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The Impact of Public Debt on Economic Growth

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ABSTRACT: This study examined the impact of public debt on economic growth in Nigeria from 1981 to 2021using Auto Regression Distributed Lag (ARDL) model. Specifically, the study investigated the impact of total domestic debt, total external debt, investment and the effect of government expenditure on economic development in Nigeria. Gross Domestic Product (GDP) was used as a proxy for economic growth while Total domestic debt (TDD), Total external debt (TXD), Inflation rate (IFNR), Government expenditure (GEX), investment (INV) and gross domestic savings (GDS) were used as the explanatory variables. The result revealed that all variables (TDD), (TXD), (INFR), (GEX), (INV) and (GDS) had an insignificant impact on economic growth in the long- run while GEX has a significant impact on economic growth in the long- run. However, all variable were found to be insignificantly related to economic growth in the long- run. TDD, government expenditure and inflation rate were found to be positive and insignificantly related to economic growth in the long- run implying that their increase will improve economic growth in Nigeria in the long- run. On the other hand total external debt, investment and gross domestic savings exhibited a negative and insignificant effect on economic growth. This means that their increase will decrease economic growth in Nigeria in the long- run.The study concluded that public debt indices has an insignificant impact on economic growth in Nigeria in the long run. It is thereforerecommended that policy makers should integrate appropriate measures towards ensuring suitable management of domestic debts; government should ensure that contracted national debts are directed towards encouraging investment in the country and through necessary monitoring committees should ensure that national debts are directed toward the provision of basic amenities andservices required for the development of communities and societies of the nation.

KEYWORDS: Gross Domestic Product, Total External Debt, Total Domestic Debt, Government Expenditure, Investment, Gross Domestic saving, Inflation Rate

I. INTRODUCTION

The justification for government borrowing has its foundation in the neoclassical growth models, which prescribes the need for capital scarce countries to borrow to increase their capital accumulation and steady-state level of output per capita (Madow, Nimonka, Brigitte & Camarero, 2021). The occurrence of global economic crises has provided further impetus for countries (especially the developing ones) to borrow as they are often confronted with the need for increased expenditure levels and declining capital inflows (Ogbonna, Ibenta, Chris-Ejiogu, & Atsanan 2019). Conventional view suggests that public debt has a positive effect on economic growth in the short-run by stimulating aggregate demand and output. However, theoretical literature continues to point to a negative debt-growth relation in the long run by crowding out private investment. Public debt can crowd-out private investment and threaten economic growth through higher long-term interest rates, higher inflation, and higher future distortionary taxation (Mhlaba, Phiri & Nsiah, 2019). The extensive use of domestic borrowing can have severe repercussions on the economy. Domestic debt service can consume a significant part of government revenues, especially given that domestic interest rates are higher than foreign ones. The interest cost of domestic borrowing can rise quickly along with increases in the outstanding stock of debt, especially in shallow financial markets. In the long-run, higher interest rate would discourage investment and thus crowd out private investment. The lower investment eventually leads to a lower steady-state capital stock and a lower level of output. Therefore, the overall long-term impact of debt would be smaller total output and

eventually lower consumption and reduced economic welfare.

This is also referred to as the burden of public debt, as each generation burdens the next, by leaving behind a smaller aggregate stock of capital (Àkos & Istvàn, 2019).

This foreign debt has resulted in a diversion of annual budgetary resources away from investment in the economy and towards debt repayment, which has dampened domestic savings and slowed the growth rate. Over the last decade, Nigeria's economy has been on a downward trajectory, culminating in two years of contraction (a recession) with a negative growth rate of -1.62% in 2016 (World Bank, 2019).

It is generally accepted that debt-ridden nations are more likely to use their money to pay off their debts rather than invest in economically vital infrastructure (Amakom, 2003; & Paul, 2017). While some debt relief was provided for Nigeria in 2005 and 2006, the country's fundamental infrastructure is still in disrepair and around 65 percent of its population lives in poverty, calling into question the need of foreign debt and its consequent benefit for the expansion of Nigeria's economy. Nigeria is currently ranked among Sub-Saharan Africa heavily indebted countries with a stunted GDP growth rate, retarded export growth rate, a fast dwindling income per capita and an increasing poverty level. Most of these countries, Nigeria inclusive, have been trapped by hasty and distress borrowing which they are often unable to service. Worse still, they need to borrow more because of the deteriorating world prices of their primary exports (Ogunjimi, 2019). Nigeria's 2005 debt relief provided by the Paris Club of creditors motivated largely by the need to free-up resources for investment and faster economic growth led to a significant decline in the country's debt burden in 2006. Unfortunately, 14 years after, the country is back in bigger debt crisis. Successive governments have been accumulating debt at an alarming rate while debt servicing cost has again increased astronomically to become a sour point in Nigeria's budgetary process in the last decade. The economy is, therefore, over-burdened with massive government debt and debt service costs that consume more than half of government scarce revenue, narrowing down the fiscal space for government to invest in critical infrastructure that supports private investment and sustain growth.

