

## IMPACT OF PUBLIC DEBT ON ECONOMIC GROWTH IN NIGERIA

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### ABSTRACT

*This study examined the impact of public debt on economic growth in Nigeria. Specifically, the study evaluates the impact of external debt, external debt service payment and domestic debt on the GDP of Nigeria spanning 1981 to 2020. The ex-post facto research design was adopted for this study. Time series data were obtained from the World Development Index (WDI) and the Central Bank of Nigeria (CBN). To test for stationarity of the time series data, the Augmented Dickey Fuller unit root test (ADF) was carried out for all the variables and the results were confirmed using the Philips Perron Unit root test. The study applied the Autoregressive Distributed Lagged model as econometric methodology in order to investigate the long-run and the short run relationship between public debt and economic growth in Nigeria. Findings of the study revealed that the time series data became stationary at first difference while the coefficients of external debt and domestic debt had positive and significant impact on economic growth in Nigeria and on the flip, external debt service payment had a negative and significant impact on economic growth of Nigeria in the long run. The implications of these findings are that, the more the public borrow externally and internally to finance capital projects, the more the economy will grow ceteris paribus. On the other hand, the servicing of debts and interest repayment on same mars economic growth in Nigeria. The Study therefore recommends that; borrowed funds should be adequately utilised for productive and profitable projects in Nigeria. Furthermore, Nigeria should seek debt forgiveness to avoid continuous debt servicing and interest repayment as well as the spreading of more credit facilities to mop up higher powered money (money out of control of the financial system) from the economy.*

**Keywords: Impact, Public Debt, Economic Growth, ARDL, Nigeria.**

### INTRODUCTION

In Nigeria, the public borrowing policies over the world have especially experienced a turning point with the World War I (1914–1918) and the great depression of 1930s (World Bank, 2010). During the period in question, John Maynard Keynes had proposed public borrowing as a

war financing to England and argued that it would be useful. In the process that started with this proposal, public borrowing became an indispensable source of financing for the states (World Bank, 2010). This situation does not mean that states participated in Keynesian theory. While public borrowing becomes an indispensable source of financing, it also brings the debt-interest cycle, poverty, and crises. The result of public borrowing leaves a great burden on the next generations. Especially after the World War II, public borrowing indicated both significant increase and structural changes due to on the one hand the repair works of the countries affected by the war, on the other hand, the financing needs of developing countries (World Bank, 2010). In the following period, the borrowing process are no longer interstate and have started to gain a new dimension by establishing international organizations such as International Monetary Fund (IMF), World Bank (WB), International Finance Corporation (IFC), International Development Association (IDA), European Investment Bank (EIB), and Islamic Development Bank (IDB)(World Bank, 2010).

The quest for economic growth and development compelled Nigeria to acquire external debt. Ever since then, there has been accumulation of loans aimed at various development projects without obvious results as expected. The problems associated with debt and debt servicing prompted CBN to warn that rising Nigeria's debt is an impediment to economic growth and development. Government debt can easily become a burden on the economy weakening its foundation, warning that the authorities should recognise that accumulating debt also means accumulating risks by increasing claims on unrealised future income.

The Nigeria scenario before Debt forgiveness of 2006, is a glowing example with an inconsequential debt of \$1 billion in 1971, to accumulate up to \$40 billion towards the end of 2005, with over 75% from the Paris Club alone. The case is still obtainable today, as the country has since 2010 has been financing her budget deficit with loans from various multinational agencies (World Bank, 2010). Most of Nigeria's domestic debt which was mostly long-term in 2010 became more of short-term, that is, they had maturity of less than one year. This led to increased debt service burden. As at end-2012, the Nigerian total public debt service / GDP ratio stood at 0.5 per cent. With the debt forgiveness in 2005, Nigerian foreign debt which was hitherto being driven by Paris Club was being dominated by the multilateral debt. Nigeria recorded a government debt equivalent to 17.50 percent of the country's Gross Domestic Product in 2018. Government Debt to GDP in Nigeria averaged 32.40 percent from 1990 until 2018, reaching an all-time high of 75 percent in 1991 and a record low of 7.30 percent in 2008(World Bank, 2020). The concern is that excessive domestic borrowing could crowd out private sector investment which is the main driver of Nigeria's economy conversely inhibiting economic growth as the government competes with the private sector for available funds. The Debt Management Office (DMO) released the latest debt statistics on Tuesday, October 15<sup>th</sup> 2019 which showed that federal government's external borrowing climbed 32.38% to \$27.16 billion, while States including FCT grew by 5.10% to \$4.27 billion as at the end of June 2019 (DMO, 2019).

