EXTERNAL DEBT AND ECONOMIC GROWTH IN NIGERIA

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ABSTRACT

This study examines the impact of external debt on economic growth in Nigeria over the period 1986–2023 using econometric techniques, including unit root tests, the Autoregressive Distributed Lag (ARDL) model, and the Vector Autoregression (VAR) Granger causality test. The results reveal that external debt exerts a significant and positive influence on economic growth in the short run, but becomes negative and statistically insignificant in the long run. Similarly, debt servicing payments have a negative and significant effect on growth in the short run, while their long-run impact remains negative but insignificant. The findings further indicate the absence of a causal relationship between external debt and economic growth in Nigeria. In addition, the ARDL results show that exchange rate fluctuations have a significant negative effect on economic growth, whereas inflation has a positive and significant impact. The presence of a long-run equilibrium relationship among the variables was also confirmed. Based on these findings, the study concludes that while external borrowing may stimulate short-term growth, its long-term benefits are limited without effective management. The study recommends that the Nigerian government should restructure its external debt management by channelling borrowed funds into productive capital projects capable of generating sufficient returns. It also suggests reforming debt servicing strategies, particularly by extending repayment periods, and promoting economic diversification to enhance internally generated revenue and reduce dependence on external borrowing.
Keywords: External debt; Debt servicing; Economic growth; ARDL; VAR

INTRODUCTION

Borrowing money from external source to finance national programmes and projects does not necessarily put a wedge to national economic development. However, lack of knowledge of the terms and conditions as well as corruption, which makes the borrowed fund unproductive, is the problem of external debt as it makes countries to excessively earmark huge amount of their resources in offsetting outstanding liabilities, thereby compromising their domestic growth and development objectives (Odey etal, 2023; Oti, Odigbo& Odey, 2016).

Considering Keynesian theory of debt which upholds that increase in public debt increases economic growth of a nation, using trend analysis, we observed that the ratio of external debt rose from 2.8% to 5.6% from 1985 to 1990 and up to 6.5% in 1995 respectively, while that of debt

servicing consequently increased from 22.1% to 24.0 and up to 24.4% within the respective periods and within these periods, that of GDP though increased from 5.9% to 11.7% from 1985 to 1990, but decreased to 0.07% in 1995. Similarly, debt servicing increased from 26% to 27.7% between 2000 to 2005 respectively, that of external debt decreased from 8% to 7.8% and GDP increased from 5.02% to 6.44% respectively. Similar trend was also observed between 2010 and 2015 where external debt and debt servicing increased from 6.5% to 7.67.6 and 25.9% to 26.4% from 2010 to 2015 respectively; while that of GDP decreased from 8.01% to 2.65% within the same periods. Lastly, between 2020 to 2023, external debt and debt servicing increased from 6.59% to 19.5% and 11% to 55% in the respective years. However, within the observed periods, though that GDP slightly increased from -1.79 % to 2.74%; but this represents a decrease from the 3.10% growth recorded in 2022%.

From the trend analysis, it is observed that these variables did not toe in the pattern of direction with the theory as they move in opposite direction; and even when they move in the same direction, they did not possess equal proportionate change. Therefore, the likely adverse economic implication of these deviations in the country's economic activities, could lead to the periodic increase in the country's unemployment and inflation rates as well as the external sector disequilibria; and these factors are highly conjectured as being able to militate against the growth of any economy. That is why over the observed years, unemployment, inflation and exchange rates have been on increase. For instance, between 1999 and 2000, unemployment, inflation and exchange rates rose from 17.5% to 18.1%, 6.93% to 18.87% and 4.58% to 4.67% respectively, while that of GDP increased from -1.9% to 2.4. Again, between 2015 to 2019, unemployment, inflation and exchange rates increased from 9% to 17.67%, 9.02% to 11.4% and 5.28% to 5.72% respectively, while that of GDP increased from -0.03% to 0.458% (CBN, 2020).

This ugly incidence has continued to rise to the point of that youth unemployment remained as high as 6.5% in June 2024, inflation rate rose to 33.88% in September 2024, while that of dollar to naira was 1,726.8500 on November 27, 2024 (CBN, 2024). Hence, having observed the problem, the need to empirically research on the impact of the external debt burden on economic growth in Nigeria is felt.

1.3 Research Questions

Three research questions were posed to investigate the impact of external debt burden on Nigeria's economic growth. They are as follows:

i. To what extent does external debt affect economic growth in Nigeria?
ii. What is the magnitude of effect of external debt service payment on economic growth in Nigeria?
iii. Does significant causal relationship exist between external debt and economic growth in Nigeria?

1.4 Objectives of the Study

The main objective of the study is to investigate the impact of external debt burden on Nigeria economic growth. The specific objectives of the study aimed to;

i. Examine the extent in which external debt impact on economic growth in Nigeria.
ii. Ascertain the magnitude in which debt service payment affect economic growth in Nigeria
iii. Determine whether significant causal relationship exist between external debt and economic growth in Nigeria.

1.5 Hypotheses

Three null hypotheses formulated to guide the study are:

i. External debt has no significant impact on economic growth in Nigeria.

ii. Debt service payment has no significant effect on economic growth in Nigeria,

iii. There is no significant causal relationship existing between external debt and economic growth in Nigeria.

