Public Debt and Economic Growth in Nigeria

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Abstract
The study strives to examine the effect of public debt on the economic growth of Nigeria spanning from 1990 to 2022 with emphasis on the effect of domestic debt, external debt and domestic servicing. The model built for the study proxy gross domestic product as the endogenous variable measuring economic growth. Secondary data were collected from Central bank of Nigeria Statistical Bulletin, National Bureau of Statistics (NBS) and Debt Management Office (DMO) from 1990 to 2022. The regression technique anchored on Ordinary Least Square (OLS) was employed in the empirical analysis. The co-integration test shows that long-run equilibrium relationship exist among the variables. The findings showed that domestic debt has a negative and significant effect on economic growth. External debt has a positive and significant effect on economic growth while debt servicing has a negative and significant effect on economic growth. The implication of the findings is that proper application of public debt will encourage economic growth. The study recommends that government should acquire external debt largely for economic reasons rather than social or political reasons and ensure such debts are properly utilized for what they are meant for. It also recommends that government should service their debt as when due to avoid unnecessary accumulation of debt.
***Keywords:*** *domestic debt, external debt, debt servicing, economic growth*

I.   Introduction
The need to finance critical infrastructure and various development projects in the face of limited resources emanating from low savings, is the major reason nations borrow. Nigeria has relied on one major income stream (crude oil) and borrowing to finance its operations, (Kenneth, 2022). The limited success in the past to grow non-oil income is evident in Nigeria susceptibility to volatilities in crude oil prices and production as well as its low revenue to GDP ratio. Government developmental activities and polices have attendant financial implications (Sani, &Nwite, 2021).Public debt exert direct and negative consequences on fiscal sustainability and it remains essential factor in accessing macroeconomic policies credibility (CNB,
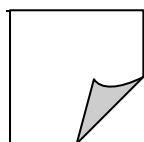
2022).Countries have experienced a significant worsening in their fiscal balance and dramatic growth in their public debt, which have put them at risk of debt distress,(Akabueze,2018)

The total debt stock is made up of domestic and external debt (Khan et al, 2014). However, Nigeria's debt is include the debt of ones owed by the state, including the Federal Capital Territory and the Federal Government. Various states contribute immensely to the national debt stock. Nigeria's total public debt stock rose from N39.56 trillion in December, 2021 to N41.60 trillion, $100.07 billion in the first three months of 2022 January to March (Oniha, 2022). The total public debt stock included new domestic borrowing by the Federal Government of Nigeria to partly finance the deficit in the 2022 Appropriation Act, the $1.25 billion Eurobond issued in March 2022 and disbursements by multilateral and bilateral lenders.

Nigeria's high debt profile are caused by lack of revenue and approval of annual budget with deficit by the National Assembly which increased the total debt stock of the country (Oniha, 2022). Nigeria has been running on budget deficit for many years which in turn affects its revenue profile (Oniha, 2022). The issue of borrowing will still be a recurring decimal until the issues of personal overheads and capital expenditure are properly addressed in the budget. Debt growth has majorly been from annual budget. The budget deficit approval, state borrowings and increased debt service have increased the countries debt profile. World bank report showed that in terms of debt to GDP rate, Nigeria is low, but for debt service-to-revenue ratio, Nigeria is very high (CBN, 2021). Our tax-to-GDP ratio is very low and this is one of the major causes of Nigeria's high debt profile.

Of course, over the years Nigeria has heavily relied on public debt in order to accelerate economic growth but on the contrary the economic growth is still staggering and the public debt has gone beyond acceptable level. While Nigeria keeps spending a reasonable percentage of her revenue to service debt yearly and borrowing money to finance capital projects in its perpetual budget deficits there are no visible railways, roads, air ports, hospitals and other critical infrastructures to show for the high debt servicing (Akabueze, 2018). Rising debt profile is capable of reducing business investment and economic growth.Excessive borrowing brings about high interest rate which affect economic growth most especially in the long run (Ezike and Mojekwu, 2011). In a bid to achieve higher gross domestic product, Nigeria has borrowed heavily from both domestic and external sources but its contribution to GDP remains a mirage, thus, this study.

