Relationship between Domestic Debt and Economic Growth of Nigeria

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ABSTRACT: Nigeria is one of the most highly indebted countries that have low income growth and low per capita income. Government seems to lack the potentials to generate revenue domestically to meet up with developmental goals and other national in order to attain the desire economic growth. Hence government resorts to borrowing. The paper examines the relationship between domestic debt and economic growth in Nigeria. The results reveal that domestic debt does not have significant impact on economic growth in the short run but significant negative impact in the long-run. The government should therefore monitor the disbursement of loan on real growth- enhancing capital projects instead of recurrent expenditure. Also, government should formulate policies aimed at increasing her ability to generate more revenue to meet her expenditure demand.

KEYWORDS: Domestic debt, revenue, economic growth, Nigeria

INTRODUCTION

Debt crisis began in Nigeria from early 1980s due to a fall in the foreign exchange earnings and as a result of the collapse of oil prices in the international market which gave rise to acquisition of loan (debt) indiscriminately. The debt stock and its servicing imposes greater challenges on the Nigerian economy reflecting in the fall in her growth rate.Sustainable growth is of utmost priority to any sovereign nation most especially to the less developed countries (LDCs) like Nigeria which has low per capital formation owing to low level of saving and investment (Adepoju, Salau and Obayelu, 2007).According to Sogo-Temi (1999), the explanation for growing debt burden of developing economies is of two-fold, firstly, developing countries have become over-dependent on borrowing. Secondly, the difficulties they experience in servicing debt due to low revenue profile.

Ahmed (1984) asserted that the causes of debt problem relate to both the nature of the economy and the economic policies put in place by government. Aluko and Arowolo (2010) pointed out that the major cause of the debt crisis situation in Nigeria is the fact that these foreign loans are not being used for developmental purposes. This has resulted into debt overhang in Nigeria. Krugman (1981) explains debt overhang as one whereby the expected payment amount of debt exceeds the actual amount at which it was contracted.

Borensztein (1990) also defines debt overhang as one where the debtor nation benefits very little from the returns on additional investment due to huge debt service obligations.Audu (2004) related the concept of debt overhang to Nigeria's debt situation. He stated that the debt service burden has prevented rapid growth and development of the nation. This continued until the debt forgiveness granted to Nigeria by Paris Club in 2005 leading to cancellation of about 60 percent of US $30.85 billion being owed by the country. The relief was granted mainly to foster economic growth in Nigeria.Chenery(1996) asserted that the basic reason for external debt in developing countries is to bridge the saving-investment gap. Therefore, to smoothly run the affairs of the economy, one major source of aid is debt which can either be internal or external. Olukunmi (2007) posited that human wants are insatiable and the means or resources available for the satisfaction of these wants are limited in their supply. To meet the national needs, given the limited resources, nations would actually resort to borrowing internally (domestic) or externally (foreign). Debt is the summation of all claims against the government held by the private sector of the economy, foreign government and international bodies such as IMF, Paris club and London club.Ezeabasili (2006) and Momodu (2012) asserted that the shortfall in domestic savings to finance production activities compels nations to borrow.

Countries borrow when they are unable to generate sufficient revenue domestically to meet her capital expenditure demand. The funds borrowed are meant to boost the economic growth and development of the country thereby improving the standard of living of the citizenry. Government usually borrows by issuing securities, government bonds, and bills. Countries could also borrow directly from foreign organization such as the World Bank and international financial institutions.

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In the early 1970s, developing countries borrowed to finance their current account deficit. Such borrowing was geared towards boosting the level of economic growth and development. As the debt piled up, the international financial institutions from the 1980s started providing both technical and financial debt-management assistance to debtor countries. This effort, which still aims at fostering economic growth is equally meant to reduce both debt burdens and poverty level of these countries in order to make them more viable. While these measures succeeded in substantially reducing the external debt burdens of many middle-income countries, a different scenario played out for many of their poor counterparts. On the other hand, not much attention was being paid to the domestic debt. Thus some countries, Nigeria inclusive, have been witnessing bloated domestic debt. Generally, debt burden of poor countries had continued to pile up coupled with chronic poverty culminating in sluggish economic growth.