1.6 Significance of the Study

The significance of the study has both theoretical and practical applications.

Theoretically, the finding and recommendations of this study will provide reliable knowledge and understanding on the causal relationship of external debt and Nigeria economy. The result of this study and policy recommendations will form bases for discussion among economics experts to further elucidate more issues and challenges of external debt in Nigeria economic growth and possibly proffer alternative solutions to external aid.

Practically, the findings and recommendations of the study will help the government and policy maker to formulate an effective policy to adopt alternative measure of reducing the negative effect of external debt on Nigeria economy. The study will provide the government with reliable data for future decision making on the strategy to improve the performance of the economy.

1.7 Scope and Limitations of the Study

The study seeks to analyze Nigeria's external debt burden and its impact on economic growth. In order to fully capture its effect on the economy, a thorough empirical investigation was conducted with data covering a period of 37 years i.e. 1986-2023. This period was chosen to cover the period

Structural Adjustment Programme (SAP). The study employed secondary data on gross domestic product, external debt, debt servicing Payment, exchange rate and inflation rate and sought to know their impacts on economic growth and in Nigeria.

The limitations of the study are adduced from the fact that the data to be used in this study were transformed, and when data is transformed, they loose values, which may likely affects the estimation results. However, this study will take cognizance of this fact, and tries to avoid too many lagging of the variables in order not to loose much value of the variables in question

SECTION TWO

REVIEW OF RELATED LITERATURE

2.1 Conceptual Review

2.1.1 External Debt

External debt is described as that part of a country's debt that is borrowed from foreign lenders including commercial banks, governments or international financial institutions. External debt becomes necessary when domestic financial resources become inadequate to finance public goods that increase welfare and engender economic growth. External debts are funds sourced from outside the nation's boarder usually in foreign currency and is interest- bearing to finance specific project(s) (Ogunmuyiwa, 2011).

2.1.2. Debt Servicing Payment

Debt service payment is defined as the regular payment in installments of loans taken by a country from domestic and external sources. An installment includes interest on debt and a part of the principal (Choong, Evan, Venus & Puah, 2010). For servicing debt, a country or corporate

organization should have those timely cash flows. If a country is unable to honor its debt service obligations in the absence of required funds, the country is said to be unable to service her debt. This variable is expected to be inversely related with economic growth provision. This is because, the higher the amount of money required in servicing the existing debts, the amount of fund available for provision of qualitative and quantitative economic growth.

2.1.3 Economic Growth

Economic growth is described as the increase in per capital gross domestic product (per capital GDP) or other measures of aggregate income. It is always evaluated as the rate of change in real GDP (Yusuf, Abidin, Bakar and Oluwaseyi 2018). Economic growth can exist either as positive economic growth or negative growth. It becomes positive when there are healthy macroeconomic variables of the economy (inflation, unemployment, etc.) and tends to be negative when these macroeconomic variables are shrinking.

2.2 Theoretical framework

2.2.1 The Bebt Cverhang Theory

The debt overhang thesis was propounded by Krugman (1988). Debt-overhang occurs when a nation‘s debt is more than its debt repayment ability. The theory states that if debt exceed the country’s ability to pay with some probability in the future, expected debt servicing is most likely going to be an increasing function of the output of the debtor’s country. The debt overhang theory provides a new dimension to the debt crisis faced by most developing countries in the world including Nigeria. According to Pattillo (2002), the debt overhang model implies that “large debt stocks would lower growth through the channel of reduced investment

2.2.2 Keynesian Theory: Keynesian theory was developed by British Economist, John Maynard Keynes in 1936. Keynes held the views that increase in public debt would raise national income.

He linked public borrowing with deficit financing and authorized government to borrow for all purposes so that effective demand in the economy is increased resulting in increased employment and output. The implication of Keynesian theory is that public borrowing is the strategic policy and initiatives of national government to grow her economy through investment into public enterprises such as building of infrastructures, investment in social capital and capacity building (Monogbe, 2016).

2.2.3 The Debt-cum-Growth Model

The debt-cum-growth model was pioneered by Krugman (1989); Alesina and Tabellini(1989), and supported by Tornell and Velasco (1992) postulated that debt is procured for investment purpose and that the investment will generate multiplier effects on economic growth and development, poverty, industrialization, and on general economic welfare. This theory asserts that debt becomes a burden when the ratio of external debt stock/GDP, debt stock to export, debt service/GDP and reserve to debt stock is higher than a tolerable limit. It equally links debt and growth to problems of capital flight where at high debt levels growth falls. According to the threshold theory, the fall in growth is due to the higher distortionary tax burden on capital required to service the debt. It leads to lower rate of returns on capital, lower investment and hence lower growth (Eaton, 1993.

2.3 Review of empirical studies

2.3.1 Empirical Studies in Relation to External Debt and Economic Growth

Chukwu (2023) examined the impact of external debt on economic growth in Nigeria ranging from 1981-2020. The focus variables are real gross domestic product as the dependent variable while external debt, exchange rate, inflation rate and domestic debt are the independent variables. The Ordinary Least Square (OLS) technique was used and results indicated that external debt has negative and insignificant impact on economic growth in Nigeria. The granger causality test result

also shows that there is no causality relationship between external debt and economic growth in Nigeria.