Rising global interest rates and the increasing debt burden of Nigeria is pointing toward another debt crisis which may not be far ahead. It is evident that unsustainable public debt is discouraging investment and lowering growth in Nigeria, thereby reducing the country's global competitiveness, and increasing financial market susceptibility to international shocks (Ogbonna *et al* 2019). In light of the preceding, this study examines the impact of public debt on economic growth in Nigeria by investigating the impact of total domestic and external debts as well as effect of investment and government expenditure on economic development in Nigeria using a time series annual data covering period between 1981 and 2022.

II. LITERATURE REVIEW

Theoretical Review

There are several theories that explains the relationship between debts and economic growth. Dual gap theory propounded by Harrod in 1939 and Domar (1946) supported external borrowings to finance capital investment. According to this theory, domestic saving is not sufficient to finance investment for economic development so in order to fill the gap, external sources of capital for investment are soughts to complement the deficit(Tabengwa, 2014). The theory became relevant because developing economies are usually faced with the gap of savings and investments on one hand and exports and imports on the other hand which they must fill. The crowding out theory propounded by Bruno Freyin 1997 is another relevant theory. The theory argues that rising public sector spending drives down or even eliminates private sector spendingwhich is the view of neo classical school of thought. Debt overhang theory propounded by Myer in 1977 explains the condition where an entity debt burden is so large that it cannot take on additional debt to finance future projects. The theory was established on the principle that if the level of debt exceeds the country's capacity to refund thereby making funding of new investment impossible;the expected debt service is then anticipated to be an increasing function of the country's economic growth level (Panizza & Presbitero, 2012).David Ricardo in 1819 postulated theory of public debt. Ricardo maintained that the expected and unexpected expenditures of government basically include payments approved to maintain economic balance despite the ineffectiveness of most labourers in the economy. The theory focused on the increasing burden stemming from the society, which is a product of unproductive public expenditures (Precious, 2015) suggesting that financing public expenditure could be productively attained by sourcing funds from sectors and communities with excess economic resources so as to reduce inequality.

Neo-Classical Growth Theory whichappropriately underpins this study dated back to 1956 and propoundedby Robert Solow who postulated that the key variable in growth is labour productivity (i.e output per worker). For this model, the role of technological change became imperative, and even more important than capital accumulation. The model assumed that output (Y) is produced by employing technology, labour, and physical capital. The model is expressed as Y= f (A,K,L); where Y is the aggregate output, A is the number based on the current state of technology, K is the quantitative measure of the size of the stock of manufactured capital, and L the quantity of labour employed during that period of time. K, A, and L are the only factors of production explicitly included in the model. All factors are required for the production of output, with the exponents in the equation indicating their relative contributions. Increase in output growth results from increases in the factors of production and productivity that increases as a result of technological change, in addition to changes in organization and practices (Precious, 2015).

Emperical Review

In a comparative study carried out by Teoh, Muhammad, Wan, Rosita, Josephine, Abang, Mohd, Hisyam and Farah (2021) where they examined the nexus between external debt and economic growth in low and high governance groups of twenty-three countries comprising Pakistan, Philippines, Mexico, Indonesia, Nigeria, Thailand, Ukraine, Uganda, Malawi, Ghana, Zambia, and Colombia which make up the low governance countries. While the sample for high-governance countries includes Malaysia, Portugal, Spain, Greece, Germany, Canada, Luxembourg, Poland, the United Kingdom, the United States and Switzerland covering the period between 2011 and 2014. The result of their study revealed the significant effect of high scores in governance indicators such as voice and accountability (samples from low governance countries) and regulatory quality (samples from high governance countries). Prescribing the right policy is crucial to avoid the negative impact of the wrong policy prescription on economic growth.Employingdynamic panel data analysis based on the Generalized Method of Moments (GMM) the results are dissected into two groups, for low governance and high governance countries respectively and suggested that good debt management and feasible policy prescriptions are the keys to controlling external debt.

In another study, Chilombo and Jiang (2020) explored the relationship between external debt and economic growth in nine Southern African countries from 2000 to 2018 using a panel autoregressive distributed lag (ARDL) model as estimation technique. Their result revealed that short term external debt negatively affects economic growth over the long haul just as in the short run while long term external debt shows a negative connection with economic growth for the short run and a negative significant connection among debt and economic growth over the long haul. This suggest that external funds gained are not being utilized for economic activities such as investment, capital formulation and technology and concluded that the requirement for policymakers in Southern Africa to not exclusively depend on external debt as a means to stimulate economic growth but should utilize aggressive techniques to improve and advance their economies.

Biyase (2019) investigated the relationship between government debt and economic growth in a sample of 10 Southern African Development Community (SADC) members from 1995 to 2017. The study employed the fixed effects two-stage least squares (FE-2SLS) as estimation technique, the result revealed that variable of interest (government debt) has maintained its negative sign. However, the results are insignificant, indicating that government debt in less indebted countries are not detrimental to economic growth and concluded that government debt, at moderate level, has no impact on growth while after a certain threshold the effects become growth reducing. Inflation, military expenditure and trade openness were also found to have a negative significant relationship with government debt in SADC. However, population growth and investment were found to have a significant positive relationship with government debt.