Broadly, this study set out to ascertain the effect of public debt on economic growth in Nigeria between the period of 1990 and 2022. Specifically, the objectives were todetermine the effect of; domestic debt, external debt and debt servicing on economic growth in Nigeria.

In light of the above objectives, the following research hypotheseswere stated and tested:
$H0_1$: There is no significant relationship between domestic debt and economic growth in Nigeria.
$H0_2$: External debt has no significant relationship with economic growth in Nigeria.
$H0_3$: There is no significant relationship between debt servicing and economic growth in Nigeria.

Meanwhile, the studyis targeted at providing both researchers and non-researchers (government and the general public) with the effect of public debt on the economy. The knowledge of the effect of public debt will assist in proper planningfor future governmental policies on debt minimization and control.

It would also serve as a veritable source of reference for researchers and students of both management and social sciences.Thus, researchers and students will always find this research as aguide to their future researches. The study would also be helpful to citizens, informing them of how public debt will improve output and standard of living.

The study particularly focused on the effect of public debt on economic growth in Nigeria covering a period between 1990 and 2022 of. This period covers the time Nigeria relied so heavily on public debt to finance her policies and programmes. Within this period, Nigeria embarked on large scale developmental projects that the resources within its disposal could not carry, hence they resort to heavy borrowing.

II.   Review Of Related Literature
Domestic Debt and Nigeria's Economic Growth

Since early 1980s, the ratio of domestic government debt to gross domestic product (GDP) in Nigeria has risen astronomical. By 1964, the level of domestic debt was 5.5 percent of GDP. A decade later, by 1974, this ratio went up slightly to 6.9 percent of GDP. By 1984, the domestic debt/GDP ratio was over 40 percent. Although it declined slightly in the 1990s, it has since 2000 moved upwards (Robert and Charles, 2018). The current build-up of domestic debt has become central policy issue, particularly for Nigeria and most sub-Saharan African Countries (AFDB, 2013).

Domestic borrowing has become more appealing to governments in recent years (Hanson, 2007). The reform in financial system, particularly, the establishment of the Debt Management Office (DMO) in 2000 and launch of a new fully funded pension fund scheme in Nigeria in 2004, a number of non-bank players entered the system (DMO, 2014). This may also have resulted in a resurgence of domestic debt market activity in the
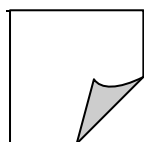
country. Takashima, Kato and Ogibayashi (2014) suggest that domestic debt is a strategy for firm financing, although more viable through the stock market than bank financing. High volume of debt could lead to severe implication for long-term growth (Gale&Orszag, 2013).

External Debts and Nigeria's Economic Growth

All the countries in the world aim at achieving economic growth and development. This could be achievedif a country has enough and adequate resources. Most developing countries of the world lack the resources to finance the optimal level of economic growth which is a result of low domestic savings, low tax revenue, low productivity and low foreign exchange earnings (Sola, 2013). For the above mentioned reason, many developing countries like Nigeria yearning for economic growth inevitably resort to external financing to bridge the gap between their savings and investment (Sola, 2013).

According to CBN (2018), foreign debts or external borrowing are debt obligation the government owe to multilateral bodies, such as London club, Paris club, foreign promissory notes and other unclassified external barrowings. They are so many ways in which external debt could be incurred, they include supplies credit, contractor, finance, private investment and public borrowing (Anisiobi, 2021). While the share of loans from bilateral and multilateral sources upped considerably. Nigeria external debt rose to $18.91 billion (N5.787 trillion) as at the end of December 2017, while domestic debt rose to N15.937 trillion, bringing the total debt stock of the country to N21.725 trillion ($70.92 billion). By 2021, Nigeria external debt stock was $40.06 billion (16.61 trillion) as at June 30, 2022, which was about the same level as the figure for March 31, 2022 which stood at $39.96 billion (16.61 trillion).