Tumba, Hamisu and Tumba (2022) investigated the effect of external debts and debt burden (proxied by the ratio of total debt service payment to export earnings) on economic growth within the framework of vector error correction model (VECM). The study found evidence of debt overhang in Nigeria due to the negative-significant relationship between external debts and economic growth.

John, Fedir, Maxim, Olena and Olena (2022) examined the short- and long-run impact of state debt on economic growth in Nigeria. The model was estimated using an autoregressive distributed lag (ARDL) bounds testing method to co-integration for the long-run investigation. The study uncovers evidence of a long-term link between the study variables. In addition, the study finds that all the explanatory is statistically significant.

George, Chioma and Edet (2020) examined the impact of external debt on economic growth in Nigeria from 1980 to 2017. The Augmented Dickey-Fuller unit root test and Autoregressive Distributed Lag techniques were used as the main analytical tools. The result of the unit root test showed evidence of mixed order 1(0) and 1(1). The ARDL Bounds test revealed the existence of long run relationship among the variables

The study by Asteriou, Pilbeam and Pratiwi. (2020) examined the relationship between public debt on economic growth, in a panel of selected Asian countries for the period 1980-2012. The variables of the study are GDP, public debt to GDP ratio, human capital, trade openness, and investment ratio. Using asymmetric panel ARDL method, the results indicated that an increase in government debt retards economic growth in both the short and long run.

2.3.2 Empirical studies in Relation to External Debt Service Payment and Economic Growth

Momodu (2020) investigated the impact of external debt servicing on Nigeria's economic growth through a time-series data between 1985 to 2018 which was managed with Autoregressive Distributive Lag (ARDL) model. Results of the study indicated that in the long-run, external debt servicing will negatively affect economic growth.

Epaphra and Mesiet (2021) examined the effect of external debt on economic growth and public investment across 45 African countries over the 28-year period of 1990-2017. The study found using Panel data that debt service-to-export ratio tends to have a disastrous effect on public investment, which consequently results in lower economic growth. The study by Oluitan (2020) evaluates the impact of external public debt on the economic development of Nigeria over 56 years beginning 1960 and ending in 2015. The study used an error correction model to estimate the relationship and found that the proxy for external debt service payment is negative but not significant. However, the flaws in this article have been previously exposed which makes the results of the study extremely doubtful. To overcome these, the present study uses a panel of 40 countries and employed robust estimation techniques to arrive at a plausible conclusion.

Ademola Tajudeen and Adewumi (2018). External debt and economic growth of Nigeria: an empirical (2018) is another co-authored study that explored the impact of external debt on economic growth in Nigeria over the period 1999-2015. Variables used in the study are GDP, external debt stock, external debt service payment, and exchange rate. The authors used vector error correction mechanism and Granger causality test as methods of data analysis. Results indicate no causal relationship between external debt service payment and economic growth, as well as no significant effect of the variable on real short-run GDP growth, whereas the long-run result was not reported.

2.3.3 Empirical studies in Relation to Causal Relationship Between External Debt and Economic Growth

Hajian, Mohamed and Kaliappan (2022) investigated the causal and dynamic effect of government debt on output growth in the context of developing economies with generally medium debt regimes in ASEAN-4 countries: Indonesia, Malaysia, the Philippines and Thailand in the period 1985-2019 years. A robust multi-variable vector autoregressive (VAR) model at level is employed to capture the long-run relations, and causality is addressed using the Toda-Yamamoto (1995) approach. As a by-product of the analysis, the effect of government debt on two essential factors of sustainable GDP growth, namely, private capital formation and human capital is examined. The study finds that debt does not cause output growth in Indonesia, Malaysia and Thailand but the reverse is true. GDP response to debt shock is statistically insignificant in the three countries, contrary to the general negative effect found in some empirical studies involving developing countries. However, in the Philippines, the result shows that economic growth is debt-driven because debt positively causes GDP but without improving private investment or human capital. The present study differs in terms of location.

Hilton (2021) examined the causal relationship between external public debt and economic growth in Ghana for the 41-year period covering 1978-2018. The author uses a dynamic multivariate autoregressive-distributed lag (ARDL)-based Granger-causality model to test the causal relationships between external public debt and economic growth based on annual time-series data. Findings revealed that external public debt has no causal relationship with GDP in the short-run, there is unidirectional Granger causality running from external public debt to GDP.

Saungweme and Odhiambo (2019) researched the causal relationships between external debt and economic growth, and between external public debt service and economic growth in Zambia for

the 48-year period from 1970 to 2017. Their study used a dynamic multivariate autoregressive-distributed lag (ARDL)-bounds testing approach and found that there is unidirectional Granger-causality from economic growth to external public debt in the country both in the short and long runs.

Saungweme and Odhiambho (2019) explored the causal relationship between government debt, debt servicing and economic growth in Zambia for the period 1979 to 2017 using a dynamic multivariate ARDL approach. To achieve this objective, RGDP was modelled as a function of stock of public debt, fiscal balance and savings as a share of GDP. The empirical results indicated a unidirectional causal relationship from economic growth to public debt in Zambia. The study findings supported the hypothesis that the pace of economic growth matters in defining the level of public sector indebtedness.

