External Debt Burden and Economic Growth in Nigeria

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ABSTRACT
This study examined external debt burden and economic growth in Nigeria. Accordingly, the main objective of the study is to investigate the impact of external debt burden on economic growth in Nigeria, using the econometric analytical technique. Annual time series data were sourced from the Central Bank of Nigeria Statistical Bulletin. Economic growth was measured by gross domestic product (GDP) while external debt burden was represented by external debt stock and debt service payment. The bound testing and Autoregressive Distributed Lag model estimation techniques were employed for the analysis. The study found that external debt and debt service payment have significant and negative effect on economic growth in Nigeria. The study recommends that; government should restructure her external debt management by increasing the debt expenditure to capital project that can easily translate to economic growth and development. Debt management office should put up strategies like debt renegotiation, avoid increase in borrowing, offset debt just to address debt servicing and reduce pressure on economic operations. The government should diversify the economy so as to increase internally generated revenue to finance government expenditures, which will help reduce government borrowing.

Keywords: *External debt burden, economic growth, ARDL, Nigeria*

1.0 Introduction

Starting from the inception of economics, the foremost effort and policy precedence of every government has been to promote and maintain a sustainable economic expansion and development. Attainment of this lofty objective is not automatic, but requires that every government has a considerable amount of capital to finance investment expenditures on productive sectors (George, Chioma and Edet, 2020). Perversely, inability of nations to accumulate this necessary capital for productive ventures, has made most countries to resort to

external borrowing so as to abridge the economic challenges (Tumba, Hamisu &Tumba, 2022). This stems from the fact that savings which promotes growth of a nation is a function of investment, and when domestic savings required for investment is not ample enough, external financial help is needed to ensure growth and development of a nation. In fact, this financial assistance in the form of borrowing by a country is called public debt and this public debt could be internal or external, but in this research work, our concern is on external debt and its burden on the growth trajectory of Nigeria.

Precisely, external debt as the name suggests, is a debt from outside the nation's territorial boundary. Hence, it is defined as debt owed to foreign nation(s) repayable in terms of foreign currency, goods or service; while external debt burden is the cost of servicing external debt (World Bank, 2004). In other words, external debt is typically borrowing from international organizations such as the World Bank and international financial institutions like Africa Development Bank, Islamic Development Bank, and bilateral agencies such as the China Exim Bank, the French Development Bank, or the Japanese Aid Agency. There are also foreign private creditors such as investors in Nigeria's Eurobonds (Ademola, Tajudeen & Adewumi, 2018). This implies that the debtors can be the government, corporations or citizens, and it equally includes money owed to private commercial banks, other governments, or international financial institutions such as the International Monetary Fund (IMF) or World Bank. External debt is an important measure for bridging the financing gaps of the government. Prudent utilization of this debt leads to higher economic growth and adds to capacity to service and repay it. It also helps the government to accomplish its social and developmental goals.

Nigeria external debts dated back to pre-independence era precisely 1959 when it acquired its first loan of twenty-eight (28) million US dollars from World Bank, to finance the construction of railway. According to George, Chioma and Edet (2020), Nigeria's external debt stock stood at $13.1 billion in 1982. The quest for developmental plans and financial excesses of the government in Nigeria surged up the country's external debt to 1 billion US dollar by 1971 (George, *et. al.,* 2020). The increase in external debt continued which was however due to fall in oil price in 1978 and sharp decline in the balance of payments. The states in the country joined in contracting loans from foreign creditors which gave rise to Nigeria external loan of about N17.3 billion in 1986, a situation that compelled the nation to adopt the Structural Adjustment Programme (SAP) in 1986, which was packaged by International Monetary Fund (IMF) as a means to revamping the nation's economy (Ayadi & Ayadi, 2016). Since 1990, Nigeria's external debt stock has been rising steadily. The increase continued as Nigeria's external debt for 2018, 2019 and 2020 were 54.2 billion, 60. 05 billion and 70.57 billion US dollar respectively (Central Bank of Nigeria, CBN, 2020). Consequently, Nigeria's external debt rose from 37955.090 billion US dollar to 39969.190 billion US dollar from October 2021 to January, 2022 (CBN, 2022).

1.1 Statement of the Problem

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 (Oti, Odigbo & Odey, 2016).