Debt Servicing and Nigeria's Economic Growth

Debt servicing is the payment of interest accruing to a borrowed fund (Ufoma, 2017). The fact that government spends its entire revenue to service debt, despite introducing new taxes and raising rates in some others, is an indication that economic agents are not generating enough outputs, sufficient to put Nigeria's economy in the positive territory. It is a sign of declining output and a failure of fiscal policy. The international creditors like the World Bank lure Nigeria into more loans borrowing because of what they get from it as their service charges. This service charges grow higher than the actual borrowed amount, while Nigeria suffer huge capital flight through annual debt servicing (Adofu and Abula 2012).
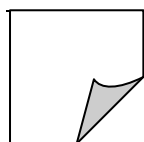
Economic Growth

Economic growth describes the increase of the country's national output or gross domestic product. Economic growth has over time been regarded as an all- important goal of economic policy with a robust study occasioned to clarify how this aforesaid goal can be attained (Sulaiman and Azeez, 2012). Classical studies affirm that economic growth isdependent on labour and capital as factor of production (Khorravi and Karimi, 2010). Ajayi and Adewusi (2020) assert that a growth is achieved in the economy whenever a unit of production is successfully inputted into the economic system.

Empirical Review

A number of empirical studies has been reviewed to support the outcome of the hypotheses test results. Some of which showed mixed results as shown below.

For instance, Okorie and Cookey (2020) evaluated domestic debt structure and economic growth in Nigeria. The main objective of the study was to examine the impact of public debt structure on Nigeria's economic growth.The study used secondary data collected from the Central Bank of Nigeria Statistical Bulletin and the World Bank Economic Development Index (WDI). The study used e-view to analyze the data collected. The results showed that there is long run relationship among the variables. Findings revealed that development stock had negative, but significant relationship with economic growth. Treasury bond impact on the economic growth was positive, but also insignificant, it was therefore recommended that government diversify the economy to reduce debt burden on economic growth.

In the same vein, Ajayi and Edewusi (2020) examined the effect of government debt on economic growth of Nigeria. An empirical investigation. The main objectives of the study are to determine the impact of domestic debt on the economic growth of Nigeria; assess the effect of external debt on the economic growth of Nigeria and analyze the relationship of public debt and the economic growth of Nigeria. Secondary time series data spanning thirty seven years (1982-2018) was gathered in the study. The data was analyzed using e-view. Findings from the study suggests 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. Based on these findings, the study suggested that policy riskers should integrate appropriate measures towards ensuring suitable management of domestic debt.

Akgba and Eferakeya (2019) investigated the impact of public debt on economic growth of Nigeria. The main objective of the study was to examine the effect of public debt on economic growth of Nigeria. The study used secondary data from Central Bank of Nigeria statistical bulletin and Debt Management Office. The data was analyzed using econometric view. The findings of the study showed that domestic debt of the Federal government of Nigeria is positive and statistically significant to economic growth of Nigeria while external debts contribute less to the economic growth of the country. Cost of debt servicing is significant and has a negative effect on economic growth. The study recommended that federal government should always channel public debts on productive ventures and capital projects.

Izuchukwu, Peters, & Obinna (2022) examined the influence of government debt on economic growth of Nigeria. The main objective of the study was to examine the effect of public debt on economic growth of Nigeria. Secondary data was used in the study. Ex-post facto research design was adopted, the research employed Ordinary Least Square analytical method. The findings of the study revealed that external debt had a positive and significant relationship worth the real gross product growth rate and external debt. The study therefore, recommended that government should professionally manage the nations rising debt profile so as to avoid future debt trap. They should influence increase in local productivities and access to local financial facilities more.