2.4 Gap in Empirical Review

Most of the reviewed studies concentrated on the impact of external debt on economic growth, without much accentuation on debt servicing payment, exchange rate and inflation rate, which are among the frontline measures of external debt and economic growth as their contributions to economic growth must not be undermined. The scope of some of the studies ended before 2019 and as such, their findings must have been taken by events knowing full well that there have been series of new policies which the new administration in Nigeria have introduced that may have impacted on the economy, hence the need to extend the scope to 2023 to capture the most recent issues such as the COVID-19 pandemic and its effect on external borrowing in Nigeria.

SECTION THREE

METHODOLOGY

3.1 Research Design

The study adopted an ex-post-facto research design; as it focuses on utilizing already existing variables that cannot be manipulated. The variables used in this study include gross domestic product (dependent variable) while external debt, debt service payment, exchange rate and inflation rate are the explanatory variables. The analytical tools employed include unit root tests, bound testing co-integration test and autoregressive distributive lag model (ARDL).

3.2 Model Specification

The model of this study follows Asteriou et al. (2020) in their study of external debt and economic growth in Asian countries whose theoretical framework was anchored on the Keynesian theory of fiscal financing. These researchers expressed the relationship between external debt and economic growth in functional form as thus:

$$RGDP = \int (pdbt, Opn, Hmc, inv) \quad 1$$

The equation 1 is expressed in econometric form as:

$$RGDP_t = \beta_0 + \beta_1 pdbt_t + \beta_2 opn_t + \beta_3 hmc_t + \beta_4 inv_t + \varepsilon_t \quad 2$$

Where, RGDP is real gross domestic product, pdbt is external public debt to GDP ratio, while the control variables are trade openness (opn), human capital (hmc), and investment to GDP ratio (inv). However, considering debt overhang theory which brings the issue of debt service payment and its effect on the economy, this study modified equation 1 and 2 to incorporate debt service payments and as well substitute investment (inv) with exchange rate (EXR) because of its importance in open economy like Nigeria. Also, inflation rate is added as a measure of internal stability. Hence, our model is stated in a functional form as thus:

$$GDP = f(EXD, DSP, EXR, INF) \quad 3$$

The equation in 3 can also be expressed in logarithmic form as follows

$$Log\ GDP = \alpha 0 + \alpha_1 LogEXD + \alpha_2 LogDSP + \alpha_3 LogEXR + \alpha_4 INF_t \quad 4$$

Where: GDP = Gross Domestic Product, EXD= External Debt, DSP= Debt Service Payment, EXR=Exchange Rate and INF = Inflation Rate α_0 = intercept and α_1, α_2, α_3 and α_4 are the coefficients of the regression equation. U_t is the stochastic or error term, while Log is the natural log of the variables.

3.3 Data Discussion

3.3.1 Gross Domestic Product (GDP)

Gross domestic product is one of the indicators of economic growth in any economy. Therefore, economic growth is explained as a rise in the capacity of an economy to produce more volume of goods or per capita income in the domestic economy over a period of time. It is accurately measured by deflating or removing the inflation effects. It is the best way of measuring the growth and development of an economy. GDP takes into account the nation's entire economic output. The calculation of GDP involves the aggregate goods produced by the private sector of the economy

for sale. It measures all the monetary value of all finished products including the products produced by the nationals and non-nationals who are residing in the country.

3.3.2 External debt

External debt is the total debt a country owes to foreign creditors. The debt includes money owed to private commercial banks, other governments, or international financial institutions such as the International Monetary Fund (IMF) and World Bank.

3.3.3 Debt servicing payment

This is the sum of principle repayment and interest actually paid in currency, goods or service on long-term debt.

3.3.4 Exchange Rate

This is the rate of one's country's currency over another. In determining the external debts and its impact on economic growth of Nigeria, exchange rate data were sourced from central bank of Nigeria statistical bulletin 2016.

3.3.4 Inflation rate: This is the persistent rise in overall level of prices for goods and services.

3.4 Data Sources

The data for this work is from central bank of Nigeria annual statistical bulletin fro 1981-2021.

3. 5 Estimation Procedures

3.5.1 Stationarity Test

The time series properties of data were examined in order to avoid spurious result emanating from the non stationarity of the data and to analyze the dynamic structure of the relationship. The

estimation begins with a unit root test to confirm the stationarity state of the variables that enter the model using Augmented Dickey Fuller (ADF) and Philip Peron (PP) .

Consequently, conducting the tests with and devoid of a deterministic trend (t) for all the series and comparing P-Values with the critical values at 5% significance level, we observed that the series have mixed order of integration and that led us to the application of Auto-regressive distributed lag (ARDL) model

3.5.2 Auto-Regressive Distributed Lag (ARDL) Model

The use of the ARDL model follows the outcome of the unit root test. The model is most appropriate in a situation in which the results of the stationarity test indicated mixed order of integration among the variables employed in the research, especially when the mixtures involve I(1) and I(0). Meanwhile, to determine the short-run and long-run coefficients of the series, the ARDL model is applied in the analysis.

