PUBLIC DEBT AND ECONOMIC GROWTH IN NIGERIA

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Abstract

This study investigated the impact of public debt on economic growth in Nigeria. In carrying out the study, theories which relate debts to economic growth were reviewed. The study spanned from 1991 to 2017 and used the Barro growth regression model with minor modifications. The unit root test showed that all the variables in the study were stationary at first difference. The result of the co-integration test showed that there is a long term relationship among the variables. The results of the regression analysis showed that domestic and external debts have negative and significant impacts on Nigeria economic growth while public debt servicing has negative and insignificant impact on the growth of Nigerian economy. Thus, the study recommends that public debts should be invested into projects that are productive and self-financing so that the projects can liquidate the debts and interests.

Keywords: domestic debt, debt servicing, external debt, expenditure, economic growth

Introduction

Public debt refers to the total of the nation's debts which covers debts of local and state and national governments owed to institutions, government agencies and other bodies either resident in or outside a country (Oriakhi, 2002). It can be classified in two ways: domestic public debt and external debt. When debts are owed to residents within a country, it is known as domestic debt and when owed to outside the country, it is external/foreign debt. Government debt is one method of financing government activities, though not the sole method as governments has the option to create money to monetize their debts, in-order to avoid servicing the debt. Government debt is created through various instruments including bonds, treasury bills, borrowing from commercial banks and overdraft from the central bank (Debt Management Office, 2017).

Economic growth is defined as a rise in the total output (goods or services) produced by a country. It is an increase in the capacity of an economy to produce goods and services, compared from one period of time to another (Abbas, in Matiti, 2013). Economic growth occurs whenever people take resources and rearrange them in ways that are more valuable. Economic growth refers only to the quantity of goods and services produced.

Economic growth can be either positive or negative. Negative growth can be referred to by saying that the economy is shrinking. Negative growth is associated with economic recession and economic depression. Otherwise is called a boom.

A prudent public debt management helps economic growth and stability through mobilizing resources with low borrowing cost and limiting financial risk exposure. In less developed countries, governments use public debt as an imperative tool to finance its expenditures. Economic growth can be increased by effective and proficient utilization of resources to achieve macroeconomic goals. However, if the public debt is not properly utilized, it would restrict economic growth and become the biggest curse for the economy. The resources to finance the optimal level of economic development in most developing countries are in short supply. This is because their economies are plagued with problems associated with low domestic savings, low tax net and revenue, low productivity, limited foreign exchange earnings, mono export, and export of raw materials. As a result of this, developing countries (especially Nigeria) inevitably resort to public debt finance to bridge the gap between the resources available to them and what is required for their

advancement and in most cases not minding the impact it has on the economy.

The public debt in Nigeria has been increasing over the years and the issue of the sustainability of the debt level has generated a lot of debate. Available data from the Debt Management Office (DMO) shows that Nigeria's total debt stock as at end of 2012 stood at N7.55trn. In December, 2016, it has mounted up to N17.36trn. It rose slightly to N19.16trn in March, 2017. It increased furthermore to N21.7trn in April 2018. This represents growth of 153.63% from N7.55trn in 2012. The increase in the total debt is attributable to the need to fund infrastructure and to supplement the declining government revenue. Many analysts have argued that the increase in government's appetite for borrowing has crowded out the private sector and because of this, the raising stock of public debt calls for concern and investigation as the country mainly depends on oil for her foreign earnings and domestically has a low tax net. Also, in sub-Sahara Africa (SSA), Nigeria has the highest debt to GDP ratio. With the mono cultural nature of Nigeria economy, low tax net, and high debt to GDP ratio in SSA, there is the need to know the impact of public debt on Nigerian economic growth. To this end, this study is set to examine the impact of public debt on the Nigerian economy. The study intends to fill a gap in literature by disaggregating public debt into domestic debt and external debt and analyze their impacts on economic growth.