Theoretical Framework

This study is anchored on the Dual Gap Theory. This theory was propounded by Harod-Domar in 1946. The theory provides the framework that development is dependent upon two crucial factors, namely domestic saving rate and capital-output ratio. Dual gap theory was made in the context of foreign aid or borrowing of capital by developing countries required for achieving rapid economic growth. This foreign aid or borrowing was as a result of insufficient domestic savings.The basic underlying assumption of dual-gap theory is a lack of sustainability between foreign and domestic resources. It is this lack of sustainability that creates shortfall and makes nations to borrow to finance their expenditure. The dual-gap theory was coined from a national income accounting identity which implies that excess investment expenditure (investment-saving gap) is equivalent to the surplus of import over export (foreign exchange gap).Omoniyi (2005) stated that most economies have experienced shortfall in trying to bridge the gap between the levels of savings and investment and have resorted to external borrowing in order to fill the gap.

Gap in Literature

Basedon the literature review, the following gaps have been identified. Firstly, most research work on the effect of public debt on economic growth of Nigeria stopped in 2020. Between 2020 to date, a lot of debt has been acquired, changing the narrative of Nigeria debt history.

Secondly, most research work on the effect of public debt on economic growth of Nigerian adopted mainly two theoretical approaches; Keynesian theory and Ricardian equivalence theorem. To close these gaps, this study extended its coverage to 2022. The study went further to adopt Dual Gap Theory as against the two theoretical approaches normally used. Despite the wide variety (mainly empirical) explanations and insight on the debt-growth nexus, no unified theoretical proposal has been reached yet (tamborini and Tomasethi, 2020).

III.   Methodology

Ex-post facto research design was adopted in carrying out the research. *Ex-post facto* is an offshoot of experimental research design. Kerlinger (1970) states *ex-post facto* research more formally as that in which the independent variable(s) have already occurred in which the researcher starts with the observation of a dependent variable(s), the researcher then studies the independent variables in retrospect to their possible relationship and effect on the dependent variable(s).

This study used secondary data sourced from Central Bank of Nigeria Statistical Bulletin, National Bureau of Statistics (NBS) and Debt Management Office (DMO). Data were also extracted from World Bank Database. The data generated was estimated using regression technique, with aid of E-view 9.0 econometric software. Various statistical tests were conducted.

Model of Specification

Generally,multiple regression Model is used and specified as follows

$Y \quad = \quad F(X_1, X_2, X_3 \ldots X_n)$

To empirically investigate the relationship between Real Gross Domestic Product (RGDP) and Public Debt proxy by the various variables; domestic debt (DDEBT), external debt (EXTDEBT) usedand Debt servicing (DEBTSERV), we hypothesized that real gross domestic product depend behaviorally on public debt. Thus, such behavioral relationship can be given in the equation below

$GDP = B_0 + B_1 DDEBT + B_2 EXTDEBT + B_3 DEBTSERV + Uit$ ……………………… (1)
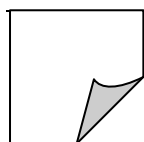
Where

RGDP	=	Real Gross Domestic Product
B_0	=	Intercept or average RGDP when other variables are not applied.
B_1	=	Coefficient of explanatory variable DDEBT
B_2	=	Coefficient of explanatory variable EXTDEBT
B_3	=	Coefficient of explanatory variable DEBTSERV
DDEBT =		Domestic debt
EXTDEBT	=	External debt
DEBTSERV	=	Debt servicing
Uit	=	is the Gaussian White noise

In a bid to accomplish this task of measurement, real gross domestic product (RGDP) was made measurable using elements such as domestic debt, external debt and debt servicing. Data for measuring the variables were generated through Central Bank of Nigeria (CBN), National Bureau of Statistic (NBS) and Debt Management Office (DMO). In the same vein, data for independent (predictor) variable measurement were garnered from the same source of the dependent (criterion) variables.