SECTION FOUR

RESULTS

The variables considered are gross domestic product (GDP) (dependent variable), external debt of Nigeria (EXD), debt service payment (DSP), official exchange rate (EXR) and inflation rate (INF) are used as the independent variables. Applying advanced econometric techniques, the results below were obtained.

4.1 Unit Root Test

In order to determine the stationarity status of the variables used in the model for the empirical analysis, Augmented Dickey-Fuller (ADF) test was employed and the test result is presented below as thus:

Table 1: Results of Augmented Dickey-Fuller Unit Root Test

	Level			**First Difference**			Remark
Variables	t-Statistics	5% critical value	p-value	t-statistics	5%-critical value	p-value	
LGDP	-2.710411	-2.954021	0.0649	-4.186750	-2.951125	0.0024	I(1)
LEXD	-2.486646	-2.951125	0.1275	-4.179648	-2.951125	0.0025	I(1)
LDSP	-1.557075	-2.976263	0.4901	-3.553852	-2.976263	0.0140	I(1)
LEXR	-2.465389	-2.948404	0.0651	-4.395110	-2.954021	0.0014	I(1)
INF	-3.627730	2.976263	0.0010	----------	----------	---------	I(0)

Sources: **Researcher's computation from E-view 9**

Table 2: Results of Phillips Perron Unit Root Test

	Level			**First Difference**			Remark
Variables	t-Statistics	5% critical value	p-value	t-statistics	5%-critical value	p-value	
LGDP	-2.664981	-2.948404	0.0603	-4.522866	-2.951125	0.0010	I(1)
LEXD	-2.033654	-3.948404	0.2415	-4.179648	-2.951125	0.0025	I(1)
LDSP	-2.432711	-2.954021	0.1409	-7.281249	-2.957110	0.0000	I(1)
LEXR	-2.465389	-2.948404	0.0651	-4.013827	-2.954021	0.0039	I(1)
INFR	-3.811383	-2.948404	0.0069	----------	----------	---------	I(0)

Sources: **Researcher's computation from E-view 9**

The Augmented Dickey Fuller (ADF) and Phillips Perron (PP) unit root test presented in table 1and 2 above, revealed that Inflation rate (INF) was stationary at level. Hence, inflation rate is integrated of order zero. This is because, inflation rate has ADF statistics greater than its critical values in absolute term at 5 percent level of significance. Every other variable such as LGDP, LEXD, LDSP and EXR showed no stationarity at levels since their Augmented Dickey-Fuller (ADF) test statistics were less than their critical values in absolute term. However, at first differencing, the non-stationarity variables become stationary; thus, they are integrated of orders one, I(1), which implies that all the variables are free from unit root associated problems. It further shows that the covariance, variance and mean of the variables are constant over time. The mixed order of integration from the unit root test results implies the possibility of long-run relationship among the variables of the study, though further investigations using ARDL – Bound test result will reveal if actually long run relationship exist among the variables of the study.

4.2 ARDL Bounds Test

The bound test is used to examine whether the variables are co integrated. The variables are said to be co integrated if the F-statistics is greater than the critical values and otherwise if it is less. The result of Bounds test is presented in the Table 3 as follows:

Table 3: ARDL Bounds Test

Null Hypothesis: No long-run relationships exist		
Test Statistic	Value	k
F-statistic	25.72118	5
Critical Value Bounds		
Significance	I0 Bound	I1 Bound
10%	2.26	3.35
5%	2.62	3.79
2.5%	2.96	4.18
1%	3.41	4.68

Source: Researcher's compilation from E-view 9

The results of the ARDL bounds test presented in Table 3 above shows that a long-run relationship exists between external debt and economic growth in Nigeria within the period of the study. The result also disclosed that the computed *F*-statistic exceeds the upper critical value at 5% level of significance, which implies that external debt and economic growth in Nigeria are co integrated in the long run at 5% level of significance. This is as a result of the fact that the value of the F-statistic as presented in table 3 above which has the value of 25.72118 is greater than the value of the upper bound boundary of 3.79at 5% level of significance. To this end, the hypothesis of no long-run

relationship existing between external debt and economic growth is rejected at a 5% level of significance.

4.3 ARDL Short-Run Results

The evidence of equilibrium long-run relationship revealed by ADRL bound test among the variables; prompted the investigation of the coefficients of the short-run and long-run of the variables employed in the study using the ARDL short-run and long-run coefficients test with the objective of ascertaining the elasticity or magnitude of the parameters. The results as estimated are indicated in tables 4 and 5 of chapter four below.