The debt structure of a country affects individual citizens, institutions of government, privately owned corporate organizations like banks and consequently the economy as a whole. The debt structure in this context is the magnitude of the public debt external. The problem of Nigeria's public debt has become crucial in recent time, particularly before the debt forgiveness period due to its magnitude and the amount needed to serve such an enormous debt as well as its attendant possible effects on different operating sectors of the economy especially the banking sector and the growth of the economy at large. In July 2005, Nigeria's internal debt amounted to US$ 34 billion, of which the Paris club of fifteen creditor countries owed about $28 billion or 85 percent. Debt is borrowing from within or outside the nation by a state, from private people or individuals associations, or from banks and non-bank financial institutions. According to (Hassan and Akher, (2012) this is the quantity of public cash owned by organizations, government agencies and other organizations, either resident or non-resident.
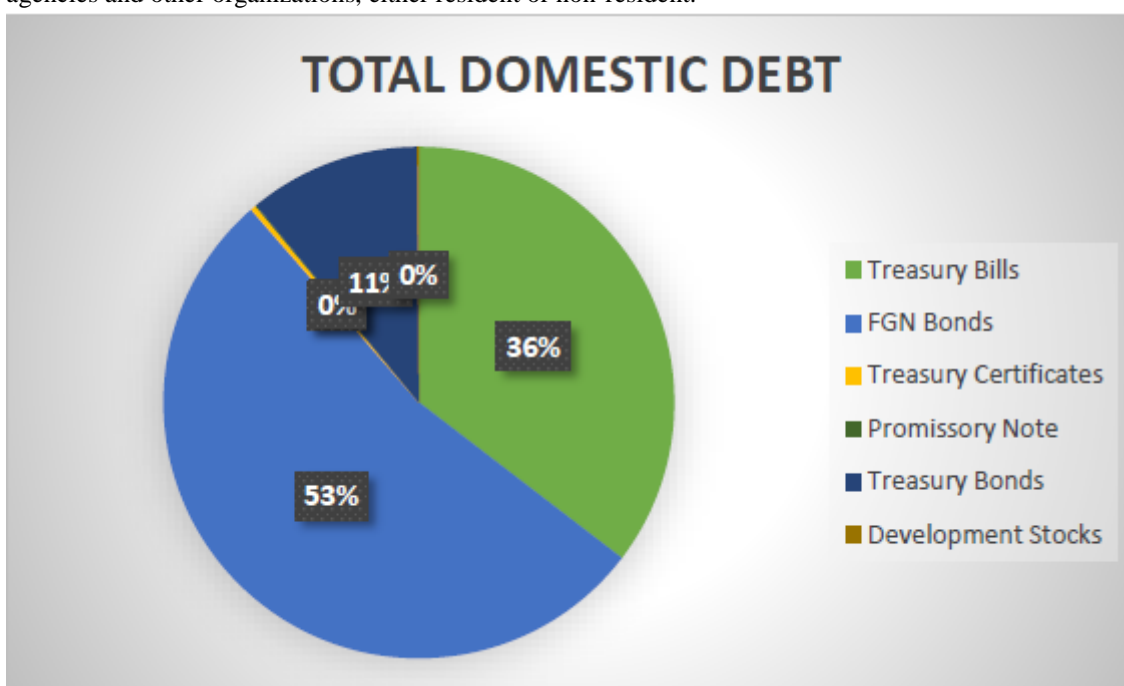

Figure 1: Nigeria Domestic Debt in (N'Billion)
Source: Central Bank of Nigeria and Debt Management office 2019

