Effects of Domestic Debt Securities on Economic Growth in Nigeria

*Ukeje Chiemezie Desmond, Nwachukwu Fortune Ihuoma & Nwachukwu Edwin Udochukwu

Department of Economics, Nnamdi Azikiwe University Awka

*Corresponding Author

ABSTRACT

Debt is considered beneficial for economic growth due to its overriding impact on savings, investment, financial deepening, and institutions. However, despite the fact that studies that attempted to examine the effect of domestic debt securities on economic growth in Nigeria have proliferated in recent years, only a handful has been able to measure individually the impact of the various debt securities on economic growth in developing countries. It is against this backdrop that this study is undertaken to determine the effect of debt securities on economic growth in Nigeria. The study used time series data covering a period of 22 years (1999-2021) and employed the Auto regressive distributive lag (ARDL) technique to empirically study the effect of the treasury bills, treasury bonds, government bonds and promissory notes on economic growth in Nigeria. The data used for the analysis were sourced from the World Development Indicators (2021) and CBN Statistical Bulletin (2021). The findings revealed that treasury bills, treasury bonds, government bonds and promissory notes all had positive effects on economic growth in Nigeria both in the short and long run. Therefore, the study recommends for consistent implementation of wider monetary policy reforms that promises assured returns and stability of funds to investors in order to promote investment in these instruments. Institutions such as SEC, Pension funds, Insurance companies, should be encouraged to invest in the listed instruments.

Keywords: Domestic, Debt, Securities, Economic growth

INTRODUCTION

One of the key macroeconomic objectives of a nation is the achievement of sustainable economic growth. According to Simon Kuznets (1999), a country achieves economic growth when there is a long term rise in her capacity to supply increasingly diverse economic goods to its population, based on advancing technology and the institutional and ideological adjustments that it demands. Economic growth is considered the process through which an economy expands over time, leading to an increase in the value of goods and services produced. A country's economic growth is usually indicated by an increase in her gross domestic product. It further brings about unique social shifts by generating new economic opportunities and possibilities, new ways of thinking and new technologies.

Prior to the start of the new millennium, Sub-Saharan Africa had sustained rapid economic growth and investment, little wonder some experts dubbed the period as Africa Rising. Unfortunately, this pace of growth was not sustained due to the global financial crisis in 2008, poor infrastructure, lack of access to capital, and more. According to the World Bank report (2022), Sub-Saharan Africa's economic growth dropped to 3.6% in 2022 from 4.1% in 2021 and further expected to dip to 3.1% in 2023. Global economic sluggishness, lingering inflation, and tough financial conditions with high debt have continued to contribute to this decline. For developing countries in the Sub-Saharan Africa, achieving economic growth is very essential as it will enable such countries escape worse levels of poverty and improve the standard of living of her citizens.

Despite Nigeria's economic drive, her economic potentials have been constrained by so many structural issues. Amongst these economic constraints include inflation, lack of skilled human resources, inefficient utilization of natural resources, low level of capital formation, low level of technological development and

enhancement, and the unproductive public debt burden. Ideally, the justification for public borrowing has its foundation in the neoclassical growth models, which prescribes the need for capital scarce countries to borrow to increase their capital accumulation and maintain a steady state of output. Debt securities help to smoothen and hide fiscal deficits. This could spice up investments and accelerate economic growth and development. By so doing, the economy is expected to grow and bring about a timely settlement of debts so incurred. Another reason a country may need to borrow is to cover budget deficits. Whenever the income of the government falls short of its expenditure on account of increased administrative expenditure or to meet unforeseen contingencies like floods, famines, earthquakes, epidemics etc., the government may borrow money from internal and external sources.

Statistically, Nigeria's debt profile has maintained a persistent rise in the face of fluctuating economic growth rate (CBN, 2022). This is shown in the graph below;

**Fig 1.1 Nigeria's domestic and external debt ((?' Billion)**
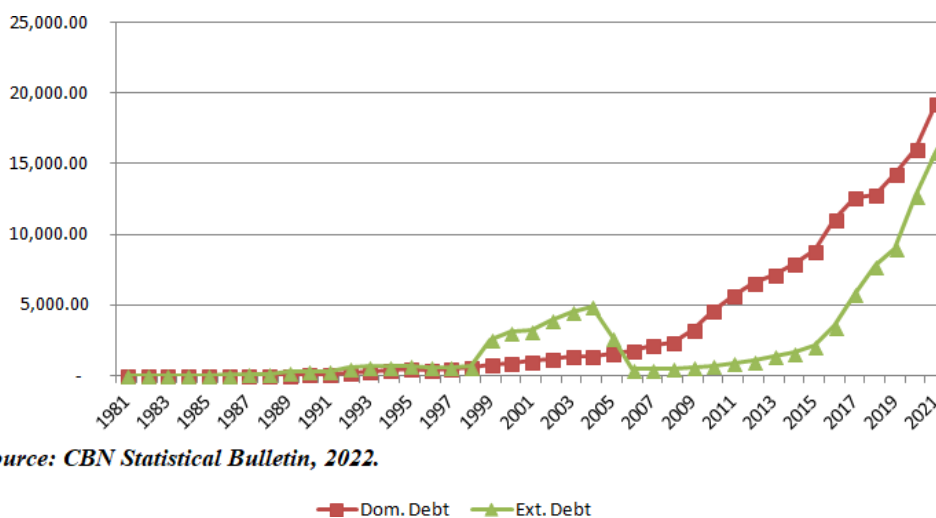
Source: CBN Statistical Bulletin, 2022.