Table 4: ARDL Short-run Coefficients Test

Variable	Coefficient	Std. Error	t-Statistic	Prob.
D(LEXD)	0.005629	0.026583	0.211747	0.8348
D(LEXD(-1))	0.083419	0.027680	3.013627	0.0078
D(LDSP)	-0.137310	0.031049	-4.422332	0.0004
D(LDSP(-1))	-0.123040	0.021788	-5.647177	0.0000
D(LEXR)	-0.131208	0.061061	-2.148803	0.0463
D(LEXR(-1))	-0.083251	0.053862	-1.545639	0.1406
D(INFR)	0.002017	0.000816	2.473056	0.0242
D(INF(-1))	-0.002179	0.000887	-2.458057	0.0250
CointEq(-1)	-0.134549	0.043615	-3.084951	0.0067

R^2 = 0.999803; F-stat = 6156.962, and Prob(F-stat) = 0.000000 , DW stat = 2.064830

Source: Researcher's compilation from E-view 9

Table 4 illustrates the short-run coefficients test results of the ARDL model. The results indicated that external debt at lag zero has a positive and insignificant effect on gross domestic product while at lag one, external debt (LEXD)(-1) with the coefficient of 0.083419 and P-Value of 0.0078 has a positive and significant effect on gross domestic product in the short-run. It is crucial to note that, despite the fact that the above results include different lags, the research only considers the

lags that satisfied the goals of the study based on its significant status or meeting the a priori expectation of the variables in question.

The estimation results as well indicated that debt servicing Payment (LDSP) at both lag zero and lag one, has a negative and significant impact on gross domestic product (LGDP) whereas exchange rate (LEXR) at lag zero with the coefficient of -0.131208 and P-Value of 0.0463 exerted negative and significant impact on gross domestic product; in the short-run in Nigeria. More so, the results show that inflation rate (INF) at lag one, with the coefficient of -0.002179 and P-Value of 0.0250 has a negative and significant impact on gross domestic product (LGDP) in Nigeria in the short run.

The results also indicated ECT value of -0.134549 and p-value of 0.0067, which is significant at 5 percent critical value. The ECT result depicts speed of adjustment which is in tandem with the granger representative theorem in which it upholds that a negative and statistically speed of adjustment is a required condition for a significant long-run association while the negative sign of the coefficient satisfies the second-order condition, and the significant status of the ECT satisfies other condition necessary for the utilization of econometric packages in the research.

The above result shows that the R^2 is 0.999803, which implies that the model explains about 99.9803% of the total variations in gross domestic product (GDP) are explained by the independent variables (external debt, debt servicing payment, exchange rate and inflation rate) during the period of the study. While the remaining 0.0197% variations are as a result of other explanatory variables that are not captured in the model. The Prob(F-statistic) being 0.000000, implies that the joint influence of the explanatory variables is statistically significant as it is less

that 0.05 at 5% level of significance. Again, Durbin Watson statistic being 2.064830 which is approximately 2, shows the absence of serial auto correlation in the model.

4.4 Long Run Results

The long run relationship between external debt and economic growth in Nigeria is accessed by the lower part of the result of Autoregressive Distributed Lagged (ARDL). The result is presented as following in the Table 5:

Table 5: ARDL Long-run Coefficients Test

Variable	Coefficient	Std. Error	t-Statistic	Prob.
LEXD	-0.159131	0.138527	-1.148734	0.2666
LDSP	-0.125962	0.270393	-0.465846	0.6472
LEXR	1.106661	0.384945	2.874856	0.0105
INF	-0.005771	0.010118	-0.570369	0.5759
C	7.219714	1.488923	4.848951	0.0002

Source: Researcher's compilation from E-view 9

Table 5 above reveals the long-run coefficients test results of the ARDL model for which the variables under consideration were estimated. From the results, external debt and debt servicing payment with the coefficient of -0.159131 and -0.125962 respectively and P-Value of 0.2666 and 0.6472 respectively have negative and insignificant impact on gross domestic product in Nigeria. In the same vein, inflation rate with the coefficient of -0.005771 and P-Value of 0.5759 has a negative and insignificant impact on gross domestic product in Nigeria. However, exchange rate with the coefficient of 1.106661 and and P-Value of 0.0105 exerts positive and significant impact on gross domestic product in the long-run in the economy.

4.5. VAR Granger Causality or Block Exogeneity Wald Tests

The VAR Granger causality test is employed to determine the significant causal relationship existing between external debt burden and economic growth in the Nigerian economy.

Table 6: VAR Granger causality/block exogeneity wald tests

Dependent variable: LGDP			
Excluded	Chi-sq	df	Prob.
LEXD	0.158951	2	0.9236
LDSP	6.688737	2	0.0353
EXR	0.096875	2	0.9527
INF	7.320986	2	0.0257
All	17.11075	8	0.0290

Source: Researcher's compilation from E-view 9.0

Table 5 above represents the results of causality test for external debt and economic growth in Nigeria. The test rejects the null hypothesis of no significant causal relationship between the variables, if the corresponding p-value of the variable is statistically significant at 5 percent level of significance.

From the estimation results, the Chi-square values of LEXD, LDSP, LEXR, and INF are 0.158951, 6.688737, 0.096875, and 7.320986, respectively while the associated p-values include 0.9236,

0.0353, 0.9527 and 0.0257, respectively. These results imply that debt servicing payment and inflation, have a significant causal relationship with economic growth in Nigeria, with significant causality running from LDSP and INF to GDP, while significant causal relationship does not exist between external debt and exchange rate in the Nigerian economy.