IV. Results

The Descriptive statistics test was carried out to examine the characteristics of the dependent and independent variables. The descriptive result is presented in the table 1 below.

Table 1: Descriptive statistics result

	LRGDP	LDDEBT	LDEBTSERV	LEXTDEBT
Mean	9.643798	7.603305	5.667585	7.497575
Median	10.33294	7.469232	5.895807	7.235136
Maximum	14.49457	9.874703	8.334176	10.58133
Minimum	5.978696	4.431888	2.965788	5.699138
Std. Dev.	2.323545	1.566060	1.593315	1.366818
Skewness	-0.208891	-0.214033	0.013480	0.809615
Kurtosis	1.960180	2.003830	1.947250	2.831197
Jarque-Bera	1.726682	1.616443	1.524889	3.644297
Probability	0.421751	0.445650	0.466525	0.161678
Sum	318.2453	250.9091	187.0303	247.4200
Sum Sq. Dev.	172.7635	78.48136	81.23693	59.78216
Observations	33	33	33	33

Sources: Descriptive Analysis, 2023 From E-view 9.0 version

Table 1 above shows the descriptive statistical analysis for the dependent and independent variables. The mean is the average value of the series which is determined by dividing the total value of the series by the number of observations. The average percentage of Real Gross Domestic Product (RGDP) within the period under review stood at 76.4. This indicates that the volume of Real Gross Domestic Product in Nigeria is low. Other indicators followed the same pattern as shown on the table above.

The average percentage of domestic debt (LDDEBT) within the period under review stood at 7.6. This indicates that the volume of domestic debt in Nigeria is low. Other indicators followed the same pattern as shown on the table above. In the same vein, the average percentage of debt servicing (LDEBTSERV) within the period under review stood at 56.7. This indicates that the volume of public debt service in Nigeria is high. Other indicators followed the same pattern as shown on the table above.

The average percentage of external debt (LEXTDEBT) within the period under review stood at 7.49. This indicates that the volume of External debt in Nigeria is high. Other indicators followed the same pattern as shown on the table above.

Table 2: Unit Root Test Results.

Variable	Level				1st Difference				Order of integ
	ADF Statistic	5% Crit value	P-value	Remark	ADF Statistic	5% Critical value	P-value	Remark	
LDDEBT	-2.7961	-2.9571	0.0701	Non-stationary	-3.4651	-2.9604	0.0160	Stationary	I(1)
LDEBTSEV	-0.7127	-2.9571	0.8294	Non-stationary	-8.3262	-2.9604	0.000	Stationary	I(1)

LEXTDEBT	-0.1960	-2.9571	0.9292	Non-stationary	-4.1346	-2.9604	0.0031	Stationary	I(1)
LRGDP	0.2584	-2.9571	0.9722	Non-stationary	-3.4743	-2.9604	0.0157	Stationary	I(1)

Source: Author's computation 2023 using E-views 9

From Table 2 above, the result reveals that none of the variables was stationary at level because at this point, the ADF statistics were less than the 5% critical values in absolute terms, and their p-values were each greater than 0.05. At first difference though, all the variables became stationary following the decision criteria set out above. As indicated in the last column of the table, the variables were each integrated of order one (1), that is, I(1); hence they have the same order of integration. Consequently, Johansen cointegration method was employed to test for the existence of cointegration or long-run relationship among the variables of the study model.

From the summary of the result of Johansen cointegration test, the Trace test indicated the existence of 1 cointegrating equations among the variables of the model at the 5% level of significance while the Max-eigen value test indicated the existence of 2 cointegrating equation at the same level of significance. Both results suggest that the factors in the study have a long-term relationship. In view of the fact that the variables are cointegrated, the study used the vector error correction mechanism (VECM) to estimate the short- and long-run impact of public debt on Nigerian economic growth in order to determine how quickly the short-run connection adjusts.