Isibor, Babajide and Akinjare (2018) examined the effect of public debt on economic growth in Nigeria. The study employed the two-stage least square regression as estimation technique, the result revealed that external negatively impacts the economy while internal debt positively does the same. For the second equation, GDP, total savings deposits in the Nigerian deposit money banks and capital expenditure were regressed against internal debt, the result showed that all the variables have significant relationship with internal debt and recommended that Corruption of borrowed funds should be tackled at all cost and also, government should minimize external borrowing, since, it impacts the economy negatively.

Obisesan, Akosile and Ogunsanwo (2019) examined the effect of external debt on economic growth in Nigeria from 1981 to 2017. The study

employed ordinary least square method as estimation technique andthe result revealed that exchange rate has positive effect on economic growth which implies that exchange rate has a powerful influence on economic growth by 44.6%. Changes in external debt and external debt service payment have negative effects on economic growth in the study period which implied that an attempt to increase external debt and its service payment in the country will simultaneously result to 21.3% and 5.33% changes respectively. The study concluded that that external debt have significant negative effect on economic growth in Nigeria. It recommended among others that debt management office should set mechanism in motion to ensure that loans were utilized for purposes for which they were acquired and channel towards productive uses.Sourcingexternal debts should be considered as a means of long run development and not just for solving short run problems.Debtmanagement office should also set maximum limit of loans state and federal governments could be allowed to acquire based on certain stipulated criteria and Nigeria should use her accumulated external foreign reserves instead of incurring more external debts, as this will ensure increase in real economic growth and reduce capital flights through repayments of debts to external sources.

Eze, Nweke and Atuma (2019) analysed the impact of public debts on economic growth in Nigeria from 1981 to 2017. The study employed the ARDL model and Chow Breakpoint test as estimation techniques, the result revealed that external debt has a negative and significant impact on GDP while domestic debt has a negative and insignificant effect on GDP, government expenditure has a positive and significant impact on GDP, while national savings and consumer price index have a positive and insignificant effect on LGDP. Also revealed that external debt has a negative and significant impact on LPUINV, while LDD has a positive and insignificant effect on LPUINV. More so, the results indicated no evidence of significant structural break between the variables and recommended that the government should discontinue the use of external debt in financing budget deficit in the economy but can intensify efforts to stimulating revenue internally through efficient investments and economic diversification. Also, the government should not utilize domestic debt in financing fiscal deficit, rather there is a dire need to enhance revenue domestically or reduce its current expenditures in order to effectively finance capital investment projects in Nigeria.

Paul (2019) investigated the dynamic relationship between external debt and economic growth of Nigeria from 1985 to 2017 using Johansen cointegration, vector error correction model (VECM) and granger causality test as estimation technique, the result revealed that debt service payment has negative and insignificant impact on Nigeria's economic growth while external debt stock has negative and significant effect on economic growth; no-directional causality between external debt and GDP and recommended that policy-makers should reformulate the external debt management strategy to minimize sovereign risk through diversification of the external borrowing.

Ajayi and Edewusi (2020) study examined the effect of public debt on economic growth of Nigeria from 1982 to 2018. The study employed descriptive statistics, unit root test, Johansen co-integration test and vector errorcorrection model. The result revealed that external debt exerts a negative long run and short run effect on economic growth of Nigeria and domestic debt was ascertained to exert positive long run and short run effect on economic growth of Nigeria and suggested that policy makers should integrate appropriate measures towards ensuring suitable management of domestic debts; government should ensure that contracted national debts are directed towards encouraging investment in the country and government through necessary monitoring committees should ensure that national debts are directed toward the provision of basic amenities and services required for the development of communities and societies of the nation.

Muhammad and Abdullahi (2020) investigated the impact of external debt servicing on economic growth in Nigeria. The study employed autoregressive distribution lag model as estimation technique, the result revealed that in the long-run, external debt servicing will negatively affect economic growth. That is an increase in external debt servicing lead to a decline in economic growth and suggested that debt service

requirement should not be allowed to increase above the debt stock and, the contracted loan should be devoted to infrastructure development through efficient and judicious utilization.

Mokuolu (2021) investigated the nexus between external debt and economic growth in Nigeria drawing inference from 1986 to 2014. The study employ Error Correction Mechanism (ECM) to analyze time series data culled on economic growth variable and proxies for external debt. The empirical findings revealedthat there is a long run

positive relationship between the external debt and economic growth in Nigeria and further suggested that of the three external debt variables examined, both External Reserves (ERS) and Interest Rate were found to exert a positive relationship with economic growth measured by GDP, whereas only the Debt Service Payment (DSP) exert a negative relationship with economic growth. Furthermore, all the explanatory variables are significant in explaining economic growth in the long run. The coefficient of multiple determination (R Squared) as obtained from the parsimonious model is 47% which simply implies that the variables of external debt (DSP, ERS and INT) all put together accounted for 47% variation in GDP while the other 53% is due to the presence of disturbance mean in the model. Findings in the study revealed that Nigeria should implement policies that could increase external reserve treasures by increasing export. This will in turn relief debt profile of the country. For the benefits of external debt to be enjoyed, the study recommend that government should ensure economic and political stability and reduce the debt burden to the minimal to enhance the effect on economic growth.