4.6 Test of Research Hypotheses

Decision Rule: If the chosen level of significance (0.05) at 5% level of significance is greater than the p-value, the null hypothesis is rejected, otherwise, will be accepted. This is applicable to all the hypotheses in this research work.

4.6.1 Hypothesis One

External debt has no significant impact on economic growth in Nigeria.

From tables 4 and 5 of section four, the coefficient of external debt in the short-run at lag 1 is 0.083419 and its p-value is 0.0078, which is less than 5 level of significance. In the long-run, the coefficient and p-value of external debt are -0.159131 and 0.2666, respectively. Since the results indicated that the coefficient of the variable is positive and significant in the short-run, the study rejects the H_0 and concludes that external debt exerts significant and positive influence on economic growth in Nigeria. However, the null hypothesis cannot be rejected in the long run with a p-value of 0.2666 and with a negative impact.

4.6.2 Hypothesis Two

Debt service payment has no significant effect on economic growth in Nigeria.

In this hypothesis, the p-values and coefficients of debt service payment generated via the application of the ARDL technique is utilized. In view of the estimated results presented in tables

4 and 5, the coefficient of debt servicing Payment in the short-run at lag one is -0.123040 while its corresponding p-value is 0.0000, which is less than the 5 percent critical value. In the long-run, the coefficient of debt servicing Payment is -0.125962, and its p-value is 0.6472. Thus, since the coefficients of the variable is negative and its p-value is statistically significant in the short-run, the H_0 is rejected and the study concludes that debt servicing Payment has a negative and significant impact on Nigeria's economic growth. Again, with a p-value of 0.6472, the null hypothesis is equally rejected in the long run with a negative impact.

4.6.3 Hypothesis Three

There is no significant causal relationship existing between external debt and economic growth in Nigeria.

In order to test for this hypothesis, the Chi-square statistics and the p-value of external debt estimated from the VAR Granger causality test for the relationship between external debt and economic growth in the Nigerian economy. By decision rule, if the associated p-value of the Chi-square of the variable is statistically significant at 5 percent level of significance, the H_0 of no significant causality between the variables would be rejected, implying that external debt does cause economic growth in Nigeria.

From the results presented in table 6 of section four, the value of Chi-square of external debt is 0.158951 and its associated p-value is 0.9236. Since the p-value of the Chi-square of the variable is greater than the 0.05 at 5 percent chosen level of significance; the null hypothesis is not rejected

and the study concludes that significant causal relationship does not exist between external debt and economic growth in Nigeria.

SECTION FIVE

DISCUSSION

5.1 Extent of Impact of External Debt on Economic Growth in Nigeria

This objective focused on investigating the significant effect of external debt on economic growth in Nigeria from 1986 to 2023. To realize this objective, the estimated results obtained through the application of the ARDL model was employed and from the results, the coefficient of external debt at lag one is 0.083419 with the associated p-value of 0.0078. These results indicate that external debt at 5 percent level of significance has a significant and positive effect on economic growth. Hence, it is averagely estimated that 1% increase in the external debt will result in increase in economic growth by 0.08% in Nigeria in the short run. However, in the long run, the reverse is the case as 1% increase in the external debt will result to decrease in economic growth by 0.16% in Nigeria. Empirically, the results are in line with the findings of Onakoya and Ogunade (2017),

Anning, Ofori, and Affum (2016), Ramzan, Faridi and Tariq (2010), Elom-Obed, Odo, ElomObed and Anoke (2017), etc who examined the influence of external debt in the countries like Tanzania, Ghana, Pakistan, Nigeria, etc and discovered that external debt had an insignificant and negative influence on gross domestic product in the various economies of the study .

5.2 Magnitude of Effect of External Debt Service Payment on Economic Growth in Nigeria

This objective is concern with the determination of whether or not debt service payment significantly impacted on economic growth in Nigeria for the period 1986-2023. In achieving this goal, the results obtained via the ARDL model was used and from the results presented in tables 4, the coefficient of debt service payment at lag one is -0.123040 while its p-value is 0.0000. These results indicate that debt service payment has a negative and significant effect on economic growth in Nigeria. Hence, the study estimated on the average that 1% rise in the debt service payment will result to a decline in economic growth by 0.12% in Nigeria in the short run; while 1% increase in the debt service payment will result to a decrease in economic growth by 0.13% in the long run. In empirical perspective, these results conform to the findings of Anning, Ofori, and Affum (2016), Ramzan, Faridi and Tariq (2010), etc. These studies were undertaken to investigate the effect of debt servicing Payment on economic growth and other related topics across the globe including Tanzania, Ghana, Pakistan, Nigeria, etc. The studies discovered that debt servicing Payment had a negative and significant influence on gross domestic product in the various countries of the study

5.3 Determine the Significant Causal Relationship Between External Debt and Economic Growth in Nigeria.

This objective focuses on investigating the significant causal relationship existing between external debt and economic growth in the Nigerian economy for the period 1986-2023. To realize

this goal, the Chi-square statistic and the p-value of exchange rate estimated using the VAR Granger causality test were employed in the investigation. From the results shown in table 6 of section four, the value of Chi-square of external debt is 0.158951 and its associated p-value is 0.9236. Since the p-value of the Chi-square is statistically greater than 0.05 at 5% level of significance; the null hypothesis is accepted and the research concludes that significant causal relationship does not exist between external debt and economic growth in Nigeria.