Source: CBN Statistical Bulletin, 2022.

Domestic debt maintained a sharp increase between 2009 and 2021 averaging ?10544.45billion with the period. On the other hand, external debt leapfrogged between 2015 till date, few years after the US$18 billion debt relief package from Paris club.

Fig 1.2 Nigeria's growth rate (%)
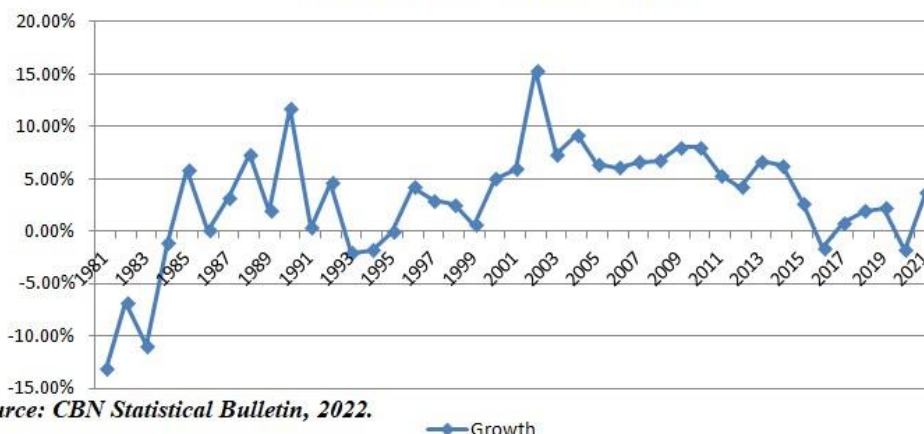
Source: CBN Statistical Bulletin, 2022.

Source: CBN Statistical Bulletin, 2022.

Unfortunately, these humongous debts have not produced significant results when it is compared to the country's growth rate which has continued to fluctuate. Sadly, close to 100 per cent of Nigeria's revenue is allocated to debt servicing and refinancing, a situation considered as a sign of distress. This has raised questions on the choice between external and domestic debt in financing budget deficits. While some empirical findings suggest that highly concessional external debt is usually a superior choice to domestic debt in terms of financial costs and risks (Beaugrand, Loko & Mlachila, 2002), domestic debt could be more efficient for developing countries as such countries can borrow domestically at manageable interest rates because it can tap demand from a large domestic institutional investor base even in the face of global exchange rate fluctuation. It is also denominated in the domestic currency and hence may count on a more stable investor base.

In the light of the foregoing, this study will investigate the effects of domestic debt securities on economic growth in Nigeria. Specifically, the study will examine the effects of treasury bills, treasury bonds, government bonds and promissory notes on Nigeria's real gross domestic product.

THEORETICAL LITERATURE REVIEW

Conceptual Literature: Economic growth and Debt securities

Economic growth refers to the increase in the capacity of an economy to produce goods and services, compared from one period to another. Todaro (1995) citing Kuznets defined a country's economic growth as a long term rise in capacity to supply increasing diverse economic goods to its population. This growth capacity is based on an advancing technology and the institutional and ideological adjustment, which is demand. Economic growth is therefore seen as the process by which a nation's wealth increases over time.

According to Roy (2018), economic growth is an increase in the capacity of an economy to produce goods and services, compared from one period to another. It can be measured in nominal or real terms, the latter of which is adjusted for inflation. Traditionally, aggregate economic growth is measured in terms of gross national product (GNP) or gross domestic product (GDP), although alternative metrics are sometimes used.

Debt is the contractual obligation of acquiring fund with a promise to pay back at a future date (Likita, 2000). Such fund is necessary to stimulate production and sustain development. Similarly, debt securities are negotiable instruments that serve as evidence of a debt. Debt securities include the following instruments: treasury bills, treasury and government bonds, promissory notes, negotiable certificates of deposit, commercial paper, debentures, asset-backed securities, money market instruments and similar instruments normally traded in financial markets. Out of these, treasury bills, treasury certificate and development stocks are merchandisable and traversable while treasury bonds paths and advances are not marketable but held exclusively by the central bank of Nigeria.

Basic Theories

1. The Classical Model of Economic Growth

The classical school of thought argues that public debt obstructs economic growth because it reduces both the financial discipline of the budget process and the private sector's access to credit. The model assumed that savings and investments are determined by profits which are a driving force of economic growth. Capital accumulation, reinvestment, specialization and innovation were the factors that stimulate growth in an economy. Based on the assumptions, the model posits that public debt has no significant role in increasing the growth of an economy. They argue that it obstructs economic growth. The model further asserts that public debt repayments, typically external debt, crowd out economic growth by discouraging

private investment and dissuading potential foreign investments. The classical theory denied that deficit spending added anything to production; indeed, it only diverted private savings from productive purposes. The theory held that over indebted states courted national economic ruin. The classical model of growth was criticized because it ignored the role efficient technical progress could play for the smooth running of an economy. Advancements in technology can minimize diminishing returns. The model also undermined the potency of borrowing (externally or internally) in deficit financing of budgets as this could lead to the actualizations of the goals and objectives of the economy which invariably leads to economic growth.