Eke and Akujuobi (2021) investigated the effect of public debt on economic growth in Nigeria from 1981 to 2018 employinga co-integration approach.Theresult of the study revealed a significant short-run relationship existed between Nigeria's public debt and economic growth. It also revealed that both the domestic debt and the external debt variables were statistically significant, only the latter failed the a priori expectation test, thus, exerts a negative contribution to economic growth in Nigeria, and then concluded that most of the external borrowings in Nigeria end up being misappropriated. The study recommended that there should be proper ways of monitoring public borrowings with special emphasis on all external debts contracted with a view to ensuring that misappropriation is drastically reduced, if not eliminated.

Sam (2021) investigated public debt and economic growth in developing economy in Ghana using a dynamic multivariate autoregressive-distributed lag (ARDL)-based Granger-causality model as estimated technique, the result revealed that public debt has no causal relationship with GDP in the short-run but there is unidirectional Granger causality running from public debt to GDP in the long run. Also, investment spending has a negative bi-directional causal relationship with GDP in the short-run but they have a positive bi-directional causal relationship in the long run. Conversely, no short-run causal relationship exists between government consumption expenditure and GDP but long-run Granger causality runs from government consumption expenditure to GDP and concluded that public debt has a positive impact on the inflation rate in the short run. Therefore, recommended that government(s) must ensure high fiscal discipline to serve as a precursor for the effective and efficient use of recent borrowing, that is, the loans should be used for highly prioritized projects (preferably investment spending) that are well evaluated and self-sustained to add positively to the GDP.

Eze and Ukwueni (2023) examined impact of public debt accumulation on economic growth in Nigeria, the study employed Autoregressive distributed lag (ARDL) model as estimation technique, the result revealed that the external debt (LEXD) and domestic debt (LDD) have a negative impact on LGDP. However, while external debt reveals a significant effect, domestic debt (LDD) has an insignificant impact on LGDP and recommended that government should discontinue the use of external debt to finance budget deficit in the economy, but look inward through aggressive internal revenue generation as well as embrace economic diversification policies, coupled with a drastic cut down on cost of governance in Nigeria.

III. METHODOLOGY

To capture the impact of public debt on economic growth in Nigeria, the study is carried out using a time series annual data of Nigeria from 1986 to 2022 for which data is available sourced from various issues of the Central Bank of Nigeria Statistical Bulletin and analyzed by employing Auto-Regressive Distributed Lag (ARDL) bounds testing. Thestudy adopt an empirical model that is built based on the modification of the model used in the study carried out by Eke and Akujuobi (2021) and theoretically underpins the neoclassical growth theory as the theoretical bedrock underlying the study. The model is expressed mathematically in its original form as:

GDP = f (TDD, TXD, INFL)

……
i

GDP = f (EXD, DD, GEX, NS, CPI)

……...ii

Where,

GDP = Gross domestic product
TDD = Total domestic debt
TXD = Total external debt
INFL = Inflation rate
EXD = External debt

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DD = Domestic debt
GEX = Government expenditure
NS = National savings
CPI = Consumer price index

However, this study makes modifications to the model by capturing the effect of public debt on economic growth in Nigeria. This is achieved by adopting government expenditure and gross domestic savings. While gross domestic product was used as a measure of economic growth. Hence, the modified model is stated below as:

GDP = f(TDD, TXD, INFL, GEX,GDS) ……iii

This model can, for simplicity, be stated in the econometric form of equation as depicted below:

GDP = $\beta_0 + \beta_1 TDD + \beta_2 TXD + \beta_3 INFL + \beta_4 GEX + \beta_5 GDS + \mu$……iv

Where;

F = functional notation
GDP = gross domestic product
TDD = total domestic debt
TXD = total external debt
INFL = inflation rate
GEX = government expenditure
GDS = gross domestic savings
μ = Error term
β_0 = Constant Parameter
β_1- β_3 = Coefficients of Regression

The study further apply the process of log-linearisation to bring the data to a common base andthe logarithmic values of all the series was createdthereby, the model becomes:

$$\log GDP = \beta_0 + \beta_1 \log TDD + \beta_2 \log TXD + \beta_3 \log INFL + \beta_4 \log GEX + \beta_5 \log GDS + \mu \quad \text{.....v}$$