Considering the 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 percent to 5.6 percent from 1985 to 1990 and up to 6.5 percent in 1995 respectively, while that of debt servicing consequently increased from 22.1 percent to 24.0 and up to 24.4 percent within the respective periods and within these periods, that of GDP though increased from 5.9 percent to 11.7 percent from 1985 to 1990, but decreased to 0.07 percent in 1995. Similarly, debt servicing increased from 26 percent to 27.7 percent between 2000 to 2005 respectively, that of external debt decreased from 8 percent to 7.8 percent and GDP increased from 5.02 percent to 6.44 percent respectively. Similar trend was also observed between 2010 and 2015 where external debt and debt servicing increased from 6.5 percent to 7.67.6 and 25.9 percent to 26.4 percent from 2010 to 2015 respectively; while that of GDP decreased from 8.01 percent to 2.65 percent within the same periods. Lastly, within 2016 to 2019 via 2020, external debt rose from 8.1 percent to 8.9 percent and decreased to 7.8 percent in the respective years. However, within the observed periods, though that GDP slightly increased from 1.62 percent to 2.21 percent from 2016 to 2019 respectively, it decreased to 1.79 percent in 2020 (CBN, 2020; Debt Management Office, DMO, 2020).

From the trend analysis, it is observed that these variables did not move in the pattern of direction with the theory as they move in opposite path; and even when they move in the same direction, they did not possess equal proportionate change. The adverse economic implications of these deviations in the country's economic activities are 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 rate of any economy. Hence, having observed the problem, the need to empirically research on the impact of external debt burden on economic growth in Nigeria is felt.

1.2 Objectives of the Study

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

i. Examine the extent to which external debt impact on economic growth in Nigeria.
ii. Ascertain whether debt service payments have any significant effect on economic growth in Nigeria.
iii. Determine whether significant causal relationship exist between external debt and economic growth in Nigeria.

1.3 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 payments have no significant effect on economic growth in Nigeria.
iii. There is no significant causal relationship existing between external debt and economic growth in Nigeria.

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 External Debt Burden

External debt burden is the cost of servicing external debt and hence made countries to excessively earmark huge amount of their resources in offsetting outstanding liabilities, thereby compromising their domestic growth and development objectives. When debt reaches a certain threshold and with ineffective utilization of its proceeds due to corruption and weak governance, its effect turn adversarial as debt servicing explodes leading countries into debt burden (Oti, Odigbo & Odey, 2016). The burden of external debt make nations sees their economies on the negative quadrant of the debts' Laffer curve and debt crowding-out potential investments and hence leads to underdevelopment. In this study, external debt burden is captured by the stock of external debt and debt service payments.

2.1.3. 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 timely cash flows. If a country is unable to honour 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 will reduce.

2.1.4 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 & 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. In this study, economic growth is measured using gross domestic product (GDP).

2.2 Theoretical framework

This study is anchored on the debt overhang thesis and debt-cum-growth model. 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". He maintains that debt accumulation stimulates growth initially, while past debt accumulation impacts negatively on economic growth. The indirect effect works through liquidity constraint where debt service repayment reduces the amount of export earnings available for expenditures thereby impacting negatively on growth. This theory opined that external debt becomes a burden when the ratio of external debt stock to GDP, debt stock to export and debt service to GDP etc. are above their respective threshold levels.

The debt-cum-growth model on the other hand, was pioneered by Krugman (1989); Alesina and Tabellini (1989). The theory 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. Underlying this theory is the assumption that growth is necessary for poverty reduction. 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. It maintains that low debt regions have higher growth rate and lower poverty incidence. The argument implies that foreign capital inflows complement domestic savings and investment. Such foreign capital inflows help to finance a chronic shortfall of domestic savings over investment, the gap in the current account.

2.3 Review of Empirical Studies

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 variables are statistically significant. They therefore, recommended that government may consider more domestic borrowings to foreign borrowings that should only be resorted to when it is indispensable.

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 analyzed with Autoregressive Distributive Lag (ARDL) technique. Results of the study indicated that in the long-run, external debt servicing negatively affect economic growth. The study suggests that debt service requirement should not be allowed to increase above the debt stock and, the contracted loan should be devoted to infrastructural development through efficient and judicious utilization.