2. The Keynesian/ Neo- classical model of Economic Growth

The Keynesian school of thought is considered a mono-causal theory of growth, which posits that debt-financed public expenditures have a fiscal multiplier effect on national output or income. The Keynesian theory is underpinned by the "law of increasing state activity" hypothesis, which postulates that increased government spending enhances the domestic economic activity and crowds in private investment. The view of the Keynesian economic theorists suggests that public debt withdraws cash from private investors, but with little or no impact on consumption because the borrowing funds are injected back into the economy to increase overall demand, perhaps, through wages and salaries and other capital expense. Thus, Keynesian economic theorists ignored the challenge of financing budget deficits using either tax cuts or borrowing and emphasized frequent public interference to boost aggregate demand, jobs and production as fueled by government borrowing, either domestically or externally. The transmission mechanism through which debts affect growth is its decline in the resources available for investment by debt servicing. This may lead to an increase in long-term interest rates, a crowding out of private investments essential for productive growth, and a fall in capital accumulation.

3. Debt Overhang Hypothesis

The theory of debt overhang was first propounded by Stewart C. Meyers in 1977 and was later modified by Krugman Paul in 1988. It refers to a debt burden so large that the economy cannot take on additional debt to finance future projects. Debt overhang serves to dissuade current investment, since all earnings from new projects would only go to existing debt holders, leaving little incentive and ability for the entity to attempt to dig itself out of the never ending hole of debt. The theory posits that debt has a negative impact on a nations future growth prospects. It assumes that high level of debt can create a disincentive for investment in future projects, as the potential returns from these investments may be insufficient to cover additional service costs. It also posits that the interest and principal payments associated with debt creates a financial burden for the economy which may limit their ability to invest in new projects or ventures. Overall, the debt overhang theory suggests that excessive debt can harm the economy's future growth and financial stability.

Policies and Programmes of Government aimed at the reduction of debt in Nigeria

1. Debt conversion programme (1988)

The debt conversion programme of 1988 was implemented as part of the structural Adjustment programme (SAP) initiated by the government to address the country's economic challenges. This programme involved the conversion of some of Nigeria's commercial debt into long-term bonds that could be traded on the London stock exchange. The programme was designed to reduce the burden of Nigeria's commercial debt and to provide the government with more stable and predictable debt service payments. Under the programme, the government offered to exchange some of its external commercial debt for bonds that could be traded on the London stock exchange. The bonds had a maturity of 20 to 30 years and carried a lower interest rate than the commercial debt. The bonds were guaranteed by the World Bank, which made them more attractive to investors.

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2. Debt management Office (2000)

The debt management office is a Nigerian government agency that is responsible for managing the country's debt portfolio. The DMO was established in 2000 under the Debt management office establishment act to centralize debt management activities to promote transparency and accountability in debt management. The DMO has been instrumental in implementing various debt management strategies and programmes over the years.

3. Paris club relief (2005)

The Paris club relief of 2005 refers to a debt relief agreement negotiated between Nigeria and the Paris club, a group of 22 creditor nations, in which the Paris club agreed to cancel $18 billion of Nigeria's debt in exchange for economic and social reforms. Prior to the debt relief agreement, Nigeria's debt burden was unsustainable, with debt service payments consuming a large portion of the country's budget. Nigeria had been in arrears on its debt payments, which had led to strained relationships with its creditors and limited the country's access to international financing. In 2005, the Paris club agreed to cancel $18 billion of Nigeria's debt, representing about 60% of the country debt owed to Paris club creditors. The debt cancellation provided Nigeria with much needed fiscal space, allowing the country to redirect resources toward poverty reduction programs, infrastructure development, and other priority areas. In exchange for the debt relief, Nigeria agreed to implement a series of economic and social reforms, including fiscal consolidation measures, privatization of state owned enterprises and improvements to governance and transparency. These reforms were intended to promote sustainable economic growth and help ensure that Nigeria would not fall back into debt distress in future.

4. Fiscal Responsibility Act (2007)

The fiscal responsibility act (FRA) of 2007 is a law that provides a framework for promoting fiscal responsibility, transparency, and accountability in government spending. The act was passed in response to the country's poor fiscal management practices, which had contributed to high levels of debt and budget deficits. The act required the government to prepare and publish a Medium-term Expenditure Framework and a fiscal strategy, which provided a framework for managing public spending and reducing budget deficits.

5. Debt restructuring (2012)

In 2012, the Nigerian government carried out a debt restructuring exercise with the aim of reducing its debt service burden and improving its debt sustainability. The restructuring involved the conversion of a portion of the government's external debt into domestic debt, which had a lower interest rate and longer maturity period. The debt restructuring was seen as a necessary step to address Nigeria's rising debt service payments, which had become a significant burden on the country's finances. The restructuring was also intended to improve the government's access to domestic financing and reduce its reliance on external borrowing. The Nigerian government restructured its external debt by paying off $4.4 billion of its outstanding debt and negotiating more favorable terms with its creditors. This helped to reduce the country's debt burden and improve its debt sustainability. The debt restructuring was successful in reducing Nigeria's debt service payments and improving its debt sustainability. The government was able to take advantage of the lower interest rates on domestic debt to reduce its debt service payments and free up resources for other priority areas such as infrastructure investment.