However, the presence of cointegrating equations implies that the connection between the dependent and independent variables is subject to short-term volatility. In order to smoothen out these fluctuations, the vector error correction model (VECM) was employed. This process is meant to tie the short-run dynamics of the co-integrating equations to their long-run static dispositions. The result is presented in Table 3 below.

Table 3: Summary of VECM Result

Independent variables	ECT	LDDEBT	LDEBTSERV	LEXTDEBT	CONSTANT
Regression coefficients	N/A	-17.31331	-17.7348	7.28260	76.4107
T-statistics		-4.9790	-4.4712	4.8941	N/A
Regression coefficients	-0.04873	-0.7726	-0.31833	0.39511	310934.6
T-statistics	-3.1626	-1.4681	-1.3025	1.5738	0.907925
P-values	0.0041	0.0128	0.0046	0.0214	0.0041

Source: Researcher's computations 2023 from E-Views

The upper panel of Table 3 shows the long-run relationship while the short-run relationship is shown in the lower panel. As for the long-run, the result shows that the regression coefficient of Domestic Debt (LDDEB) is about -17.31331 with T-statistic -4.9790 which suggests that the variable has a negative effect on the dependent variable, Real Gross Domestic Product (RGDP), in the long run. Likewise, the regression coefficient of Debt Servicing (DEBTSER) is about -17.7348 with T-statistic -4.4712 which suggests that the variable has a negative effect on the dependent variable, Real Gross Domestic Product (RGDP) in the long run. In different vein, the regression coefficient of External Debt (EXTDEB) is about 7.28260 with T-statistic 4.8941 which suggests that the variable has a positive effect on the dependent variable.

For the short-run relationship, the study transformed the regression into system format which was estimated by Ordinary Least Squares (OLS) so as to obtain relevant statistics of the result such as the p-values which the VECM method did not contain. It should be noted that short-run, as used in this study, refers to not-very-long a time. The short-run result shows that the regression coefficient of the error correction term (ECT) is -0.0487 with T-Statistics -3.1626 and P-value 0.0041. It is the speed of adjustment of the estimated relationship from the short-run to the long-run. The result is interpreted to mean that about 5% of the errors arising from disequilibrium in the previous period are corrected in the current period. Thus, the relationship is expected to return to steady-state or stable condition within few years. The p-value (less than 0.05) indicates that the result is statistically significant at the 5% level of significance. In conclusion, the speed of adjustment is no doubt fast enough to ensure a return to equilibrium as quickly as possible.

The result further shows that the regression coefficient of Domestic Debt (LDDEB) is -0.7726with T-statistic -1.4681 and p-value 0.0128. This is considered to suggest that the Nigerian Real Gross Domestic Product (RGDP) and Domestic Debt (LDDEB) have a negative connection, with a 8% rise in LDDEB having a negative impact on REALGDP. The p-value (less than 0.05) and T-statistic (less than 2.0 in absolute terms) imply that the result is statistically significant. The regression coefficient for Debt Servicing (DEBTSERV) is -
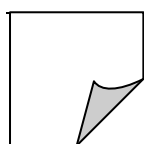
0.31833, with a T-statistic of -1.3025 and a p-value of 0.0046. This shows that the Real Gross Domestic Product (REALGDP) and Debt Servicing (DEBTSERV) have a negative relationship, with a 1% increase in DEBTSERV putting downward pressure on LRGDP. The T-statistic (less than 2.0) and the p-value (Less than 0.05) indicate that the result is statistically significant at the 5% level of significance.

Conversely, the regression coefficient of the External Debt (EXTDEBT) is 0.39511 with T-statistic 1.5738 and p-value 0.0214. This suggests that there is a positive relationship between Real Gross Domestic Product (REALGDP) and External Debt (EXTDEBT) such that a 1% increase in the latter would result in positive rise in REALGDP. The T-statistic (less than 2.0) and the p-value (less than 0.05) indicate that the result is statistically significant at the 5% level of significance.