From figure 2,the largest domestic debt is federal government bond which constitute 53% of the total domestic debt in Nigeria.
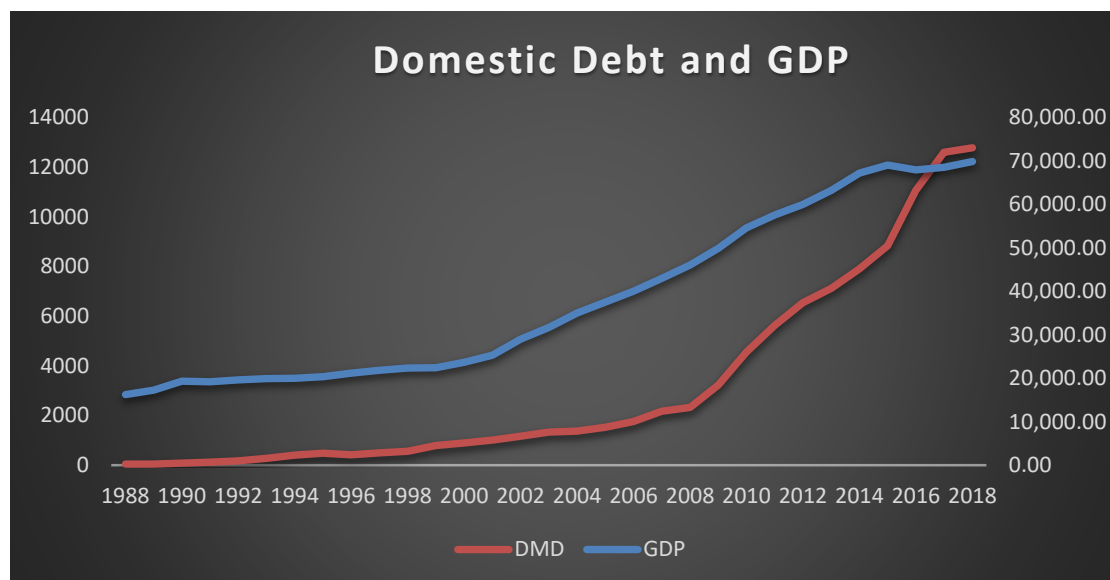
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Figure 2: Trend analysis of Nigeria Domestic debt and GDP.
Source: Authors' graphical illustration from CBN Statistical Bulletin 2019.

From the figure two above, domestic debt and GDP moved simultaneously from 1988-2005 with GDP greater than domestic debt. By 2006 GDP and domestic debt raised as a result of external debt relief. Government's concentration was on domestic debt (FNG Bond) as the major source of financing project which lead to economic growth.

LITERATURE REVIEW
Recently, a number of techniques have been used to examine the connection between the debt development nexus in Nigeria, resulting in multiple responses. Karogol (2002) explored the short-term and long-term relationship between financial development and internal debt servicing for Turkey during 1956–1996. The research used a standard model of production function analysed using multivariate methods of co-integration. Estimates of Vector Auto-regression have shown that there is one equation of co-integration. It also disclosed a negative relationship between debt service and economic growth. Audu (2004) looked at the effect of external debt in Nigeria from 1970-2002 on economic growth and public investment. The empirical inquiry was carried out using the Method of Co-integration and Error Correction. The study shows that debt servicing pressures in the country have had a significant negative impact on the growth process and past debt accumulation have a negative impact on public investment. Adepoju, Salau and Obayelu (2007) used time-series data from the numerous bilateral and multilateral agreements to analyse the impacts of external debt management on Nigeria's economic growth between 1962 and 2006.

Ayadi and Ayadi D(2008) examined the effect on economic growth of the Nigerian and South African markets of the enormous external debt and its maintenance conditions. Using both Ordinary Least Square (OLS) and Generalized Least Square (GLS) techniques, the Neo-classical growth model incorporating external debt, debt indices, and some macroeconomic factors were used and evaluated. Their finding disclosed adverse effect on Nigeria and South Africa's financial growth from debt and its servicing requirement.

Akinkunmi (2017) investigated the long-term debt-growth nexus in sub-Saharan Africa. The research uses both the autoregressive distributed lag model (PARDL) panel and the non-linear autoregressive distributed lag model (PNARDL) panel to examine the internal relationship debt and economic growth using a panel dataset of 22 countries from 1985 to 2015 Its findings show that investment levels have a significant impact on long-term economic growth in both linear and non-linear models. However, the long-run external debt ratio in the non-linear model is only important. There is powerful proof of correction of errors as the lagged per capita GDP in both models is extremely important and negative. Kiprotich (2017) adopted time series data for the period 1970 to 2017 in Kenya for the non-linear impact of highly increasing external debt on the economy of Kenya.Time series property tests suitable for the non-linear model were performed prior to running the Generalized Moments Method (GMM) to achieve the study goal. The research found that Kenya's external debt contributes positively to economic growth, though to a stage beyond which more debt is beginning to drag the economy.

Saidfuddin (2016) looked at how Bangladesh's public debt can affect its economic growth. Two models, Investment model and Growth model were used in this research for this purpose. The investment model has been used to investigate the potential indirect effect of public debt on economic growth through its impact on investment. In the growth model direct relationship between public debt and economic growth has been examined. The study period is 1974 to 2014. Augmented Dickey-Fuller test was used to diagnose the non-stationary nature of time series data. To estimate these models, a TSLS regression is executed. The projected

findings indicate that both investment and development are positively linked to public debt. The empirical results also indicated that, through it has beneficial impact on investment, government debt has an indirect beneficial impact on investment.