6. Economic growth and recovery plan (2017)

The Economic Recovery and Growth Plan (ERGP) is a Nigerian government policy framework launched in

2017 to promote economic growth and diversification, improve infrastructure, and reduce poverty. The plan was developed in response to the country's economic recession, which was caused by a decline in oil prices and production, as well as weak economic management practices.

7. Debt sustainability analysis (2019)

In 2018, the International Monetary Fund (IMF) conducted a Debt Sustainability Analysis (DSA) for Nigeria. The analysis aimed at evaluating the sustainability of Nigeria's public debt and provides recommendations for improving its debt management practices. The DSA found that Nigeria's public debt had increased significantly in recent years, driven by rising budget deficits and the need to finance infrastructure investments. As of 2018, Nigeria's debt-to-GDP ratio was estimated to be around 20%, which was still below the threshold considered sustainable for developing countries. Since the DSA was conducted, Nigeria's debt-to-GDP ratio has continued to increase, reaching around 35% in 2021. This has raised concerns about the country's debt sustainability, particularly in light of the COVID-19 pandemic and its economic impact. The Nigerian government has taken steps to address these challenges, including restructuring its debt and implementing fiscal reforms to improve revenue generation and reduce non-priority spending. However, ongoing efforts will be needed to ensure Nigeria's long-term debt sustainability.

Empirical Literature Review

Timothy, Titus and John (2010) employed econometric methodology to examine the phenomenon of domestic debt in relation to growth of the Nigerian economy for the period 1990-2010. The objective was to establish the effect of the phenomenal debt stock increases on economic growth in Nigeria during the study period. The employed the analytical tool of multiple regression models. Gross domestic product, domestic debt stock, expenditure on debt servicing and domestic credit to the economy were the variables used in this research model. The results revealed that while those domestic debt components exerted significant positive effects on economic growth, interest rate exerted insignificant negative effect. Consequently, the study concluded that domestic debt enhanced growth during the period and thus recommend that growth oriented strategies should be top priority in domestic debt and its dynamics.

Callistus, Pascal and Anthony (2019) examined the dynamics of public debt and economic growth in Nigeria from 1980-2018. The study adopted vector auto regression model in estimating the GDP proxy variables. It was deduced that external debt and domestic debt has a negative impact on economic growth in Nigeria. However, it was concluded that Nigeria should concentrate on inward financing of her economic growth by utilizing mostly domestic debts as it poses lesser threat than external debts.

Ejem (2019) examined the responses of growth to domestic debt stimuli in Nigeria during the period 1982 to 2018. The study found out that economic growth responded to the shocks of domestic debt in positive and negative direction using variables that were stationary. The study used the following variables; gross domestic debt, central bank of Nigeria debt, deposit money bank debt and non-bank deposit debt. These variables were analyzed using the ordinary least squares method. The correction model revealed that domestic debt from Central Bank of Nigeria and deposit money banks exert positive and significant effect on economic growth at a certain stage. The researchers therefore suggest that the Central Bank of Nigeria and Debt Management Office should supervise the non-deposit bank debt in order to exert significantly on the growth of the economy.

Ibrahim and Khan (2019) using variables such as real gross domestic product, total savings, Government domestic debt, total government revenue, total private credit as percentage of GDP and total government expenditure, examined the long run relationship between domestic debt and the fiscal policy of economic growth in Nigeria in the period from 1981-2013. The study employed the Auto-regressive Distributed Lag

(ARDL) approach and the bounds test as proposed by Narayan (2005) anchored on the perspective of the endogenous growth theory. The results reveal that although the adverse negative domestic debt hurts the economy, it has a positive effect on the total aggregate government revenue and economic growth in the research period. The paper develops a system to access the speed of the adjustment mechanism coefficient in an error correction model (ECM).

Nwala and Saleh (2021) examined the effect of disaggregated public debt on economic growth in Nigeria using quarterly data from 2007 to 2020. The study uses gross domestic product (GDP) as the dependent variable to measure the Nigerian economic growth; whereas, banking sector debt, non-bank public debt and Central Bank of Nigeria debt -ways and means advances as the independent variables. Three hypotheses were tested using time series econometrics models. The result reveals that there is a long-run equilibrium relationship between banking sector debt, non-bank public debt, Central Bank of Nigeria debt -ways and means advances and GDP. The study recommends that that the government should give more priority to banking sector and non-bank public debt in funding budget deficit and that borrowing from the CBN by the Government should be restricted to refinancing of maturities only.

THEORETICAL FRAMEWORK AND MODEL SPECIFICATION

This study adopts the neo classical theory of debt propounded by Robert Solow and Trevor swan in 1956 and the debt overhang hypothesis developed by Stewart C. Meyers (1984) and later modified by Krugman Paul (1988) as the theoretical framework to determine the effect of domestic debt on economic growth in Nigeria. For the estimation equation, the study adapts and modifies the empirical model of Ibrahim and Khan (2020)

$$\ln(RGDPWt) = f\ [\ \ln(TSVt), \ln(EDt), \ln(DDt), \ln(TRt), FDt, \ln(TXt)] \qquad \text{(i)}$$

The model explicitly incorporated the use of ARDL model in estimating the effect of domestic debt on fiscal policy and economic growth anchored on the endogenous growth theory. The model incorporated real gross domestic product as its dependent variable while domestic debt, total government revenue, total government expenditure were the independent variables.