The gross increase in the total debt stock has exposed the nation to high debt burden and has resulted to the poor growth of the nation's output. Nigeria's high debt burden has had grave consequences for the economy and on the welfare of the people. The servicing of the debt has

severely encroached on resources available for socio-economic development and poverty alleviation; it has further depressed investment and hence economic growth.

Despite the government's conscious efforts in managing the nation's debt through increased private sector lending, reduction in debt burden coupled with debt relief that was granted Nigeria around 2005 and 2006 the issue of debt has still been a burden to Nigeria's economy with external debt in Nigeria increasing to 27162.63 USD Million in the second quarter of 2019 from 25609.63 USD Million in the first quarter of 2019. External Debt in Nigeria averaged 9914.18 USD Million from 2008 until 2019, reaching an all-time high of 27162.63 USD Million in the second quarter of 2019 and a record low of 3627.50 USD Million in the first quarter of 2009 (CBN, 2019).

It is against this backdrop that this study investigates the Impact of public debt on economic growth in Nigeria using external debt service payment, internal debt and domestic debt as external control variables.

### **Objective of the Study**

The broad objective of this paper is to examine the impact of Public Debt on Economic Growth in Nigeria. However, the specific objectives sought to:

- i. Examine the impact of External Debt on Economic growth in Nigeria.
- ii. Investigate the impact of domestic debt on Gross Domestic Product in Nigeria.
- iii. Assess the long run relationship among economic growth, external debt and domestic debt in Nigeria.

### **Research Questions**

This paper was guided by the following research questions:

- i. What is the impact of external debt on Economic growth in Nigeria?
- ii. What is the impact of domestic debt on gross domestic product in Nigeria?
- iii. What is the long run relationship among economic growth, external debt and domestic debt?

### **Hypotheses**

The following research hypotheses were set to guide the objectives of this research:

Ho<sub>1</sub>. External Debt has no impact on Economic growth in Nigeria.

Ho<sub>2</sub>. Domestic debt does not have an impact on Economic growth in Nigeria.

Ho<sub>3</sub>. There is no long run relationship among economic growth, external debt and domestic debt.

## **LITERATURE REVIEW**

### **Conceptual Clarifications**

#### **The Concept of Public Debt**

Public debt is the stock of outstanding bonds issued by the government at any time in the past but not yet repaid. Governments issue debt whenever they borrow from the public; the magnitude of outstanding debt equals the cumulative amount of net borrow that the government has done. When government borrows, it gives its creditors securities stating the terms of loan; the principal being borrowed, the interest to be repaid on the principal, and the

schedule for making the interest payments and principal repayment. According to Cecchetti, Mohanty and Zampoli, (2011) public debt is used to mean total gross debt and is often referred to as “total debt liabilities”. It is defined as a financial claim that requires payment of interest and or principal by the debtors to the creditor at a date or Dates in the future.

Lopes and Ferreira (2014) posit that public debt arises from the inadequacy of tax revenue meet projected expenses. In other words, when governments embark on budget deficits, public debt comes in handy as one of the instruments used to cover those budget deficits. They go further to provide an understanding of public debt as a set of state obligations to third parties; and falls into either one of two categories namely domestic debt when the debt is issued on the domestic market and external debt when it is issued on the foreign market, regardless of the currency and the nationality of the creditors.

### **Overview of Nigeria’s Public Debt**

Nigeria’s indebtedness dates back to pre-independence era. The debts incurred before 1978 were relatively small and mainly long-term loans from multilateral and official sources such as the World Bank and Nigeria’s major trading partners. The loans were majorly obtained on soft terms and therefore did not constitute a burden to the economy. However, due to the fall in oil prices and oil receipts, the country in 1977/78 raised the first jumbo loan to the tune of US\$1.0 billion from the international capital market World Bank (2010). The loan was used to finance various medium to long-term infrastructural projects.