Where,
Log = Natural Logarithm

From the equation above, the model will further be stated in time-series properties as depicted below:

$$\log GDP_t = \beta_0 + \beta_1 \log TDD_t + \beta_2 \log TXD_t + \beta_3 \log INFL_t + \beta_4 \log GEX_t + \beta_5 \log GDS_t + \mu \quad \text{.....vi}$$

Where,
t = Time Series

Again, by formulating the Error Correction Model (ECM) for the Auto Regressive Distributed Lag (ARDL) Model as obtained from equation (vi), the model becomes:

$$\Delta \operatorname{Log}(GDP) = \mathrm{B0} + \sum_{i=0}^{n} B1 \operatorname{Log} \mathrm{TDD}_{t-1} + \delta + \sum_{i=0}^{n} B2 \operatorname{Log}(TXD)_{t-1} + \delta + \sum_{i=0}^{n} B3 \operatorname{Log}(\mathrm{INFL})_{t-1} + \delta + \sum_{i=0}^{n} B4 \operatorname{Log} GEX_{t-1} + \delta + \sum_{i=0}^{n} B5 \operatorname{Log}(GDS)_{t-1} + \delta + \sum_{i=0}^{n} (\mathrm{ECM})_{t-1} + \delta + \sum \mathrm{t} \quad \text{..... (vii)}$$

where;

Δ = Change
t-1 = Lagged value of each variables
$\sum t$ = White noise/residual
μ = Error Correction term

IV. RESULTS AND FINDINGS

The study examined the impact of public debt on economic growth in Nigeriafrom 1981 to 2021 with the use of Auto Regressive Distributed Lag (ARDL) model to assess the long run impact in the presence of mixed integration order. In line with the research model used for the study, Gross Domestic Product (GDP) was used as a proxy for economic growth which is dependent variable while Total domestic debt, Total external debt, Inflation rate, Government expenditure, investment and gross domestic savings were used as the explanatory variables. However, it is worthy of note to state that the interpretation of results will begin from the Unit Root Test rather than the classical Ordinary Least Square (OLS) result as a result of the ARDL technique used because it also embraces the short run result which the OLS technique aim to present. In light of this, this part of the study is exclusively reserved for the analysis and interpretation of the research findings.

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Table 1: Result of Philips-Perron Unit Root Test at Level

Variable	PP statistics value	Mackinnon critical value	H_0	H_I	Remark
LNGDP	-1.045984	-2.936942	Accept	Reject	Non-Stationary
LNTDD	-2.061963	-2.938987	Accept	Reject	Non-Stationary
LNTXD	-2.499878	-2.936942	Accept	Reject	Non-Stationary
LNINFR	-3.612736	-2.936942	Reject	Accept	Stationary
LNGEX	-1.212668	-2.936942	Accept	Reject	Non-Stationary
LNINV	0.297128	-2.936942	Accept	Reject	Non-Stationary
LNGDS	-0.707735	-2.936942	Accept	Reject	Non-Stationary

Source: *Eviews 9* (2023)

The table above revealed that only INFR was found to be stationary before it first differencing as their PP statistics value was higher than Mackinnon critical value at 5%. However, since other variables were found to be non-stationary at level, there is need to proceed to first differencing to achieve Stationarity of the variables. Hence, the result of the first difference is also summarized below:

Table 2: Result of PP Unit Root Test at First Difference

Variable	Adf Statistical value	Mackinnon critical value	H_0	H_1	Remark
D(LNGDP)	-3.385055	-2.938987	Reject	Accept	Stationary
D(LNTDD)	-4.699981	-2.938987	Reject	Accept	Stationary
D(LNTXD)	-4.863582	-2.938987	Reject	Accept	Stationary
D(LNGEX)	-7.510562	-2.938987	Reject	Accept	Stationary
D(LNINV)	-3.893039	-2.938987	Reject	Accept	Stationary
D(LNGDS)	-4.275634	-2.938987	Reject	Accept	Stationary

Source: - *Eviews 9* (2023)

From the table above, it is revealed that all other variables (LNGDP, LNTDD, LNTXD, LNGEX, LNINV and LNGDS) were found to be stationary at first difference as a result of the PP statistics which is greater than Mackinnon critical value at 5% in absolute terms.

Table 3:- Summary of Order of Integration Variable Order of Integration

Variable	Order of Integration
LNGDP	I(1)
LNTDD	I(1)
LNTXD	I(1)
LNINFR	I(0)
LNGEX	I(1)
LNINV	I(1)
LNGDS	I(1)

Source: - *Eviews 9* (2023)

Hence, considering the mixed order of integration, it is necessary to proceed to the Auto Regressive Distribution Lag (ARDL) model to examine the long run relationship among the variables rather than the co-integration test which should only be used when variables are co-integrated in same order.

4.4 The Philips-Perron Test Equations

The result of the PP test equation carried out on each variable is presented in the table 4.4 below alongside their respective level of stationarity and lagged period with the corresponding co-efficient of multiple determination.