The functional form model of this study is specified thus with modifications;

$$In(RGDP) = f\ [In(TB) + In(TBO) + In(GBO) + In(PN) + In(IR)] \qquad \text{(ii)}$$

Where;

RGDP = Economic growth   TB = Treasury bills   TBO = Treasury bond

GBO= Government bonds   PN= Promissory Notes

IR= Interest rate (control variable)   In = Log

The econometric form of the model is:

$$InRGDP_t = \beta_0 + \beta_1 TB + \beta_2 TBO + \beta_3 GBO + \beta_4 PN + \beta_5 IR + \mu_t \qquad \text{(iii)}$$

β_0 = Constant term/ Intercept of the model, $\beta_1\ \beta_2\ \beta_3\ \beta_4\ \beta_5$ are partial regression coefficients'

μ_t = Error Term

Unit root and Cointegration test

Posed by the likelihood of spurious result from time series data which may exhibit a strong, upward or downward movement over time with no tendency to revert to a fixed mean, the stationarity of a time series will be examined by conducting unit root test based on Augmented Dickey Fuller (ADF) and Phillips-Perron (PP) test.

The ARDL bounds testing procedure consists of estimating an unrestricted error correction model with the following generic form:

$$\Delta LRGDP_t = \alpha + \sum\beta_i\Delta LRGDP_{t-i} + \sum\delta_j\Delta LTB_{t-j} + \sum\lambda_k\Delta LTBO_{t-k} + \sum\gamma_l\Delta LGBO_{t-l} + \sum\theta_m\Delta LPN_{t-m} + \sum\ell_n\Delta LIR_{t-n} + \sum\eta_1 LRGDP_{t-1} + \eta_2 LTB_{t-1} + \eta_3 LTBO_{t-1} + \eta_4 LGBO_{t-1} + \eta_5 LPN_{t-1} + \eta_6 LIR_{t-1} + \mu_t \qquad (iv)$$

The above equation shows the unrestricted ECM version of ARDL specification. The bounds test is mainly based on the joint F-statistic whose asymptotic distribution is nonstandard under the null hypothesis of no cointegration.

If a stable long run relationship is confirmed from the ARDL bound test, then we shall estimate the short run dynamic coefficients through the following error correction model:

$$\Delta LRGDP_t = \alpha + \sum\beta_i\Delta LRGDP_{t-i} + \sum\delta_j\Delta LTB_{t-j} + \sum\lambda_k\Delta LTBO_{t-k} + \sum\gamma_l\Delta LGBO_{t-l} + \sum\theta_m\Delta LPN_{t-m} + \sum\ell_n\Delta LIR_{t-n} + \Psi ECM(-1) + \mu_t \qquad (v)$$

Where ECM_{t-1} is the error correction term resulting from the verified long-run equilibrium relationship and Ψ is a parameter indicating the speed of adjustment to the equilibrium level after any particular shock. The sign of the ECM_{t-1} must be negative and significant to ensure convergence of short run dynamics to the long-run equilibrium. The value of the coefficient, Ψ, which signifies the speed of convergence to the equilibrium process, usually ranges from -1 to 0. The value of -1 signifies perfect and instantaneous convergence while 0 means no convergence after a shock in the process.

Table 3.1: Description of variables and Sources of Data

Variable	Proxy/ index	Period	Unit of measurement	Source
RGDP	Real GDP	1999-2021	Billions of Dollars	World bank development indicators 2021 (https://www.wd i.worldbank.org)
TB	Treasury bills	1999-2021	Billions of Naira	CBN statistical bulletin 2021
TBO	Treasury bonds	1999-2021	Billions of Naira	CBN statistical bulletin 2021
GB	Government bonds	1999-2021	Billions of Naira	CBN statistical bulletin 2021
PN	Promissory notes	1999-2021	Billions of Naira	CBN statistical bulletin 2021
IR	Lending rates	1999-2021	Percentage	CBN statistical bulletin 2021

Source: Researcher's compilation (2023)

EMPIRICAL RESULT AND FINDINGS

Descriptive Statistics

The descriptive statistics helps to understand times series data and its properties. It shows the mean, median, mode, standard deviation, skewness, kurtosis, and jarque-bera. The descriptive statistics of the study is

presented in table 1.2 below

Table 4.1: Summary of Descriptive Statistics Result

	RGDP	TB	TBO	GBO	PN	IR
Mean	313.9170	1708.06	321.209	4040.22	124.397	18.3278
Median	366.9905	1277.102	372.9000	2901.600	0.000000	16.94000
Maximum	574.1838	3786.137	430.6082	13963.22	971.6610	27.23000
Minimum	59.37261	361.7584	75.98800	0.000000	0.000000	11.35000
Std. Dev.	162.7533	1151.682	121.4604	4320.120	287.6337	3.424903
Skewness	-0.307012	0.36046	-0.809510	0.858500	2.084016	0.829785
Kurtosis	1.747770	1.590887	2.178279	2.538370	5.721856	3.945139
Jarque-Bera	1.864060	2.400925	3.159097	3.029471	23.74845	3.495485
Probability	0.393754	0.301055	0.206068	0.219866	0.000007	0.174167
Sum	7220.090	39285.41	7387.813	92925.01	2861.127	421.5400
Sum Sq. Dev.	582750.2	29180185	324557.7	4.11E+08	1820129.	258.0592

Source: Researcher computation using E-view 10.0

The table above shows the result of the descriptive statistics which examined the normality of the non-standardized variables of the study and the time series properties within the period under study. The mean values of all the variables showed the average values of the variables over the years which incidentally lied between the maximum and minimum values. The values of the standard deviation revealed the measure of variability of the variables from their respective long term mean values every year.