Folajimi, Emmanuel, Aguguom and Ademola (2022) investigated the effect of public debt management on economic growth in Nigeria. An ex-post facto research design was

employed and results revealed that public debt management had a positive significant effect on economic growth in Nigeria.

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 revealed that the variables were stationary at order zero and one, which satisfied the requirement to employ the ARDL Bounds testing approach. The ARDL Bounds test revealed the existence of long run relationship among the variables.

Oman, Al-Kharusi and Stella (2018) probed the relationship between government external borrowing and economic growth in Nigeria using data from 1990 to 2015. The study employed the Autoregressive Distributed Lag cointegration approach to ascertain the short-run dynamic nature of external debt and economic growth. The result revealed that there is negative and significant relationship between external debt and economic growth in Nigeria.

Cordelia and Ogechi (2019) studied the effect of foreign debts on the economic growth of Nigeria from1997 to 2017. The study used ordinary least squares (OLS) estimation procedure. The result revealed that foreign debt has significant and negative effect on economic growth meanwhile debt servicing obligation has significant and positive effect on real GDP growth.

2.4 Gaps in Empirical Review

Most of the reviewed studies on the impact of external debt on economic growth did not directly discuss on external debt burden and the collective effect of external debt indicators on economic growth. Rather they dwell basically on individual effect of these variables on economic growth using individual variables such as external debt service/GDP, external debt/export and external debt stock/GDP. The scope of most of the study ended before 2019. The findings of the work must have been taken by events knowing fully 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 2022 to capture the most recent issues such as the COVID-19 pandemic and its effect on external borrowing in Nigeria.

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 (ARDL) model.

3.2 Model Specification

The model for this study is anchored on the debt-cum-growth theory which upholds the positive relationship between debt and economic growth of a nation. The model for this study in its functional form is expressed as follows:

$$GDP = f(EXD, DSP, EXR, INF) \quad 1$$

The equation in 1 can also be expressed in logarithmic form as follows

$$LogGDP = \alpha 0 + \alpha_1 LogEXD + \alpha_2 LogDSP + \alpha_3 EXR + \alpha_4 INF_t \quad 2$$

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

Gross domestic product (GDP) is the best way of measuring the economic growth of a nation. It takes into account the nation's entire economic output. ***External debt*** is part of the nation's total debt that has a direct charge on government revenues. It measures a country's external indebtedness. It involves debt denominated in foreign currencies. ***Debt service payment*** is the amount required to cover the repayment of principal and interest on debt obtained by government of the country for a particular period. The government must meet debt service requirements for loans and bonds issued to the public. ***Exchange rate:*** This is the rate at which the domestic currency exchanges with the currencies of the rest of the world. ***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 was sourced from Central Bank of Nigeria annual statistical bulletin from 1981-2022.

3. 5 Estimation Procedures

3.5.1 Stationarity Test

The time series properties of the 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).

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 this analysis.

RESULTS AND DISCUSSION OF FINDINGS

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: Augmented Dickey-Fuller (ADF) Unit Root Test (at level)

Trend and Intercept

Variables	ADF Statistics	5%Critical Value	Prob. Value	Remarks
LGDP	-2.910411	-2.954021	0.0549	Not Stationary
LEXD	-2.078769	-2.954021	0.2540	Not Stationary
LDSP	-1.975591	-2.981038	0.2950	Not Stationary
EXR	-2.050720	-2.951125	0.9998	Not Stationary
INF	-4.627730	-2.976263	0.0010	Stationary

Source: Researcher's Compilation from Eview 9

Table 2: Augmented Dickey-Fuller (ADF) Unit Root Test (at First Difference)

Trend and Intercept

Variables	ADF Statistics	5%Critical Value	Prob. Value	Remarks
LGDP	-4.186750	-2.951125	0.0024	Stationary
LEXD	-4.395110	-2.954021	0.0014	Stationary
LDSP	-3.943473	-2.981038	0.0005	Stationary
EXR	-4.013827	-2.954021	0.0039	Stationary
INF	-4.627730	-2.976263	0.0010	Stationary

Source: Researcher's Compilation from Eview 9

Tables 1 and 2 symbolizes the ADF unit root test (at level and First difference) for all the variables employed in the research. From the unit root results summarized in tables 1 and 2 above, Inflation rate (INF) was indicated to be 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. In remarks, the study concludes that mixed order of integration, that is, I (0) and I (1) exist among the variables. This status of the variables, therefore, necessitated the utilization of ARDL model in estimation of the variables of the research, as suggested by Pesaran and Shin (1999).