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Table 4.4: - Result of PP Test Equation on Variables at their Stationary point

Variable	Coefficient	Std. Error	T-Statistics	Prob.	R^2
D(LNGDP(-1))	-0.478270	0.138248	-3.459522	0.0014	0.244409
C	0.087622	0.029415	2.978794	0.0051	
D(LNTDD(-1))	-0.740083	0.157465	-4.699981	0.0000	0.373835
C	0.135067	0.036852	3.665157	0.0008	
D(LNTXD(-1))	-0.702834	0.144510	-4.863582	0.0000	0.389987
C	0.126607	0.076702	1.650638	0.1073	
LNINFR(-1)	-0.530471	0.142690	-3.717651	0.0006	0.266706
C	1.417387	0.394603	3.591933	0.0009	
D(LNGEX(-1))	-1.224261	0.159277	-7.686384	0.0000	0.614906
C	0.216785	0.042581	5.091067	0.0000	
LNINV	-0.600839	0.152970	-3.927823	0.0004	0.294267
C	0.097542	0.032188	3.030402	0.0044	
D(LNGDS(-1))	-0.651715	0.153760	-4.238510	0.0001	0.326844
C	0.136113	0.037230	3.656014	0.0008	

Source:- *E-views 9*(2023)

4.5 ARDL Bound Test Approach to Co-integration

Theco-integration result is presented in table below and summarized in table 4.5 below:The study adopted the Schwarz Information Criterion (SIC) for the selection of the ARDL (1, 0, 1, 0, 0, 1, 0) model.

Table 4.5: Co-Integration Result

F-Statistics	Lower Bound @5%	Upper Bound @5%
3.850499	2.45	3.61

Source: *Eviews 9*(2023)

Consideringthe results specified above, it can be deduced that there exist a stable long run equilibrium relationship among variables as the F-Statistics was found to be greater than upper bound at 5% critical value. Hence, the long run relationship is presented below

4.6 Long-Run Results

The long run result of the model obtained through the use of the ARDL technique as presented in table is summarized below in table 4.6:

Table 4.6: Long Run Result of the Model

Variable	Coefficient	Std. Error	T-Statistics	Prob.
LNTDD	0.437182	0.459096	0.952269	0.3486
LNTXD	-0.082507	0.123446	-0.668370	0.5090
LNINFR	0.321138	0.289545	1.109114	0.2762
LNGEX	1.065814	0.605920	1.759001	0.0888
LNINV	-0.360954	0.613022	-0.588811	0.5604
LNGDS	-0.113286	0.382936	-0.295835	0.7694
C	3.178672	1.419564	2.239189	0.0327

Source:*Eviews 9* (2023)

From the table above, the long run equation specifying the long run relationship among the variables can be presented below as:

$GDP = 3.178672 + 0.437182_{TDD} - 0.082507_{TXD} + 0.321138_{INFR} + 1.065814_{GEX} - 0.360954_{INV} - 0.113286_{GDS} + \mu$

(1.419564) (0.459096) (0.123446) (0.289545) (0.605920) (0.613022) (0.382936)

Note: The standard error statistics are those stated in parenthesis

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From the long run equation above, the coefficient of the constant parameter was found to be 3.178672 which means that if all variables are held constant in the long run, GDP which is the explained variable will improve by 3.178672 units. Also, total domestic debt (TDD) was found to be positively related to GDP to the tune of 0.437182 which means that a unit increase in total domestic debt will increase GDP by 0.437182 units in the long run thereby confirming the insignificant impact of total domestic debton economic growth in Nigeria.However, total external debt (TXD) was found to be negatively related to GDP to the tune of -0.082507 which means that a unit increase in total external debt will reduce GDP by -0.082507 units in the long run thereby also confirming the insignificant impact of total external debt on economic growth in Nigeria. Furthermore, inflation rate (INFR) was found to be positively related to GDP by 0.321138 units which means that a unit increase in inflation rate will increase GDP by 0.321138 units in the long run. Conversely, government expenditure (GEX) was found to be positively related to GDP by 1.065814 units which means that a unit increase in government expenditure will increase to GDP by 1.065814 units in the long run thereby confirming the insignificant impact of government expenditure on economic growth in Nigeria. Again, investment was found to be negatively related to GDP to the tune of -0.360954 which implies that a unit increase in investment will reduce GDP by -0.360954 in the long runmeaning that economic growth is significant in explaining investment in Nigeria. Lastly, gross domestic savings (GDS) was found to be negatively related to GDP by -0.113286 units which means that a unit increase in gross domestic savings will increase to GDP by -0.113286 units in the long run. Also, the value of the Error Correction Model (ECM) was negatively signed which justifies its existence and valued at -0.153128 which shows that the speed of adjustment of any past deviation to long run equilibrium in the present period. It therefore indicates that that the value of the GDP adjust sharply to changes in the explanatory variables that it was in the model.