Skewness measures the degree of asymmetry of the series. From the table above, real gross domestic product (RGDP) and treasury bills (TB) are approximately zero, implying that they are symmetric around their respective mean values. Treasury bonds (TBO) shows negative skewness implying lower values than the mean values. Government bonds (GBO), promissory notes (PN) and interest rates (IR) indicates positive skewness, implying higher values than their respective mean values.

Kurtosis measures the peakness or flatness of the distribution of the series. From the table, real gross domestic product (RGDP), treasury bills (TB) and treasury bonds (TBO) are platykurtic, having lower values than the sample mean. Government bonds (GB) is mesokurtic and suggests a normal distribution, while promissory notes (PN) and interest rate (IR) is leptokurtic having higher values than their sample mean.

The Jarque-Bera test matches the skewness and kurtosis of the data to see if it matches a normal distribution. From the report, international probability of the Jarque-Bera test statistics for all the variables except promissory notes, are significant, indicating the normality of these distributions.

Unit root test result

The result of the test for stationarity using Augmented Dickey-Fuller (ADF) is presented below

Table 4.2: Summary of ADF Unit Root Test Results

Variables	ADF Test Statistics @ Level	ADF Critical Value @ 0.05	ADF Test Statistics @ 1st Difference	ADF Critical Value @ 0.05	Order of Integration
RGDP	0.921413	-1.957204	-2.919922	-1.958088	I(1)
TB	1.620839	-1.957204	-2.244255	-1.958088	I(1)
TBO	-1.511544	-1.958088	-2.148811	-1.958088	I(1)
GBO	2.693208	-1.958088	–	–	I(0)
PN	-4.349777	-1.958088	–	–	I(0)
IR	-0.344323	-1.958088	-4.210509	-1.958088	I(1)

Source: Researcher's Computation using E views 10.0

Since the decision rule is to reject null hypothesis if the ADF statistic value exceeds the critical value, evidence from unit root table above shows that some of the variables were stationary at level while others were stationary at 1st difference when their ADF statistics became greater than the criteria values, at 5% level of significance. Therefore the study concludes that real gross domestic product (RGDP), treasury bills (TB), treasury bonds (TBO), interest rates (IR) are all stationary 1st difference integration I(1) while government bonds (GBO) and promissory notes (PN) are stationary at Level I(0).

Co-integration Test Result

For co-integration test, the use of ARDL bound testing approach and the results are reported in table below;

Table 4.3: ARDL Bound Test Results Test Statistic Value

F-Bounds Test		Null Hypothesis: No levels relationship		
Test Statistic	Value	Signif.	I(0)	I(1)
F-statistic	6.945989	10%	2.08	3
K	5	5%	2.39	3.38
		2.5%	2.7	3.73
		1%	3.06	4.15

Source: Researcher's Computation using E views 10.0

From table 4.3, the value of the F-statistic which shows the joint significance of the lagged level variables is 6.945989 and is significantly greater than the upper bond I(1) at 5% level of significance. Therefore, the study rejects the null hypothesis of no co-integration among the variables and concludes that there exists a long-run relationship between economic growth and the chosen explanatory variables. This means that the study can proceed to estimate the long-run coefficients based on ARDL model.

Long Run Estimates

Having verified the existence of long run relationship among the study model, the study therefore subjects the model to Auto-regression Distributed Lag (ARDL) models, to generate the coefficients of the long run relation of the regression model. The estimated long-run coefficients are shown below;

Table 4.4 Summary of Long Run Coefficients

Variable	Coefficient	Std. Error	t-Statistic	Prob.
TB	0.296235	0.053544	5.532562	0.0026
TBO	8.475528	3.202257	2.646735	0.0456
GBO	0.205403	0.075017	2.738082	0.0409
IR	-36.98150	6.555622	-5.641189	0.0024
PN	0.122790	0.237321	0.517402	0.6269

Source: Researcher computation using E-view 10.0

Table 4.4 above presents the estimated long run coefficients for the specified model. The result shows that all the explanatory variables conform to theoretical expectation and are statistically significant at 5% level of significance.