Domestic debt management in Nigeria had hitherto been carried out by the CBN through the issuance of government instruments, such as the Nigerian Treasury Bills (NTBs); Nigerian Treasury Certificates; Federal Government Development Stocks; and Treasury Bonds. The debt management strategy adopted at that time led to inefficiencies resulting in fundamental challenges. In consideration of these numerous difficulties, the government established an autonomous debt management office in order to achieve efficient debt management practices. The Debt Management Office (DMO) was thus established on October 4, 2000 to centrally co-ordinate the management of Nigeria’s debt for all the tiers of government. While the state governments’ external borrowing is guaranteed by the Federal Government (FG), their domestic borrowings required analysis and confirmation by the FG based on clear criteria and guidelines that the states can repay based on their monthly allocations from the Federation Account Allocation Committee (FAAC) and internally generated revenue (IGR). The past couple of decades have witnessed rising concern on the increase in Nigeria’s public debt. The first most significant rise in Nigeria’s public debt occurred in 1987 when the total debt rose by 96.9 per cent to N137.58 billion; from then, the rise in Nigeria’s public debt continued unabated such that as at 2004, total public debt stood at N6, 188.03 million (DMO, 2019).

In 1986, total debt which was hitherto driven largely by the domestic debt witnessed a reversal and was being driven by the external debt. Thus, the dominance of the external debt as well as the steady rise in total debt remained till 2005 when the country was granted debt pardon by the Paris Club. The debt forgiveness saw Nigeria’s total debt and external debt plummeting by 59.0 per cent and 90.8 per cent, respectively between 2004 and 2006 to N2, 533.47 billion and N451.5 billion. Incidentally, as external debt shrunk, domestic debt continued to grow

unabated such that by 2011, total debt which was being driven by the domestic debt had exceeded the 2004 level and stood at N6, 519.65 billion (DMO, 2019).

Since then, issues of debt have continually stared Nigeria in the face like Death as rightly noted by the deputy secretary-general of the United Nations (UN) Amina Mohammed, who described the state of Nigeria's debt profile as worrying. She was quoted as saying "We are now back again, in my country, the level of debt is worrying, but it is happening all over, for Africa, if that is the way we want to go, we need to sit down and have a better conversation about all the asks of a growing economy; that needs to be inclusive," The deputy secretary said this while speaking at the International Monetary Fund (IMF) and the UN Working Together Conversation with the former IMF Chief, Christine and Ojekunle (2019). Nigeria recorded a government debt equivalent to 17.50 percent of the country's Gross Domestic Product in 2018. Government Debt to GDP in Nigeria averaged 32.40 percent from 1990 until 2018, reaching an all-time high of 75 percent in 1991 and a record low of 7.30 percent in 2008. The Debt Management Office (DMO) released the latest debt statistics on Tuesday, October 15<sup>th</sup> 2019 which showed that federal government's external borrowing climbed 32.38% to \$27.16 billion, while States including FCT grew by 5.10% to \$4.27 billion as at the end of June 2019 (DMO, 2019).

## **Theoretical Framework**

### **The Neoclassical Debt Theory**

The Neoclassical Debt theory emerged around the 1900 to compete with the earlier theories of public debt. The main advocates of this theory include; William Stanley Jevons, Carl Menger, and Leon Walras. According to the Neo-classical growth theory, debt has a direct effect on economic growth. This is because the amount borrowed, if used optimally, is anticipated to increase investment. As long as countries use the borrowed funds for productive investment and do not suffer from macroeconomic instability, policies that distort economic incentives or sizable adverse shocks, growth should increase and allow for timely debt repayment. On the other hand, the indirect effect of debts is its effect on investment. The transmission mechanism through which debts affect growth is its reduction on the resources available for investment by debt servicing. Also, public debt can act as an implicit tax on the resources generated by a country and create a burden on future generations which come in the form of a reduced flow of income from a lower stock of private capital. This in turn, may lead to an increase in long-term interest rates, a crowding out of private investments necessary for productivity growth, and a reduction in capital accumulation. As regards State functions the basic ideology of the neo-classical was that the economic system functions in response to the instructions of the market ultimately the consumer. If this response is inadequate or imperfect, then the state should amend or supplement the response in the better interests of the community at large. The State's role was essentially supplementary and regulatory. Neo-classical had a strong adverse attitude towards tariffs, price supports, and governmental assistances.