4.2 Auto-Regressive Distributed Lag (ARDL) Results

This estimation is undertaken to investigate the effect of external debt burden on economic growth in Nigeria within the period under review. The results are presented in the tables below.

Table 3: Unrestricted ARDL Model Results

Variable	Coefficient	Std. Error	t-Statistic	Prob.*
LGDP(-1)	1.352200	0.264920	5.104176	0.0003
LGDP(-2)	0.204307	0.235337	0.868145	0.4039
LGDP(-3)	-0.627917	0.234797	-2.674303	0.0216
LEXD	0.025073	0.024002	1.044619	0.3186
LEXD(-1)	0.075818	0.036493	2.077599	0.0620
LEXD(-2)	-0.118506	0.034775	-3.407780	0.0058
LDSP	-0.146224	0.036834	-3.969864	0.0022
LDSP(-1)	0.055699	0.041707	1.335485	0.2087
LDSP(-2)	0.201756	0.048154	4.189806	0.0015
LDSP(-3)	-0.028086	0.030084	-0.933597	0.3706
EXR	-0.002407	0.000818	-2.942900	0.0134
EXR(-1)	0.003482	0.001102	3.159755	0.0091
EXR(-2)	0.000746	0.001246	0.598820	0.5614
EXR(-3)	-0.002276	0.001242	-1.832614	0.0940
INF	0.001636	0.001172	1.395490	0.1904
INF(-1)	-0.000818	0.001074	-0.762025	0.4621
INF(-2)	-0.003850	0.001422	-2.707009	0.0204
INF(-3)	-0.001083	0.000826	-1.311568	0.2164
C	0.503858	0.189522	2.658568	0.0222

*Note: p-values < 0.05 critical value indicates significance

Sources: Researcher's computation from E-view 9.0

LGDP = 0.5038 + 0.0758LEXD + 0.0556LDSP + 0.0034EXR -0.0008INF

R^2 = 0.999844; F-stat = 3923.811, and Prob(F-stat) = 0.000000, DW stat = 2.179512.

From the results of the ARDL model estimated for the relationship between external debt burden and economic growth in Nigeria, and presented in table 3, external debt (LEXD) at lag zero has a positive and insignificant effect on economic growth. At lag one, external debt (LEXD) (-1) has a positive and significant effect on economic growth while at lag two, it has a negative and significant influence on economic growth. The results also indicated that debt servicing payment (LDSP) at lag zero has a negative and significant influence on economic growth but at lag one, debt servicing payment (LDSP)(-1) has a positive and insignificant effect on economic growth. At lag two, debt servicing payment (LDSP) (-2) has a positive and significant impact on economic growth in the short-run in Nigeria.

Again, it was indicated in the results that exchange rate at lag zero has a negative and significant effect on economic growth while at lag one, it has a positive and significant impact on economic growth of Nigeria in the short-run. Though the above results involve different lags, the research only considers the lags that satisfied the objectives of this research, which either being significant or satisfies the a priori expectation of the study.

Finally, the estimated results showed that inflation rates (INF) at lag zero have a positive and insignificant effect on economic growth. At lag one, inflation rate (INF) (-1) has a negative and

insignificant influence on economic growth; while at lag two, it has negative and significant influence on economic growth.

These claims as revealed, are validated by the p-values and the coefficients of the variables estimated in the regression model. From the regression results, coefficients of LEXD, LEXD(-1), LEXD(-2), LDSP, LDSP(-1), LDSP(-2), EXR, EXR(-1), EXR(-2), INF, INF(-1), INF(-2), are 0.025073, 0.075818, -0.118506, -0.146224, 0.055699, 0.201756, -0.002407, 0.003482, 0.000746, and 0.001636, -0.000818, -0.003850, respectively; whereas their corresponding p-values include 0.3186, 0.0620, 0.0058, 0.0022, 0.2087, 0.0015, 0.0134, 0.0091, 0.5614 and 0.1904, 0.4621, 0.0204 respectively.