Specifically, the partial coefficient of treasury bills (0.296235) is the long run implies that a 1% increase in treasury bills (as a percentage of GDP) from Nigeria, on the average, will lead to about 0.3% increase in Nigeria's economic growth in the long run. Thus, treasury bills exert positive effect on economic growth in Nigeria. Similarly, the coefficient of treasury bonds (TBO) is 8.475528, implying that a 1% increase in treasury bonds (as a percentage of the GDP) from Nigeria, on the average, will lead to about 8.48% increase in economic growth of Nigeria in the long run. Thus, treasury bonds exert positive effect on economic growth of Nigeria. Also, government bonds (GBO) with a partial regression coefficient of 0.205403 shows that a 1% increase in government bonds (as a percentage of GDP) from Nigeria, on the average, will lead to about 0.2% increase in economic growth of Nigeria in the long run. Thus government bonds exert positive effect on economic growth of Nigeria. The coefficient of promissory note (PN) 0.122790 means that a 1% increase in promissory notes (as a percentage of GDP) from Nigeria, on the average, will lead to about 0.1% increase in economic growth of Nigeria in the long run. Although, this growth will be considered insignificant due to the low percentage it contributes. However, it still exerts positive effect on economic growth. Finally, the coefficient of interest rate (IR) is -36.98150, implying that a 1% increase in interest rate, on the average, will bring about a 36.98% decrease in Nigeria's economic growth in the long run. It should also be noted that IR was insignificant in the long run. This is because an increase in interest rate in the short run discourages investment, assuming that people borrow to invest. However, over a long period of time, a continuous increase in interest rate would not necessarily lead to a reduction in investment (in this case, buying of domestic debt instruments).

Short Run Estimates

Table 4.5 Summary of Short Run Coefficients (ARDL(1, 2, 2, 1, 2, 2))

Variable	Coefficient	Std. Error	t-Statistic	Prob.
D(TB)	0.098603	0.020175	4.887394	0.0045
D(TB(-1))	-0.118278	0.031438	-3.7623298	0.0131
D(TBO)	6.884465	0.881423	7.810623	0.0006
D(TBO(-1))	7.186500	1.223314	5.874616	0.002
D(GBO)	0.147479	0.024509	6.017223	0.0018

D(IR)	-15.44284	1.888632	-8.176731	0.0004
D(IR(-1))	21.70862	3.304794	6.568828	0.0012
D(PN)	0.32899	0.085137	3.863181	0.0118
D(PN(-1))	-0.379848	0.076595	-4.959181	0.0043
ECM(-1)*	-0.982404	0.094987	-10.34254	0.0001

Source: Researcher computation using E-view 10.0

From table 4.5 above, treasury bills, treasury bonds, government bonds and promissory notes all have positive impact on economic growth in the short run in Nigeria, with coefficients 0.098603, 6.884465, 0.147479 and 0.328899 respectively. Thus, a 1% increase in treasury bills, treasury bonds, government bonds and promissory notes will on average, increase economic growth in the short run in Nigeria by 0.01%, 6.88%, 0.15%, and 0.33% respectively.

On the other hand, interest rates exhibited negative effect on economic growth in the short run with a coefficient of -15.44284. This may not be unconnected to the poor economic conditions affecting the country in recent times.

Finally, the error correction term satisfies the apriori expectation as it assumed a value between 0 and 1, which is correctly signed. Its co-efficient is -0.982404, suggesting that about 98% of the disequilibrium in economic growth will be corrected for, annually.

Statistical Justification

Table 4.6 Summary of Statistical Test

R-squared	Adjusted R-squared	F calculated	F tabulated
0.922276	0.858684	6.945989	2.85

Source: Researcher computation

The table above shows that the coefficient of determination (R^2) is 0.922276 implying that 92% of the variations in economic growth in Nigeria were explained by the joint variations in the independent variables, while other possible determinants of economic growth not captured in the model explain about 8% of the variation in economic growth in Nigeria. The adjusted R^2 also supports the claim of the R^2 with a value of 0.858684 indicating that 85% of the total variation in the dependent variable (economic growth) is explained by the independent variables (the regressors) jointly. Thus, this supports the statement that the explanatory power of the variables is extremely high and very strong.

Similarly, the table also showed the values of F-calculated and F-tabulated. Since the F-calculated is greater than F-tabulated, the study rejects the null hypothesis and accepts the alternate that the model has goodness of fit and is statistically different from zero. In other words, there is significant impact between the dependent and independent variables of the study.

Econometric Justification

The study conducted some diagnostic tests to check for the robustness of the ARDL model.

1. Test for Multi collinearity

Table 4.7: Correlation Matrix Table

Correlation	RGDP	TB	TBO	GBO	PN	IR
RGDP	1.000000					
TB	0.791582	1.000000				
TBO	-0.691614	-0.704396	1.000000			
GBO	0.707372	0.699644	-0.694338	1.000000		
PN	0.334555	0.486104	-0.725336	0.736833	1.00000	
IR	-0.51954	-0.187916	0.230357	-0.202787	-0.119170	1.000000

Source: Researcher computation

From the rule of thumb, if correlation coefficient is greater than 0.8, there is multicollinearity but if the coefficient is less than 0.8 there is no multicollinearity. The study therefore, concluded that the explanatory variables do not have perfect or exact linear correlation.

2. Test for Heteroscedasticity

Table 4.8: Heteroskedasticity Test: White

F-statistic	3.528617
Prob. F	0.0850
p-value	0.2054

Source: Researcher computation

From the table above, p(F) is 0.0850 showing that the probability of F statistic is greater than 5% level of significance. Therefore, the study accepted the null hypothesis that the model has no heteroscedasticity in the residuals and therefore, the data is reliable for prediction.