This study therefore was underpinned on the Neoclassical Debt Theory which says debt has a direct relationship with economic growth and that as long as countries use the borrowed funds for productive investment and do not suffer from macroeconomic instability, policies that distort economic incentives or sizable adverse shocks, growth should increase and allow

for timely debt repayment. The researchers underpinned this study on the Neoclassical Debt Theory because the theory highlights the transmission mechanism of debt on growth. In addition, the theory captures the burden of unpaid debt on future generations as well as the crowding out effect of debt on Investment.

### **Empirical Studies**

There are enormous empirical and non-empirical studies conducted on the impact of public debt on economic growth, but for the purpose of this paper the following studies were reviewed. Isibor, Babajide, Akinjare, Oladeji, and Osuma (2018) examined the effect of public debt on economic growth in Nigeria from the period 1982 to 2017 using the two-stage least square regression method, in the first equation the result revealed that external debt negatively impacts the economy while internal debt positively impacts the economy. In the second equation, results showed that all the variables have a significant relationship with internal debt.

Iulia (2019) examined the impact of public debt on economic Growth in Romania spanning the period 1995 to 2018. The study made use of the simple Vector Autoregressive model (VAR) to measure the impact of the independent variable on the dependent variable. The results indicate that the economy is discouraged for the first period, starting to grow after. The effects on government expenditures and revenues are positive for two periods, afterwards they decrease.

Ndubuisi (2017) assessed the impact of external debt on Economic Growth in an Emerging Economy using secondary covering the period 1985 to 2015. The study employed the Ordinary Least Square (OLS) method to analyse the data. Results showed that debt service payment has negative and insignificant impact on Nigeria's economic growth while external debt stock has positive and significant effect on Nigeria's growth index. Also the Johansen co-integration test showed a long-run relationship between external debt and growth index (GDP).

Solomon (2016) investigated the impact of external debt on the Nigeria economy. Data was collected from secondary sources while the regression and granger causality methods of analysis were applied. The outcome of the regression analysis showed that external debt and external debt service have negative relationship with GDP. The granger causality test shows that GDP has a unidirectional causal relationship with external debt service which runs from GDP to external debt service.

Odubuasi, Uzoka and Anichebe (2018) investigated the effect of external debt on the Economic Growth of Nigeria. Secondary data were collected for the period 1981 to 2017. The study employed the Augmented Dickey fuller (ADF) to test for the stationarity of the data, Granger Causality was used to obtain the cause-effect relationship among the variables and Error Correction Mechanism (ECM) for the short and long run relationships. The results indicate that external debt stock and government capital expenditure have positive and significant effect on economic growth in Nigeria, whereas external debt service cost is not significant in explaining economic growth.

Ozioma, Odo, Oge and Anoke (2017) assessed the impact of public debt on economic growth in Nigeria. The study adopted the Vector Error Correction Model (VECM) approach of econometric data analysis to analyse the relationship between real gross domestic product (RGDP), foreign debt, domestic debt and domestic private savings spanning 1980-2015. The results of the study indicated that: External debt have significant negative impact on economic growth within the period under study. Domestic debt (DMD) has significant negative relationship with economic growth within the period under consideration. External debt and domestic debt granger cause RGDP in Nigeria with causality running from external debt and domestic debt to RGDP. Econometric techniques of Ordinary Least Square (OLS) multiple regression, Augmented Dickey Fuller (ADF), Johansen Co-integration, Error Correction Method (ECM) were applied. The results show that external debt has a positive and significant effect on economic growth, foreign aid has positive and insignificant effect on economic growth in Nigeria.

## METHODOLOGY

### Research Design

This research measured the impact of public debt on economic growth in Nigeria. Public debt was proxied by External debt (EXDT), External debt service payment (EXDSP) and domestic debt (DMDT) while on the other hand economic growth was proxied by Gross domestic product (GDP). EXDT, EXDSP. Furthermore, DMDT are the independent variables which influence the dependent variable.

### Sources and types of Data

The data for this study was obtained from secondary sources such as the publications of the central bank of Nigeria (CBN), the National bureau of statistics (NBS), World Development Indicators (WDI), published and unpublished journals, news dailies as well as the internet.

### Method of Analysis

This study adopted the Autoregressive Distributed Lag (ARDL) model giving that it is very advantageous when sample size and number of variables are both small. The ARDL model is applicable in two cases; where all variables are stationary at order one or where there is mixed order integration I (0) and I (1) but no variable is integrated at order two.