SECTION SIX

SUMMARY, CONCLUSION AND RECOMMENDATIONS

6.1 Summary of Findings

The summary of findings of this study is typically generated from the results estimated through the application of the econometric packages used in research, which are basically anchored on the research's objectives. The summary of findings of the study is stated below.

1. The research found that external debt has a significant and positive influence on economic growth in Nigeria in the short run, but negative and insignificant in the long run.
2. The analysis also discovered that debt service payment exerts has a negative and significant impact on economic growth in Nigeria in the short run, but negative and insignificant effect in the long run.
3. Furthermore, the research also discovered that external debt has no significant causal relationship with growth rate of the Nigerian economy.

6.2 Conclusion

The study empirically investigated the impact of external debt on the economic growth in Nigeria for the period 1986-2023. Unit root test, ARDL and VAR Granger causality test method of analysis are employed. The employed variables have different order of integration ranging from zero and one, which led to the application of ARDL. The results showed the presence of equilibrium long-run cointegrating equations of the variables used in the research. Hence, the estimated results showed that external debt at lag one has a significant and positive influence on economic growth in Nigeria in the short run, but negative and insignificant in the long run. The analysis also discovered that debt service payment has a negative and significant impact on economic growth in Nigeria in the short run, but negative and insignificant effect in the long run. Furthermore, the ARDL model showed that exchange rate has a significant and negative effect on economic growth in Nigeria. Lastly, the results revealed that inflation rate exerts a positive and significant effect on economic growth. Hence, the study maintains that government should restructure her external debt management by channeling the debt expenditure to capital project that can easily translate to economic growth and development even in the long-run.

6.3 Recommendations

This sub section is basically focused on the recommendations of the research, drawn from the objectives of the study and the results estimated using econometric packages. Consequently, the study made the following recommendations:

i). Government should restructure her external debt management by channeling the debt expenditure to capital project that can easily translate to economic growth and development even in the long-run. That is, government should ensure that external borrowings are channeled to the various productive investments that will generate returns that are sufficient enough to offset the debt when due.

ii). Government should re-structure its debt servicing Payment strategies as the present structure is negatively and significantly affecting economic growth of the nation. This can be achieved by restructuring the method of repayment by extending the repayment period.

iii). The government should diversify the economy so as to increase internally generated revenue to finance government expenditures; this will help reduce government borrowing.

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APPENDIX I: DATA

YEAR	GDP(₦'B)	EXD(₦'B)	DSP(₦'B)	EXR(%)	INF(%)
1986	202.44	41.45	1.63	2.0206	5.72
1987	249.44	100.79	3.93	4.0179	11.29
1988	320.33	133.96	9.24	4.5367	54.51
1989	419.2	240.39	13.27	7.3916	50.47
1990	499.68	298.61	23.82	8.0378	7.36
1991	596.04	328.45	26.41	9.9095	13.01
1992	909.8	544.26	19.4	17.2984	44.59
1993	1,259.07	633.14	81.08	22.0511	57.17
1994	1,762.81	648.81	49.4	21.8861	57.03
1995	2,895.20	716.87	51.06	21.8861	72.84
1996	3,779.13	617.32	53.05	21.8861	29.27
1997	4,111.64	595.93	68.54	21.8861	8.53
1998	4,588.99	633.02	64.39	21.8861	10
1999	5,307.36	2,577.37	30.84	92.6934	6.62
2000	6,897.48	3,097.38	131.05	102.105	6.93
2001	8,134.14	3,176.29	155.42	111.943	18.87
2002	11,332.25	3,932.88	163.81	120.97	12.88
2003	13,301.56	4,478.33	363.51	129.357	14.03
2004	17,321.30	4,890.27	382.5	133.5	15
2005	22,269.98	2,695.07	393.96	132.147	17.86
2006	28,662.47	451.46	249.33	128.652	8.24
2007	32,995.38	438.89	213.73	125.833	5.38
2008	39,157.88	523.25	381.2	118.567	11.58
2009	44,285.56	590.44	251.79	148.88	11.54
2010	54,612.26	689.84	415.66	150.298	13.72
2011	62,980.40	896.85	527.18	153.862	10.84
2012	71,713.94	1,026.90	679.3	157.499	12.22
2013	80,092.56	1,373.58	828.1	157.311	8.48
2014	89,043.62	1,631.52	940.21	169.68	8.06
2015	94,144.96	1,876.43	960.23	197	9.02
2016	101,489.49	2,356.57	1046.45	253.679	15.7
2017	113,711.63	2,456.22	1146.67	286.679	16.5
2018	127,762.55	2,556.87	1186.35	303.676	12.1
2019	144,210.49	3,612.53	1215. 24	306.92	11.4
2020	154,252.32	3,839.32	1223.35	358.81	13.2
2021	173,578.45	3,966.17	1260.08	421.55	16.95
2022	212206,38	46291.9	1050.66	449	18.85
2023	167626.42	47197.2	1612.46	460.702	24.66

Source: CBN Statistical Bulletin, 2023