Going by the regression result in Table 3, the results of the long-run effects of LDDEB, LDEBTSERV, and LEXTDEBT are statistically significant at the 5% level. Likewise, the short-run results, LDDEB, LDEBTSERV, and LEXTDEBT are statistically significant at the 5% level. Also, the result shows an estimated F-statistic of about 12.6982with p-value of0.004402 Since the p-value is less than 0.05, the conclusion is that the joint impact of public debt(LDDEB, LDEBTSERV, and LEXTDEBT on the dependent variable economic growth (LRGDP) is statistically significant at the 5% level.

Durbin-Watson (DW) method was used to test for autocorrelation. The result shows that the estimated Durbin-Watson statistic is 1.9 approximately. Using 5% level of significance, and given the 3 explanatory variables (excluding the constant term) and 31 observations (after adjustment) of the study, the tabulated Durbin-Watson statistics for the lower and upper limits are $D_L = 0.75$ and $D_U = 2.02$ respectively. The Decision Rule is as follows: If DW* < D_L: autocorrelation is present in the estimated model (where DW* is the estimated Durbin-Watson statistic); If DW* > D_U: there is no autocorrelation in the model; If D_L< DW* < D_U: there is inconclusive evidence as to whether autocorrelation is present in the estimated model; hence an additional test would be required to decide. Following the decision rule, the regression result shows that DW* = 1.6. The third condition is observed here, that is, D_L< DW* < D_U, which translates into 0.75 < 1.6 < 2.02. This leads to the conclusion that there is inconclusive evidence as to whether autocorrelation is present in the estimated model. The study therefore resorted to the serial correlation LM test in order to determine whether autocorrelation is present in the estimated model.

Table 4: Breusch-Godfery Serial Correlation LM Test

F-statistic	4.546659	Prob. F(2,15)	0.2861
Obs*R-squared	9.058098	Prob. Chi-Square(2)	0.1080

Source: Researcher's Computations 2023 from EViews 9

The null hypothesis being tested is that there is no serial correlation in the estimated system least squares result under reference. The decision rule is as follows: reject the null hypothesis if the p-value of the F-statistic is less than 0.05; otherwise uphold. Going by the result on table 6 above, we observe that the concerned p-value is 0.2861. Guided by the stated decision rule, we upheld the null hypothesis given that the p-value is greater than 0.05. Accordingly, we conclude that there is no serial correlation in the estimated system least squares result under consideration. The absence of positive serial correlation suggests no autocorrelation, that is, the error terms of successive periods are serially independent. This satisfies the relevant assumption of the OLS regression method. The implication is that the estimated model is reliable for predictor purpose.

(b)   Test for normality of distribution of the regression residuals

This test was performed to ascertain whether the regression residuals are normally distributed. The test matches the skewness and kurtosis of data to see if it matches a normal distribution. A normal distribution has a skew of zero (i.e. it is perfectly symmetrical around the mean) and a kurtosis of 3. Kurtosis tells us how much data is in the tails and gives one an idea about how "peaked" the distribution is. In general, a large J-B value indicates that errors are **not** normally distributed. The decision rule is that if the J-B statistic is very low and the p-value of the J-B statistic is less than 0.05 then we conclude that the errors are not normally distributed; otherwise conclude that the errors are normally distributed. In the present study, the joint J-B statistic is about 8.77 and its p-value is about 0.55 as shown in the appendix. Thus, since the p-value is greater than 0.05, we accept the null hypothesis and conclude that the regression residuals are normally distributed at the 5% level of significance.

Test of Research Hypotheses

The parameter estimates and their probability values were considered at 5% level of significance. If the probability value of the parameter estimate is larger than 0.05, the decision criterion was to accept the null

hypothesis and reject the alternate hypothesis. Table 3 was used to test the hypotheses (Summary of VECM Result).