### Model Specification

The generalized ARDL model is specified as:

$$Y_t = \gamma_{oi} + \sum_{i=1}^p \delta_i Y_{t-i} + \sum_{i=0}^q \beta_i X_{t-i} + \varepsilon_{it} \dots \dots \dots i$$

Where;

$Y_t$  = a vector and the variables in  $X_t$  are allowed to be purely I(0) or I(1) or cointegrated

$\beta$  and  $\delta$  are coefficients;

$\gamma$  = the constant and  $i=1, \dots, K$ ;  $p, q$  are optimal lag orders

$\epsilon$  = the vector of the error term; Equation i is further expressed mathematically as;

$$\Delta \text{LOGGDP}_t = \beta_0 + \beta_1 \text{LOGEXDT}_{t-1} + \beta_2 \text{LOGEXDP}_{t-1} + \beta_3 \text{LOGDMDT}_{t-1} \dots \dots \dots ii$$

Where,

GDP = economic growth at time  $t$ ;

$\beta_0$  = intercept or constant term;

$\beta_1 \beta_2 \beta_3$  = regression coefficients of the explanatory variables EXDT, EXDSP and DMDT respectively.

GDP= Gross Domestic Product; EXDT = External Debt; EXDSP= External Debt Service Payment; DMDT = Domestic debt

The Econometric model is thus specified;

$$\Delta \text{LOGGDP}_t = \beta_0 + \beta_1 \text{LOGEXDT}_{t-1} + \beta_2 \text{LOGEXDSP}_{t-1} + \beta_3 \text{LOGDMDT}_{t-1} + \varepsilon_t \dots \dots \dots \text{iii}$$

And  $\varepsilon_t$  = error term with the assumption of zero mean and constant variance.

### Measurement of Variables

This research measured the impact of public debt on economic growth in Nigeria. Public debt was proxied by External debt (EXDT), External debt service payment (EXDSP) and domestic debt (DMDT) while on the other hand economic growth was proxied by Gross domestic product (GDP). EXDT, EXDSP and DMDT are the independent variables which served to influence the dependent variable GDP.

## RESULTS

**Table 1:** Descriptive Statistics

Variables	GDP	EXDBT	EXDSP	DMDT
Mean	30559.51	2.54E+10	1.71E+09	2874.909
Median	6897.482	2.90E+10	1.43E+09	898.2539
Maximum	144210.5	4.02E+10	8.80E+09	14272.64
Minimum	144.8312	8.94E+09	2.52E+08	11.19260
Std. Dev.	41655.36	8.81E+09	1.71E+09	4124.126
Skewness	1.292604	-0.361412	2.466811	1.523872
Kurtosis	3.429122	1.943234	10.06015	4.050832
Jarque-Bera	11.15960	2.663748	120.5528	16.88862
Probability	0.003773	0.263982	0.000000	0.000215
Sum	1191821.	9.90E+11	6.68E+10	112121.4
Sum Sq. Dev.	6.59E+10	2.95E+21	1.12E+20	6.46E+08
Observations	39	39	39	39

Source: Authors' Computation using Eviews 9.0

**Table 2:** Results of the ADF unit Root Test

Variables	Level of Sig	Cal. Stat.	Tab. Stat	Prob.	Decision
LOGGDP	5%Level	-1.211026	-2.943427	0.6594	Not Integrated
	5% 1 <sup>st</sup> Diff	-3.208559	-2.943427	0.0274	Integrated@ order 1
LOGEXDBT	5%Level	-2.550806	-2.941145	0.1120	Not Integrated
	5% 1 <sup>st</sup> Diff	-5.037046	-2.943427	0.0002	Integrated@ order 1
LOGEXDSP	5%Level	-1.813393	-2.941145	0.3686	Not Integrated
	5% 1 <sup>st</sup> Diff	-5.304524	-2.943427	0.0001	Integrated@ order 1
LOGDMDT	5%Level	-1.998926	-2.941145	0.2861	Not Integrated
	5% 1 <sup>st</sup> Diff	-4.566508	-2.943427	0.0008	Integrated@ order 1