METHODOLOGY

This study adopts the Autoregressive Distributed Lag (ARDL), a variant of the vector autoregressive (which is used to capture the linear interdependencies among multiple time series). The ARDL otherwise known as the bounds test is perhaps the most suitable for testing the presence of a long run relationship or equilibrium among time series data. The co-integration technique does not require pre-tests for unit roots as seen in some other techniques but testing for stationarity is however integral in cases where series are integrated of order (2) since ARDL fails in the presence of series integrated of order(2).

Model Specification

GDPG= F(DMD,LDR,RSV)-------------------1

The econometric representation of the model is as follows;

$GDPG_t = \alpha + \beta DMD_t + \beta LDR_t + \beta RSV_t + \mu_t$ --------------2

GDPG is Gross Domestic Product Growth rate

DMD is Domestic Debt

LDR is Lending Rate

RSV is ForeignReserves

μ is Stochastic Term.

Short-Run and Long-Run ARDL Model Specification

$$GDPg_t = \alpha_0 + \beta_1 GDPg_{t-1} + \beta_2 lnDMD_{t-1} + \beta_3 lnLDR_{t-1} + \beta_4 lnRSV_{t-1} + \sum_{i=1}^{p} \varphi_i \Delta GDPg_{t-i} + \sum_{j=0}^{q} \varphi_j \Delta lnDMD_{t-j} + \sum_{l=0}^{n} \varphi_l \Delta lnLDR_{t-l} + \sum_{s=0}^{v} \varphi_s \Delta lnRSV_{t-s} + \gamma ECT_{t-1} + \mu_t$$ ---------3

where α_0 is the intercept, $\beta_1, \beta_2, \beta_3, \beta_4$, and β_5 represents the long run parameter of gross domestic product, domestic debt, external debt, lending rate and total reserve respectively while $\varphi_i, \varphi_j, \varphi_k, \varphi_l$, and φ_s are short run parameters. The term γ represent the coefficients of the error correction term while μ_t is the error term which is expected to be unautocorrelated.

RESULTS

Table 1: Descriptive Statistics

	DMD	GDPg	LDR	RSV
Mean	3151.017	4.627426	23.93716	110.9773
Median	1329.685	5.015935	22.62250	33.88668
Maximum	12774.40	15.32916	36.09000	444.3568
Minimum	47.02960	-2.035119	17.60000	3.149426
Std. Dev.	3903.629	3.957383	4.488758	134.4344
Skewness	1.316822	0.371418	0.839220	1.297629
Kurtosis	3.454341	3.272227	3.087550	3.532964
Jarque-Bera	9.225738	0.808472	3.648737	9.066751
Probability	0.009923	0.667487	0.161319	0.010744

Source: Author's computation

Table 2: Summary of Philip Perrons and Augmented Dickey Fuller test for unit root

Variables	Augmented Dickey-Fuller		Phillips-Perrons		Decision
	Level	*First difference*	*Level*	*First difference*	
DMD	-2.3289	-3.9881	-2.1731	-4.0562	I(1)
	(0.1699)	(0.0047)*	(0.2196)	(0.0040)*	
GDPg	-3.6011	-10.0323	-3.5210	-12.8248	I(0)
	(0.0118)**	(0.0000)*	(0.0143)**	(0.0000)*	
LDR	-3.5483	-7.0473	-3.6690	-7.9384	I(0)
	(0.0134)**	(0.0000)*	(0.0100)**	(0.0000)*	
RSV	-1.4461	-3.9002	-1.6945	-3.7948	I(1)
	(0.5460)	(0.0058)*	(0.4237)	(0.0076)*	

Source: Authors' computation using Eviews 10

*Note: *, **, *** denotes significant level at 1%, 5%, and 10% respectively*

The pre-diagnostic test was with constant and without trend.

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The unit root test is essential to ascertain the stationarity properties of the variables employed in the study. The Augmented Dickey-Fuller test statistic showed all the variables were stationary at their first difference I(1) with an exception of the lending rate and GDP growth rate which was stationary at levels I(0). This was also consistent with Phillips-Perrons test statistic results.