DISCUSSION, CONCLUSION AND POLICY IMPLICATION

In conclusion, the study investigated the effect of domestic debt securities on economic growth in Nigeria during the period 1999 – 2021. The study is based on contemporary econometric technique of co-integration and error correction model within the framework of ARDL specification. The study showed that both in the short runs and long runs, treasury bills, treasury bonds, government bonds and promissory notes, have positive and significant effects on economic growth in Nigeria. This implies that a 1% increase in treasury bills, treasury bonds, government bonds and promissory notes, on the average, will increase economic growth by 0.01%, 6.88%, 0.15 and 0.33% respectively, in the short run and 0.3%, 8.48%, 0.2% and 0.1% respectively in the short run.

Contrastingly, interest rate (proxied by lending rate) has a significant negative effect on economic growth in Nigeria. This implies that a 1% increase in interest rate will lead to a 15.44% decrease in the short run and 36.98% decrease in the long run.

The implication of the above findings is that policy shift on the significant variables should be expected to bring about significant changes on Nigeria's economic growth. Specifically, expansionary monetary policies

that will increase the issuance of treasury bills, treasury bonds, government bonds and promissory notes will raise funds to the government which will enhance economic growth. The study is of the view that issuanceof domestic debt could be more beneficial for Nigeria since she can borrow domestically at manageableinterest rates and tap demand from a large domestic institutional investor base even in the face of globalexchange rate fluctuation. It is also denominated in the domestic currency; this will hedge against exchangerate fluctuations that increase the cost of servicing external debts.

Finally, monetary policy targeting should play a stabilizing role in influencing economic growth. The monetary authority (CBN) can implement monetary policy decision that cuts interest rate which will in return lower the cost of borrowing and result in higher investment activity. The expectation that economic activity will strengthen may also prompt banks to ease lending policy, which in turn enables business and households to boost spending. In a low interest-rate regime, stocks become more attractive to buy, raising households' financial assets and providing the needed finance for government deficit financing.

REFERENCES

1. Beaugrand, P., Loko, B. & Mlachila, M. (2002). The choice between external and domestic debt in financing budget deficits: The case of Central and West African countries. *IMF Working Paper* 02/79, Available at SSRN: https:// ssrn .com/ abstract =879599
2. CBN (2021). Annual report and statement of account. *CBN Statistical Bulletins*. Retrieved from cbn.gov.ng/documents
3. Ejem, C., (2019) Responses of growth to domestic debt stimuli in Nigeria. *International Journal of Scientific and Research Publications* (IJSRP) ISSN 2250-3153, 9(9), 9-19 https://doi.org/10.29322/IJSRP.9.09.p9303
4. Engle, R. F. & Granger, C. W. J. (1987). Cointegration and error correction representation: estimation and testing. *Econometrica 55*: 251–276.
5. Ibrahim, K. A. & Shazida, M. K. (2009). Domestic debt and economic growth in Nigeria: An ARDL bounds test approach. *Economics and Business 33*(1):50-68. DOI: 10.2478/eb-2019-0004
6. Johansen, S. (1991). Estimation and hypothesis testing of cointegrating vectors in Gaussian vector autoregressive models. *Econometrica 59*: 1551–1580.
7. Laurenceson, J. & Chai, J. C. H. (2003). *Financial reform and economic development in China*. Edward Elgar Publishing,.
8. Likita, (2000). External and domestic debt impact on the growth of the Nigerian economy. *International Journal of Education Research, 1*(2): 70-85.
9. Kuznet, S. (1955). Economic growth and income inequality. *The American Economic Review,45*(1), 1-28.
10. Myers, S. C. (1984). Capital structure puzzle. *NBER Working Paper No.* w1393, Available at SSRN: https:// ssrn.com/ abstract=227147
11. Nwala, M. N. & Saleh, A. D. (2021). A disaggregated analysis of the effect of domestic public debt on economic growth in Nigeria. *Journal of economics and Allied Research*, 6(3), 14-29. Retrieved from https:// jearecons .com/index.php/jearecons/article/view/139.
12. Ogu, C., Ojimadu, P. K. & Agu, A. (2019). Dynamics of public debt and economic growth in Nigeria . *Journal of Economics and Sustainable Development, 10*(24), 22-32. ISSN 2222-2855
13. Pesaran, M. H., Shin, Y. & Smith, R. J. (2000). Structural analysis of vector error correction models with exogenous I(1) variables. *Journal of Econometrics 97*: 293–343.
14. Pesaran, M. H., Shin, Y. & Smith, R. J. (2001). Bounds testing approaches to the analysis of level relationships. *Journal of Applied Econometrics* Volume16, Issue3 289-326 https://doi.org/10.1002/jae.616
15. Phillips, P. & Hansen, B. (1990). Statistical inference in instrumental variables regression with I(1) processes. *Review of Economic Studies, 57*, 99-125. http:// dx.doi .org/ 10.2307/ 2297545

16. Roy, P. (2017). Economic growth, the UN and the Global South: An unfulfilled promise. In: *The UN and the Global South, 1945 and 2015* (1st Edition). Routledge eBook ISBN 9781315309293

17. Todaro, M. P. (1995). *Economic development* (5th edition). Singapore: Longman Singapore Publishers (Pte) Ltd.

18. Timothy, T. & Ekezie. F. (2010). Effects of domestic debt on economic growth in Nigeria. *Journal of strategic and international studies,4*(1),2326 -3636

19. World Bank (2022). World development index. World bank data base. data.worldbank.org