4.7 Test for Statistical Significance of Parameters in the Long Run (Probability Test)

Table 4.7: Probability Test Long Run
Dependent Variable: GDP

Variable	Coefficient	Prob value	Decision Rule
LNTDD	0.437182	0.3486	Insgnificant
LNTXD	-0.082507	0.5090	Insignificant
LNINFR	0.321138	0.2762	Insignificant
LNGEX	1.065814	0.0888	Insignificant
LNINV	-0.360954	0.5604	Insignificant
LNGDS	-0.113286	0.7694	Insignificant

Source: *Eviews 9* (2023)

The result from the table above revealed that all variables (total domestic debt, total external debt, inflation rate, government expenditure, investment and gross domestic savings) has aninsignificant impact on GDP in the long run.

4.8 Diagnostic and Stability Test

Diagnostic and stability tests are the tests carried out to test for the robustness, stability and reliability of the overall model through various techniques. The diagnostic test encompasses the serial correlation or autocorrelation test, normality test, heteroskedaticity test.

Table 4.8.1 Result of the Breusch-Godfrey Serial Correlation LM Test

F-Statistics	2.812420	Prob. F(2,28)	0.0771
Obs*R-squared	6.691291	Prob. Chi-Square(2)	0.0352

Source: *Eviews 9* (2023)

From the 4.8.1 above, the result shows that the value of the F-Statistics is 2.812420 while the P-Value is more than 5% at 0.0771. Hence, the model can be relied upon as a basis for making inferences and valid policy recommendations.

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Table 4.8.2 Breusch-Pagan-Godfrey Heteroskedasticity Test Result

F-statistic	1.679985	Prob. F(9, 30)	0.1379
Obs*R-squared	13.40418	Prob. Chi-Square(9)	0.1452
Scaled explained SS	6.861322	Prob. Chi-Square(9)	0.6516

Source: *Eviews 9* (2023)

From the table above, the white heteroskedasticity test has an F-Statistics of 1.679985 and Probability Value is more than 5% at 0.1379 Hence, the null hypothesis of no heteroskedasticity is accepted and it can be deduced that the model has no heteroskedasticity problem.

Table 4.8.3 Normality Test Result

Jarque-Bera	1.597043	Prob. Value	0.449994
Skewness	0.481101		

Source:*Eviews 9*(2023)

From table 4.8.3 above, the normality test revealed that the Jarque Bera statistics has a value of 1.597043 while its probability value is 0.449994; hence, there is normal distribution in the modeland considering the value of the skewness which falls within the range of-1 to +1, it can be deduced that the data is normally distributed.

Discussion, Conclusion and Recommendation

The objective of this study is to examine the impact of public debt on economic growth in Nigeria. The Auto Regressive Distributed Lag (ARDL) model result revealed that all variables except total external debt, investment and gross domestic savings were found to be positively related to economic growth in the long run. Meanwhile, all variables were found to conform to the a-priori expectation. In consonance with the a-priori expectation, total domestic debt was found to be positive and insignificantly related to economic growth in the long run. This implies that increase in the total domestic debt will improve economic growth which is line with the study of Isibor, Babajide and Akinjare (2018), Eze, Nweke and Atuma (2019), and Ajayi and Edewusi (2020).

Also, as expected according to the theoretical expectation, total external debt exhibited a negative and insignificant effect on economic growth. This means that an increase in the total external debt will decrease economic growth which is in line with the study of Isibor, Babajide and Akinjare (2018), Senadza, Fiagbe, and Peter (2018), Paul (2019), Ajayi and Edewusi (2020), Muhammad and Abdullahi (2020).On the other hand, as expected in conformity with theoretical expectation, inflation rate was found to be positively and insignificant related to economic growth in the long run. This means that an increase in inflation rate will increase economic growth in the long run which negate the findings of Sam (2021). Whereas in the same study investment was found to be negative and insignificantly related to economic growth in the long run. This means that an increase in investment will decrease economic growth in the long run.

In addition, government expenditure was found to be positive and insignificantly related to economic growth in the long run. This means that an increase in government expenditure will increase economic growth in the long run which negate the findings of Biyase (2019).Lastly, gross domestic savings was found to be negatively related to economic growth which implies that a unit increase in gross domestic savings will reduce economic growth in Nigeria in the long run which is in line with the study of Eke and Akujuobi (2021).

Meanwhile, the test for the statistical significance of the parameters in the long run using the probability test revealed that total domestic debt, total external debt, inflation rate government expenditure investment and gross domestic savingsare not statistically significant in explaining the changes that may occur in economic growth in Nigeria in the long run. Also, the LM correlation test, Heteroskedasticity test, normality test, stability test and functionality reset test implied that the result is reliable and sufficiently captures the impact of public debt on economic growth in Nigeria.In conclusion, it was discovered that public debt indices has an insignificant impact on economic growth in Nigeria in the long run.

Thestudy then recommended that policy makers should integrate appropriate measures towards ensuring suitable management of domestic debts; government should ensure that contracted national debts are directed towards encouraging investment in the country and through necessary

monitoring committees should ensure that national debts are directed toward the provision of basic amenities and services required for the development of communities and societies of the nation.The direction of future studies should consider the possibility of determining the direction causality between public debt and economic growth in Nigeria as well as focus on the relationship between public debt and economic growth in Nigeria. This will help policymakers to design comprehensive economic, and financial policy for sustained growth of the economy at large.