ARDL Bound Co-integration Test

Considering the likelihood of long-run relationship between variables in time series, it is necessary to conduct co-integration tests when conducting time series analysis. The usual co-integration tests found in the econometric literature are the Engle-Granger and ARDL Bounds tests for univariate model. The selection of appropriate co-integration test depends on the nature of stationary of the variables that are involved in the empirical model. While the Engle-Granger test is suitable only when preliminary unit root tests reveal that all variables in the model are stationary at first difference, I(1), the bounds test is right when unit root tests show a mixture of variable that are stationary at levels I(0) and those that are stationary at first difference I(1).

Regarding the fact that we have a mixed order of integration in **table 2**. This study then adopts ARDL bounds tests approach developed by Pesaran et al. (2001). A Summary of the bound test conducted is presented in **table 3.**

From the results, it is evident that the series in model 1 are co-integrated based on the criterion that the calculated F-statistic statistically outweighs the upper bound. Thus, we then conclude that the variables exhibit a long-run association at 0.1 critical level which then stimulate a need to further estimate both the short run and long-run ARDL.

Table 3: Summary of the ARDL Bound Test Result

Critical Level	Lower Bound	Upper Bound
1%	4.29	5.61
5%	3.23	4.35
10%	2.72	3.77

F-statistic: 6.19

Source: Authors' computation using E-views 10

An ARDL Result Interpretation for the Model

Domestic debt was to be significantly negative to growth both in the short-run and in the long-run. Though it is found that the direction of its impact on growth appears mixed. The domestic debt does not have significant impact on growth in the short run while the impact was significantly negative in the long-run. This follows the studies conducted by UguwuOkereke (2017), Peter N, Denis P and Chukwuedo S, (2013) ,Onyeiwu C (2012), Adofu and AbulaM.(2010).Lending rate does not have significant impact on growth both in the short-run and in the long-run. Foreign reserve also does not have significant impact on growth in the short-run while in the long-run it was found to be significant.

Table 4: Summary of ARDL Regression for both Short-run and Long-run Results

Variable	Coefficient	Standard Error	t-statistic	Probability
Short-run Estimate				
C	-3.8843	1.4260	-2.7238	0.0121
ΔDMD	-5.7783	4.8951	-1.1804	0.2499
ΔLDR	0.2361	2.5632	0.12250	0.3211
ΔRSV	0.9172	1.3766	0.6662	0.5119
Long-run Estimate				
DMD	-2.1656	1.2553	-1.7250	0.0979
LDR	4.8911	6.7710	0.7223	0.4774
RSV	2.6950	1.2327	2.1861	0.0392

Source: Author's computaon

CONCLUSION

This study has been able to investigate the impact of, domestic debt, lending rate and foreign reserves on economic growth in Nigeria using annual time series data from 1988-2018. GDP growth rate was adopted as the dependent variable on which the impact of the external debt, domestic debt, lending rate and reserves were examined. The study was also able to determine the existence of long-run relationship amongst external debt, domestic debt, lending rate and economic growth in Nigeria using the ARDL Bounds

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Test for co-integration. The descriptive analysis was carried out also to ascertain the properties of the series. The Philip-Perrion and Augmented Dickey-Fuller Test for unit root was carried out to test for the stationarity of the series in the model. The short-run and long-run relationship was then examined using the ARDL co-integration test. It was established that there is co-integration between gross domestic product growth rate external debt, domestic debt, lending rate and reserves in Nigeria.

The results show that there is a long-run equilibrium among domestic debt, lending rate, reserves and economic growth in the models having established the existence of the long run relationship for Nigerian situation. Thus, domestic debt lending rate does not have significant impact in the short-run while domestic debt and foreign reserves are negatively significant in the long run
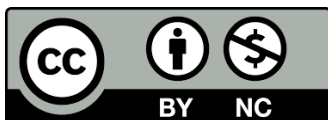
Domestic debt contributes to the decline in Nigerian economic growth as its contribution to the GDP is significantly negative. Hence, the government should reduce the level of domestic debt it accumulates overtime to prevent debt overhang. Government should as a matter of urgency monitor the disbursement of loan on real growth enhancing capital projects instead of recurrent expenditure. Government should formulate policies aimed at encouraging domestic savings vis-à-vis domestic investment.

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