Source: Authors' Computation using Eviews 9.0



**Table 3:** Results of the Philips Perron unit Root Test

Variable	Level of Sig	Cal. Stat.	Tab. Stat	Prob.	Decision
LOGGDP	5%Level	-0.795208	-2.941145	0.8091	Not Integrated
	5% 1 <sup>ST</sup> Diff	-3.122551	-2.943427	0.0335	Integrated@ order 1
LOGEXDBT	5%Level	-2.607835	-2.941145	0.1002	Not Integrated
	5% 1 <sup>ST</sup> Diff	-4.958682	-2.943427	0.0003	Integrated@ order 1
LOGEXDSP	5%Level	-1.875279	-2.941145	0.3400	Not Integrated
	5% 1 <sup>ST</sup> Diff	-7.080625	-2.943427	0.0000	Integrated@ order 1
LOGDMDT	5%Level	-1.860017	-2.941145	0.3469	Not Integrated
	5% 1 <sup>ST</sup> Diff	-4.566508	-2.943427	0.0008	Integrated@ order 1

**Source: Authors' Computation using Eviews 9.0**

**Table 4:** Result of Bounds Test

Test Statistic	Value	K	Test Statistic
F-statistic	10.10700	3	F-statistic
10%	2.72	3.77	10%
5%	3.23	4.35	5%
2.5%	3.69	4.89	2.5%
1%	4.29	5.61	1%

**Source: Extraction from ARDL Bounds Test computed using Eviews 9.0**

**Table 5:** ARDL Cointegrating and Long run TestLOGGDP (Dependent Variable)

Variables	Coefficient	P-Value	Decision @ 5% Significance
LOGEXDBT	1.037611	0.0491	Significant
LOGEXDSP	-1.206452	0.0373	Significant
LOGDMDT	1.325373	0.0000	Significant
C	-48.631228	0.4071	Not Significant

**Source: Authors' Extract from Cointegrating and Long run Result**

**R<sup>2</sup> = 0.734598; Durbin Watson Statistic = 2.202488; F Statistic = 6.919661; Prob = 0.000043**

**Table 6:** Short Run CoefficientsLOGGDP (Dependent Variable)

Variables	Coefficient	P-Value	Decision @ 5% Significance
D(LOGEXDBT)	0.087160	0.1010	Not Significant
D(LOGEXDSP)	0.026910	0.2657	Not Significant
D(LOGEXDSP(-1))	0.003123	0.9149	Not Significant
D(LOGEXDSP(-2))	-0.060937	0.0066	Not Significant
D(LOGDMDT)	0.027711	0.7373	Not Significant
D(LOGDMDT(-1))	-0.021441	0.8587	Not Significant
D(LOGDMDT(-2))	0.173822	0.0686	Not Significant
ECM(-1)	-0.084000	0.0200	Significant

**Source: Authors' Computation using Eviews 9.0**

**Table 7:** Diagnostic Tests Results

Test Type	F-Statistic	Probability	Decision
LM Test	1.693062	0.2034	Accept $h_0$ no serial correlation
Heteroscedasticity Test	2.104435	0.0849	Accept $h_0$ no heteroscedasticity
Normality Test	0.903541	0.636500	accept $h_0$ data is normally distributed
Ramsey Reset Test	-0.021544	0.2686	accept $h_0$ no mis-specification error
Fitted <sup>2</sup> coefficient			

**Source: Authors' Computation using Eviews 9.0**

## DISCUSSION

This paper investigated the impact of public debt on economic growth with particular interest in checking: external debt, domestic debt and external debt service payment and their impact on Nigeria's Economic growth captured by GDP from 1981-2019, using the Auto Regressive Distributed Lag Model. Table 1 shows that within the period covered, i.e 1981-2019, Gross Domestic Product (GDP) External Debt (EXDBT), External Debt Service Payment (EXDSP) and Domestic Debt (DMDT), averaged 30,559.51 billion naira, 2.54 billion naira, 1.71 billion naira and 2,874.909 billion naira respectively. Within the same period, the concerned variables Gross Domestic Product (GDP) External Debt (EXDBT), External Debt Service Payment (EXDSP) and Domestic Debt (DMDT) peaked at 144,210.5, 4.02E+10, 8.80E+09 and 14,272.64 billion naira respectively, while the lowest values for the mentioned variables were, 144.8312, 8.94E+09, 2.52E+08 and 11.19260 billion naira respectively. The JarqueBera test of Normality was 11.15960 with a probability of 0.003773 indicating that the data were normally distributed. The result of the unit root tests using in tables 2 and 3 showed that all the four variables were not stationary at levels but became stationary only after first differencing. The implication of variables becoming stationary after first differencing is that the usage of OLS is no longer encouraged hence the research resorts to the Autoregressive Distributed Lag Model, which is most appropriate for variables that are all integrated at order one or zero and one. The result of the ARDL Bounds test in table 4 shows that there is cointegration among the four variables investigated in this research since the F-statistic value of 10.10700 is greater than the lower bound of 3.23 and the upper bound of 4.35 at the 5% level of significance. The outcome of the result means that the four variables i.e, Gross Domestic Product, External Debt, External Debt Service Payment and Domestic Debts can be linearly combined in the long run or that long run equilibrium is possible after any distortion away from it. It means further, that there is a binding relationship among the variables which calls for an analysis of the relationship.