REFERENCES

[1]. Ajayi, I. E. & Edewusi, D. G. (2020). Effect of public debt on economic growth of Nigeria: An empirical investigation. International Journal of Business and Management Review, 8 (1), 18-38.

[2]. Àkos, D. & Istvàn, D. (2019). Public debt and economic growth: What do neoclassical growth models teach us? Applied Economics, 51 (29), 104-121.

[3]. Amakom, U. S. (2003). Nigeria public debt and economic growth: An empirical assessment of effects on poverty. African Institute for Applied Economics, 2(4), 43-58.

[4]. Biyase, M. (2019). General government debt and growth in SADC countries, EuroEconomica, 2(38), 57-68.

[5]. Chilombo, S. M. & Jiang, H. L. (2020). The impact of external debt on economic growth: Evidence from Southern Africa, Journal of Finance and Economics, 8(3), 135-141.

[6]. Eke. C. K. & Akujuobi, N. E. (2021). Public debt and economic growth in NIGERIA: An empirical investigation, International Journal of Development and Management Review (INJODEMAR), 16(1), 178-192.

[7]. Eze, O. M., Nweke, A. M. & Atuma, E. (2019). Public debts and Nigeria's economic growth, IOSR Journal of Economics and Finance (IOSR-JEF), 10(3), 24-40.

[8]. Eze, T. C. & Ukwueni, N. O. (2023). Impact of public debts accumulation on economic growth in Nigeria: Issues and implications for economic recovery. ABUAD Journal of Social and Management Sciences (AJSMS), 4 (1), 105-129.

[9]. Isibor, A. A., Babajide, A. A. & Akinjare, V. (2018). The effect of public debt on economic growth in Nigeria: An empirical investigation. International Business Management 12 (6), 436-441.

[10]. Madow, N., Nimonka, B., Brigitte, K. K. & Camarero, M. (2021). On the robust drivers of public debt in Africa: Fresh evidence from Bayesian model averaging approach. Cogent Economics & Finance, 9 (1), 1860282.

[11]. Mhlaba, N., Phiri, A. & Nsiah, C. (2019). Is public debt harmful towards economic growth? New evidence from South Africa. Cogent Economics & Finance, 7 (1), 1603653.

[12]. Mokuolu, J. O. (2021). External Debt and Economic Growth in Nigeria: Is There a Nexus? International Journal of Economics, Business and Management Research,5(5), 304- 313,

[13]. Muhammad, M. A. & Abdullahi, K. (2020). Impact of external debt servicing on economic growth in Nigeria: An ARDL approach. International Journal of Business and Technopreneurship, 10 (2), 257-268.

[14]. Obisesan, O. G., Akosile, M. O. & Ogunsanwo, O. F. (2019). Effect of external debt on economic growth in Nigeria. African Journal of Economics and Sustainable Development, 2 (1), 39-50.

[15]. Ogbonna, K. S., Ibenta, S. N., Chris-Ejiogu, U. G. & Atsanan, A. N. (2019). Public debt services and Nigerian economic growth: 1970-2017. European Academic Research, 6 (10), 22-34.

[16]. Ogunjimi, J. A. (2019). The impact of public debt on investment: Evidence from Nigeria. Development Bank of Nigeria Journal of Economic and Sustainable Growth, 3 (2), 1-28. https://www.researchgate.net/publication/335992571

[17]. Panizza, U. & Presbitero, A. F. (2012). Public debt and economic growth in advanced economies: A survey. Swiss Journal of Economics and Statistics, 14 (9), 175-204.

[18]. Paul, N. (2017). Analysis of the impact of external debt on economic growth in an emerging economy: Evidence from Nigeria African Research Review. 11(4), 156-173.

[19]. Paul, N. (2019). External debt and economic growth in Nigeria: Long run analysis, International Journal of Finance and Banking Research, 5(6), 180-187.

[20]. Precious, L. N. (2015). Effects of public debt on economic growth in Swaziland.

International Journal of Business and Commerce, 5(1), 1-24.
[21]. Sam, K. H. (2021). Public debt and economic growth: Contemporary evidence from a developing economy, Asian Journal of Economics and Banking, 5 (2), 173-193.
[22]. Tabengwa, G. K. (2014). Impact of shocks to public debt and government expenditure on human capital and growth in developing countries. Journal of Economics and Behavioural Studies, 6 (1), 44-67.
[23]. Teoh, S. R., Muhammad, A. A., Wan, S. M.O., Rosita, H., Josephine, Y. T. H., Abang, A. M., Mohd, K. H. H. & Farah, D. K. (2021). Impact of external debt on economic growth: The role of institutional quality, International Journal of Academic Research in Economics and Management Sciences, 10(3), 223-236.
[24]. World Bank Statistics (WDI, 2019).