The results also showed a coefficient of multiple determination (R^2) value of 0.999844, which implies that 99.9 percent of the changes in the explained variable are attributed to changes in the specified independent variables while the remaining 0.1% are accounted for by other variables excluded from the specified model. The results above revealed that the independent variables are very good predicators of the dependent variable and thus, it depicts a measure of goodness of fit of the specified model.

The adjusted R^2 value of 0.999589 that is very close to the value of R^2 portrays that there are no much rooms for additional variables in the model. Thus, the present explanatory variables are capable of accounting adequately, for the changes in the explained variable. Similarly, the value of F-statistics as shown from the regression model is 3923.811 and its associated Prob(F-statistics) of 0.000000, which is less than 0.05 at 5 percent level of significance. This value implies that the independent variables have a significant joint influence on the dependent variable when considered at 0.05 critical values. More so, the Durbin-Watson statistics as showed in the estimated results (2.179512), which is approximately two digits, also shows evidence of absence of serial correlation in the model.

Table 4: ARDL Bounds Test

Null hypothesis: There is no existence of a long-run relationship

Test Statistic	Value	K
F-statistic	1.603531	4

Critical Value Bounds

Significance	I0 Bound	I1 Bound
10%	2.45	3.52
5%	2.86	4.01
2.5%	3.25	4.49
1%	3.74	5.06

*Note: F-statistic > 0.05 critical value at 11bounds indicates long-run relationship
Source: Researcher's compilation from E-view 9

The ARDL bound test is undertaken to investigate whether or not there is significant long-run association among the variables specified in the model. The test rejects the null hypothesis of no significant long-run nexus among the variables, if the F-statistic value exceeds 5 percent upper critical Bounds value. Considering the Bounds testing technique at 5 percent level of significance, the null hypothesis of no long-run association is accepted since the value of the F-statistics of 1.603531 is far below the upper critical Bounds value of 4.01. Hence, the research accepts the H_0 and infers that there is no presence of long-run equilibrium relationship among the variables in the model.

4.3. VAR Granger causality/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 5: 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

*Note: p-values < 5 percent level of significance indicates rejection of null hypothesis
Source: Researcher's compilation from E-view 9

Table 5 above represents the results of causality test for external debt burden 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, exchange rate and economic growth in Nigeria.

4.4 Test of Hypotheses

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

4.4.1 Hypothesis one

External debt has no significant impact on economic growth in Nigeria.
This hypothesis is tested through the applications of the coefficient and the p-value of external debt estimated from the ARDL results. If the p-value of the corresponding variable is statistically significant, irrespective of the sign of the coefficient or parameter at 5 percent critical value, the null hypothesis is rejected, implying that external debt burden exerts a significant influence on economic growth in Nigeria.

From tables 3 above, the coefficient of external debt at lag two is -0.118506 with the associated p-value of 0.0058. This p-value of the variable is less than 0.05 at 5% critical value. Thus, since the coefficient of the estimated variable is negative and its p-value is less than 0.05, the null hypothesis is rejected and the research concludes that external debt burden has significant effect on economic growth in Nigeria.

4.4.2 Hypothesis two

Debt service payment has no significant effect on economic growth in Nigeria
In an effort to test 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 table 3 above, the coefficient of the debt service payment at level is -0.146224 while its p-value is 0.0022, which is less than the 0.05 at 5% critical value. Since the coefficient of this variable is negative and its p-value is less than 0.05, the null hypothesis is rejected and thereby concluded that debt service payment exerts significant influence on economic growth of Nigeria.

4.4.3 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 burden and economic growth in the Nigerian economy is used. 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 granger-cause economic growth in Nigeria.

From the results presented in table 5 above, 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 accepted and the study concludes that significant causal relationship does not exist between external debt burden and economic growth in Nigeria.

4.5 Discussion of Findings

This critically dealt with the discussion of the results estimated from the econometric approaches utilized in the investigation. This is mainly to discover the quality, the importance and the condition of the estimated results. Hence, it is at this stage of research that a study can contribute to knowledge in literature. As essential as this part of the study is, the process begins with the illustration of the links and correlations apparent among the variables. Thus, the discussion of the results of this study is in accordance with the objectives of the study as presented below.