The analysis of the Long run coefficients above indicates that in the long run, External Debt (EXDBT) has a positive and significant relationship with Economic Growth. Specifically, if External debt increases by 100%, Gross Domestic Product will increase by 103.76% accordingly. The coefficient of External Debt Service Payment (EXDSP) has a negative and significant relationship with Gross Domestic Product at the 5% level of significance. It means further, that if External borrowing increases by 100%, Gross Domestic Product will decrease by 120.64% respectively. Further analysis of the long run equation showed that the coefficient

of Domestic Debt (DMDT) was positively related with Gross Domestic Product (GDP). It explains further, that a 100% increase in Domestic borrowing will increase GDP by 132.53% accordingly. The adjusted  $R^2$  value of 0.734598 means that 73.45% of the changes in the Gross Domestic Product GDP are caused by changes in External Debt (EXDBT), External Debt Service Payment (EXDSP) and Domestic Debt (DMDT) accordingly. It means that our explanatory variables have a very strong explanation to the variations in the value of GDP. The overall significance of the coefficients jointly is satisfactory as the F statistics has a value of 6.919661 with a very low probability of 0.000043. The Durbin Watson statistics which measures the presence of autocorrelation in the model has a value of 2.202488 which is very satisfactory for concluding that there is no auto correlation.

The analysis of Table 6 shows that there is a positive but not significant relationship between the current value of external debt (EXDBT) and Economic growth (GDP) as the p-value is higher than 0.05. Also, it can be seen that the current value and first lag of the External Debt service payment are positively related to gross Domestic product (GDP) although none of the coefficients is significant at this level in the short run, but the second lag of External Debt service payment has a negative and significant relationship with gross Domestic Product. With a coefficient of -0.060937 and a P-value of 0.0066, we can infer that a 100% increase in the second lag of External Debt Service Payment (EXDSP) can reduce Gross Domestic Product by 6.09%. The coefficient of current Domestic Debt (DMDT) is positively related gross Domestic Product even though it is insignificant at the 5% level of significance. The first lag of the Domestic Product (DMDT) is negatively related to economic growth but with an insignificant coefficient at the 5% level of significance. The second lag of domestic debt is also positively related to gross domestic product but the coefficient is insignificant, hence, needs no further analysis.

The coefficient of external debt service payment had a positive and insignificant impact on gross Domestic Product in the current and first lag but in the second lag the coefficient became negative and significant. This means that initially, the burden of debt servicing was not felt on the economy but by the second lag, the time had become long enough for the impact to become felt and had started affecting GDP negatively. The coefficient of Domestic debt had a negative insignificant impact on Economic growth in the first lag but a positive insignificant impact on GDP in the second period.

The paper found that the error correction term was -0.084000 and the coefficient was significant at 5% level. This means that any shock that causes deviation from equilibrium could be corrected at a speed of 84 % in the long run. This can be put better by saying our short run model is capable of returning itself to equilibrium after distortion 84% of the times. The Diagnostics test also showed that the econometric assumptions of no heteroscedasticity and no serial correlation were not violated as both tests accepted the null hypothesis given empirical evidence. The jarquebera test also indicated that the data used were normally distributed as the null hypothesis of no normality in data was rejected at 5% significance level. Thus, the three null hypotheses of the research set were rejected and their alternatives accepted at the 5% level of significance owing to enough empirical evidence. The study concluded that, External debt and Domestic debt has a long run positive and significant

impact on GDP while Debt service payment has a negative and significant long run impact on Economic growth in Nigeria.