Hypothesis One
H_0:There is no significant effect of domestic debt on Nigerian Economic Growth
         The coefficients of of Domestic Debt (LDDEBT**),** both long-run (-17.31331) and short-run (-0.7726), reveal inverse associations with a p-value of 0.0128, according to the regression (VECM) result provided in table 3. LDDEBT is a negative and significant statistics in evaluating real gross domestic product (LRGDP), as evidenced by its P-value. The analysis confirmed the null hypothesis and concluded that the Domestic Debt had meaningful effect on economic growth in Nigeria because the level of significance is greater than the P-value [0.0128].

Hypothesis Two
H_0: External debt does not have any relationship with Nigeria Economic Growth
         The coefficients of External Debt (EXTDEBT), both long-run (7.28260) and short-run (0.39511), reveal positive associations with a p-value of 0.0214, according to the estimation (VECM) result shown in table 3, EXTDEBT is a positive and significant statistic in evaluating real gross domestic product (LRGDP), as evidenced by its P-value. Considering that the null hypothesis was rejected and the P-value [0.0214] was less than 5% (0.05), the study sustained the null hypothesis and concluded that the public external debt have meaningful effect on economic growth in Nigeria.

Hypothesis Three
H_0: There is no significant effect of Debt Service on Nigerian Economic Growth
         The coefficients of Debt Service(DEBTSERV), both long-run (-17.7348) and short run (-0.31833), reveal inverse associations with a p-value of 0.0046. Based on the regression (VECM) result shown in table 3, LDEBTSERV is a negative and a significant parameter in assessing real gross domestic product (LRGDP) as evidenced by its P-value. The analysis rejected the null hypothesis and concluded that the Debt Service(LDEBTSERV) has meaningful effect on economic growth in Nigeria because the threshold of significance is greater than the P-value [0.0046].

V.   Summary, Conclusion, And Recommendations
Based on the test of the hypotheses, the following findings were made
1. Domestic debt has a negative and significant effect on real gross domestic product (RGDP)in Nigeria. On the relationship between domestic debt and economic growth, the study established domestic debt, both long-run (-17.3133) and short-run (-0.7726) and T-statistic -4.9790 has a negative effect on economic growth (real gross domestic product). The result of the long-run effect of DDEBT is statistically significant at the 5% level.
2. External debt has a positive and significant effect on real gross domestic product (RGDP) in Nigeria. On the relationship between external debt and economic growth, the study established the regression coefficient of external debt is 7.28260 with T-statistic 4.8941 which suggest that external debt has a positive and significant effect on economic growth (real gross domestic product). The result of the long-run effect of external debt is statistically significant at the 5% level.
3. Debt servicing has a negative and significant effect on real gross domestic product ((RGDP) in Nigeria. On the relationship between debt servicing and economic growth, the study established the regression coefficient for debt servicing is -0.31833, with a T-statistic of -1.3025 and a p-value of 0.0046. This shows that real gross domestic product (RGDP) and debt servicing (BEBTSERV) have a negative and significant relationship.

Conclusion
         The study investigate the effect of public debt on economic growth of Nigeria spanning from 1990 to 2022. Secondary data were collected and analyzed with econometric Ordinary Least Square method. Conclusions were drawn from the results as follows.
         There is a negative and significant effect of domestic debt on Real Gross Domestic Product (RGDP) in Nigeria between the periods under study. There is a positive and significant effect of external debt on Real Gross Domestic Product (RGDP) between the periods under study. There is a negative and significant effect of Debt Servicing on Real Gross Domestic Product (RGDP) in Nigeria between the periods under study.

Recommendations
Based on the findings of the study, the following recommendations were made by the researcher.
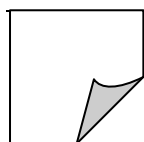
i. Domestic debt should be used mainly for productive ventures that will generate high return on investment because of the associated high interest rate.

ii. Government should acquire external debt largely for economic reasons rather than social or political reasons and ensure such debt are used for what they are meant for.

iii. Government should ensure they service their debt as at when due to avoid unnecessary accumulation of debt.

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