4.5.1 Empirical Result of Objective One

The objective one focused on the investigation of the significant effect of external debt and economic growth in Nigeria from 1981 to 2022. To realize this objective, the estimation results obtained through the application of the ARDL model was employed to examine the effect of the external debt and economic growth in the economy. From the result estimated, the coefficient of external debt at lag two is -0.118506 with the associated p-value of 0.0058. These results indicate that external debt at 5 percent level of significance has a significant and negative effect on economic growth. Hence, it is averagely estimated that 1% increase in the external debt will result in decrease in economic growth by 0.118506% in Nigeria.

4.5.2 Empirical Result of Objective Two

The objective two is concern with the determination of whether or not debt service payment significantly impacted on economic growth in Nigeria for the period 1981-2022. In achieving this goal, the results obtained via the ARDL model was used to investigate the influence of debt service payment on economic growth in the economy. From the results presented in tables 3, the coefficient of debt service payment is -0.146224 while its p-value is 0.0022. 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 in decline in economic growth by 0.146224 in Nigeria.

4.5.3 Empirical Result of Objective Three

This objective focuses on investigating the significant causal relationship existing between external debt and economic growth in the Nigerian economy for the period 1981-2022. To realize this goal, the Chi-square statistic and the p-value of external debt estimated using the VAR Granger causality test were employed in the investigation. From the results shown in table 5 above, 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.

4.6 Implications of Findings

The research investigated the impact of external debt burden on the growth rate in Nigeria's economy from the 1981-2022, through the application of the ARDL model. From the results, it was discovered that the external debt at lag two exerts a significant and negative effect on economic growth in Nigeria. Thus, it is averagely estimated that 1% rise in external debt would lead to decrease by 0.118506% Nigeria's economy. In the same way, the results showed that debt servicing payment has a significant and negative effect on economic growth in Nigeria. Hence, the study estimated on the average that any economic policy capable of increasing the debt servicing payment by 1%, would result in decline in economic growth by 0.146224. This negative sign is as a result of huge capital resources involved in servicing the external debt.

Furthermore, the ARDL model showed that exchange rate has a significant and positive effect on economic growth in Nigeria. Therefore, the study estimated averagely that any monetary policy which improves exchange rate appreciation by 1%, would result in increase in economic growth by 0.003482% in Nigeria. Since the ARDL bound test indicated absence of

long-run equilibrium relationship among the variables, the study ignores the long-run effect but focused on the short run coefficient sign of the variable. In the same vein, the results revealed that external debt has a no significant causal relationship with economic growth in Nigeria.

Conclusion and Recommendations

The study empirically investigated the impact of external debt burden on economic growth in Nigeria for the period 1981-2022. Unit root test and ARDL method of analysis are employed in the analysis. The variables specified in the model include gross domestic product, external debt, debt servicing payment, exchange rate and inflation rate; these variables have different order of integration ranging from zero and one, which led to the application of ARDL. The results of the ARDL model showed the absence of equilibrium long-run cointegrating equations of the variables used in the research. However, the estimated short run results showed that external debt at lag two has a significant and negative influence on economic growth in Nigeria. The analysis also discovered that debt service payment has a negative and significant impact on economic growth in Nigeria. Furthermore, the ARDL model showed that exchange rate has a significant and positive effect on economic growth in Nigeria. Therefore, the study estimated averagely that any monetary policy which improves exchange rate appreciation by 1%, would result in increase in economic growth by 0.003482% in Nigeria. The results further revealed that inflation rate exerts a positive and insignificant effect on economic growth. Hence, the study maintains that the monetary authority should intensify its policy measures in formulating and implementing exchange rate policies that target improved exports of the nation. This can be done by encouraging low interest loans, massive production of oil and non-oil products such as agricultural products, agro-allied industries, small and medium scale industries; as well as promote production of oil domestically and exports same for foreign consumption.

The government should restructure her external debt management by increasing the debt expenditure to capital project that can easily translate to economic growth and development. Debt management office should put up strategies like debt renegotiation, avoid increase in borrowing, offset debt just to address debt servicing and reduce pressure on economic operations. 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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