The study found prominently that all the times series date used in the study failed the test of stationarity at levels but became stationary after first difference. This finding agrees with the finding of Ndubuisi, (2017) who also found similar variables in his study to be stationary after first difference in Nigeria. The paper also found from the study that in the long run, the coefficient of External Debt (EXDBT) has a positive and significant impact on Economic growth in Nigeria. This finding is same with the findings of Ndubuisi, (2017), Sulaiman and Azeez (2012). The finding however disagreed with that of Omodero, and Alpheaus (2019) who held that borrowings in Nigeria are mostly always misappropriated, leaving only the burden of such debts with consequent negative impacts on economic growth in the long run. In addition, the study found that in the long run, the coefficients of Domestic Debt had a positive and significant impact on Economic growth in Nigeria. Domestic Borrowing makes public expenditure possible. When government spends, the expenditure comes with multiplier effects that transcend all sectors in the economy raising aggregate demand and encouraging economic growth. Earlier studies by, Ibrahim and Khan (2019), Mba, Yuni and Oburota (2013) who found a similar impact of Domestic Debt on Gross Domestic Product in Nigeria. Other studies, like Anyanwu and Erhijakpor (2004) failed to establish that Domestic Debt has a positive impact on Gross Domestic Debt in Nigeria.

The study further found that in the short run, the coefficients of current and lagged External Debt failed to exert any significant impact on economic growth in Nigeria as the coefficients were positive but insignificant. This may be so because investment from public external borrowing takes long to begin to yield positive and significant impacts on Gross domestic product. This concurred with the study conducted by Ohiomu (2020).

## **SUMMARY**

This paper examined the impact of public debt on economic growth in Nigeria is carried out to check the impact of external debt on economic growth, the impact of external debt service payment on economic growth (GDP) and the impact of domestic debt on economic growth in Nigeria from 1981-2019. The study used the Autoregressive Distributed Lag Model and analysed data obtained from the World Development Index and various bulletins of the Central Bank of Nigeria. The study found that external debt and domestic debt both have a positive and significant impact on Economic Growth proxied with GDP in the long run and that external debt service payment has a negative long run impact on Economic growth in Nigeria within the coverage period. There was enough evidence to reject the three null hypotheses set in the chapter one of the study and to accept the alternative hypotheses. Other diagnostic tests also showed that most of the assumptions of ARDL were not violated as the heteroscedasticity, Autocorrelation, serial correlation and the normality tests showed. The study discovered that in the short run, all the coefficients except second lag of external debt service payment were insignificant and had negligible impact on the gross domestic product.

## **CONCLUSION**

The findings from this research led to the conclusion that, public debt components i.e external debt and domestic debts have a positive and significant impact on gross domestic product which is the proxy for Economic Growth in the long run. This by implication means that the more the public borrow externally and internally to finance capital projects, the more the

economy will grow *ceteris paribus*. On the flip, external debt service payment which is a burden on the economy is negatively impactful on gross domestic product, the proxy for economic growth. It means that the servicing of debts and interest payment on same mars economic growth in Nigeria. The study therefore rejects the three null hypotheses, stating that external debt, domestic debt and external debt service payment have significant impact on economic growth at 5% critical level.

## RECOMMENDATIONS

Following the findings of this paper, the following recommendations were made:

- i. External sources of borrowing available to the public should be adequately utilized in growing capital projects in Nigeria that are profitable and capable of repaying debt service and interest that accrue on External Debts without having to shift the burden on other revenue sources. In essence, this is to say that borrowing should only be encouraged for productive and profitable projects in Nigeria as well as determination of GDP- to-Debt ratio before borrowing.
- ii. The government which is the biggest debtor to external creditors should seek debt forgiveness, especially on debts that financed unprofitable ventures that cannot repay the servicing accrued on them as well as interest due. In addition, call for an investigation of debts that have been misappropriated and squandered so that such monies can be refunded to the public coffers.
- iii. Domestic borrowing should be encouraged by the public to avoid the existence of idle unproductive monies outside the control of the financial system. To this end, the researcher recommends the spreading of more credit facilities to mop up higher powered money (money out of control of the financial system) from the economy. In addition, government should from time to time review upwards the issue of bonds to encourage people to lend more for the financing of viable projects with multiplier effects.

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