. N, Isu, H.O and Mojekwu, J.N (2011*). Nigeria's External Debt and Economic Growth: An Error Correction Approach. International Journal ofBusiness and Management, 6, (5) May.*

Ezikwe, J.E., Mojekwu, J.N. (2011).*The impact of external debt on macro-economic performance. International Journal of Business and Management Tomorrow, 1(2), 1-12.*

Foreign Direct Investment for D8 Member Countries. Walia Journal, 30(3), 18-22.

Gana, J.M. (2002). *Nigeria's external debt: causes and implications. Ibadan: National Centre for Economic Management and Administration.*

Growth in Low-Income Countries, IMF Working Paper WP/03/249, InternationalMonetary Fund, Washington D.C.

Iqbal, N., Ahmad, N., Haider, Z. & Anwar, S. (2014*). Impact of foreign direct investment (FDI) on GDP: a case study from Pakistan. InternationalLetters of Social and Humanistic Sciences, 5, 73-80.*

Iyoha, M. A. (1996). *External Debt and Economic Growth in Sub Saharan African Countries: An Econometric study*. Paper presented at AERC workshop, Nairobi.

Kehinde J. A, Olanike .B, Oni E, and Achukwu. *Public Debt and Private Investment in Nigeria. American Journal of Economics2015, 5(5): 501-507.*

Krugman, Paul. (1988). *Financing vs Forgiving a Debt Overhang.* National Bureau of Economic Research, Cambridge. MA 02138, USA.

Kudaisi, B.V Idharhi, K. F*FDI, Foreign Debts and Growth in Developing Countries:Evidence from Nigeria Developing Country Studies 5(17), 2015*

Li Meng. and M. Sumaria (2013).*"Does External Debt Increase Net Private Wealth? The Relative Impact of Domestic versus External Debt on the US Demand for Money" Journal of Applied Finance & Banking, 3 (5), 2013, 85-91.*

M. P. Dooley and P. Wickham, (eds), Analytical Issues of Debt, International Monetary Fund, Washington, D.C.

Maurren Teresa Odongo, (2014).*The Impact of External Debt on Private Investment in Kenya: Empirical Investigation, 1970-2002 University of Nairobi East Africa.*

Melnyk, L., Kubatko, O. & Pysarenko, S. (2014). *The impact of foreign direct investment on economic growth: case of post communism transition economies. Problems and Perspectives in Management, 12(1), 17-24.*

Moga Tano Jilenga, Helian Xu and Igor-Mathieu Gondje-Dacka *The Impact of External Debt and Foreign Direct Investment on Economic Growth: Empirical Evidence from Tanzania International Journal of Financial Research 7(2), 2016 Sciedu*

Monogbe, T. G. (2016). *Intergenerational Effect of External Debt on Performance of the Nigeria Economy. NG- Journal of Social Development, 5 (2) January.*

Nwachukwu, N.P (2017). *Responsiveness of Economic Growth To External Debt Overhang in Nigeria, 1980-2015. Un-published Dissertation work submitted to Department of Banking and Finance, Enugu State University of Science and Technology (ESUT), Enugu.*

Nwannebuike S.N, Ugwu, J.I and Onwuka .I.O. (2016). External Debt and Economic Growth: The Nigeria Experience. *European Journal of Accounting Auditing and Finance Research.* 4 (2): 33-48, February.

Obadan, M.I (2004). *"Foreign Capital Flows and External Debt: Perspectives on Nigeria and the LDCs Group" Ibadan University Press.*

Ogumuyiwa, M. S. (2011). *Does External Debt Promote Economic Growth? Current Research Journal of Economic Theory* 3(1): 29-35.

Oke, M. O and Sulaiman, L. (2012). *External Debt, Economic Growth and Investment in Nigeria. European Journal o*f Business and Management. 4 (11).

Okon, J. U. Augustine and Chukwu, A. (2013).*"Foreign Direct Investment and Economic Growth in Nigeria: An Analysis of the Endogenous Effects" Current Research Journal of Economic Theory, 4(3), 53-66*

Osinubi, T.S. and Amaghionyeodiwe, L.A. (2010). *Foreign private investment and economic growth in Nigeria. Review of Economics & Business Studies, 3(1), 105-127.*

Ostadi, H. and Ashja, S. (2014). *The Relationship Between External Debt and*

Pattillo, C., Poirson, H. & Ricci, L. (2002). *External debt and growth (Working Paper 02/69). Washington D.C.: International Monetary Fund.*

Purity Kagendo Mugambi (2016).*The Impactof External Debt Serviceon Foreign Direct Investment Inflows in Kenya (1980-2014) A research paper submitted to*

Sachs, J. (1984). *"Theoretical issues in international borrowing". Princeton Studies in International Finance, 54. Princeton, N.J.: Princeton Univ. Press.*

Soludo, C. C. (2003), *Debt Poverty and Inequality in Okonjo- Iweala, Soludo and Mulitar (Eds), The Debt-Trap in Nigeria*, African World Press NJ, 23-74.

Sulaiman, L. A. and Azeez, B. A. (2012). *Effect of External Debt on Economic Growth of Nigeria. Journal of Economics and Sustainable Development. 3 (8).*

Tawiri, N. (2010).*Domestic Investment as a drive of economic growth in Libya. International Conference on Applied Economics – ICOAE, 759 – 767.*

University of Nairobi 2016

Warner, A.M. (1992).*Did the debt crisis cause the investment crisis? The Quarterly Journal of Economic, 107(4), 1161-1186.*

Wasiu Adekunle and Mubaraq Sulaimon*A Re- examination of the Relationshipbetween Foreign Capital Flows andEconomic Growth in Nigeria. Munich Personal RePEc Archive. MPRA Paper 87754, 2018 18(49) UTC*

Were, M. (2001). *The Impact of External Debt on Economic Growth in Kenya: An Empirical Assessment*, UNU-WIDER Research paper, DP 2001/116.