Theoretical Review
The nexus between public debt accumulation and economic growth is a complex one, and economic theory alone does not provide complete clear direction. The main argument for a negative relationship between the two is that of "crowding out" of private investment by government. Another explanation is that of confidence effects: an upward sloping debt path beyond certain levels could lead investors to worry about the country's debt continuing into the future for long. Considering this risk, economic managers would be willing to hold government securities only at

higher borrowing cost. The lower demand and investment due to higher interest rates in turn can have negative implication for economic growth in the long run. Since the higher cost of government borrowing poses an additional pressure on fiscal balances, an increase in government bond yields could lead to further loss of confidence and become self-fulfilling.

In an extreme case, a crisis could occur with negative implications for economic growth depending on the currency denomination of the public debt and its maturity profile. While it is theoretically possible for governments to inflate the local-currency-denominated debt away by monetizing (printing money), this is impossible for foreign-currency-denominated debt. In the latter case, a public debt crisis could also trigger currency and/or banking crises with more profound consequences for economic growth. High and increasing public debt might also constrain the ability of fiscal authorities to smooth economic cycles. A smaller scope for counter-cyclical fiscal policy can lead to higher volatility and lower output growth. These considerations provide some support for the negative association between growth and debt path in conjunction with a sufficiently high level of debt.

On the contrary, additional government expenditure through debt could be efficiently invested in productive public capital (like infrastructure, comprising power, road, water, ICT etc and human capital, comprising education ,health etc) and could be growth enhancing. Consequently, the net effect of debt accumulation on economic growth cannot be established theoretically.

Empirical review
Adofu and Abula (2010) investigated empirically the effect of domestic debt and economic growth in Nigeria using the Ordinary Least Square (OLS) regression technique and employing time series data from 1986 to 2005. The study revealed that domestic debt has negative effect on economic growth such that domestic debt decreases gross domestic product by 42.8 percent, and advocated

that the Nigerian government should reduce domestic borrowing and improve on her tax structure.

Ogege and Ekpudu (in Imimole & Imoughele, 2012) examined the effect of debt burden (external and internal) on the Nigerian economy and found that debt burden has inverse impact on economic growth. They suggested that the nation should avoid borrowing in order to reduce its burden. The study also showed that debt burden in Nigeria has resulted in various distortions in macroeconomic stability.

Barik (2012) studied the direct and indirect effect of public debt on economic growth of India between 1981 and 2011. His econometric investigation revealed that there is an indirect connection between public debt and economic growths of India within the period. He discovered that both investment and output growth had an indirect positive effect on economic growth through its influence on investment. He recommended that it is not enough to just raise public debt but to put measure in place to stabilize them both in the medium and long-term.

Emmanuel (2012) focused on the impact of public debt on economic growth in Nigeria. He showed that the joint impact of debt on economic growth is negative and quite significant in the long-run but become positive in the short-run. This was attributed to incompetent debt management.

Tajudeen (2012) examined the causal nexus between public debt and economic growth in Nigeria between 1970 and 2010 using a Vector Autoregressive (VAR). The paper concluded that public debt and economic growth have long run relationship, and they are positively related if the government is sincere with the loan obtained and use it for the development of the economy rather than channel the funds to their personal benefit.

Aminu, Ahmadu and Salisu (2013) studied the relationship between external debt, domestic debt and economic growth in Nigeria between 1970 – 2010, exploring the Ordinary Least Squares (OLS) method as well as the Granger Causality test. The OLS results revealed that while external debt has an inverse impact on economic growth, domestic debt impacts directly on economic growth, causality results suggest that there is a bi-directional causality between external debt and economic growth while no causation exists between domestic debt and economic growth. Besides, there is also no causation between external debt and domestic debt in the study. The paper therefore concludes that there is need for fiscal discipline and high sense of responsibility in handling public funds for a country like Nigeria and other highly indebted countries.

Bettina and Alfred (2014) study on public debt and economic growth in emerging market economies revealed a significant positive correlation between public debt and the subsequent growth rate of per capita GDP.

Saifuddin (2016) examined public debt and economic growth in Bangladesh. The empirical findings of the study indicate that public debt has made a significant contribution to economic growth, as measured by GDP, not only directly but also indirectly via its effect on investment because the public debt, ceteris paribus, would appear to induce investment over time and this, in turn, indirectly enhance economic growth.

Matthew and Mordecai (2016) study on the impact of public debt on economic development of Nigeria revealed that there exists a long-run relationship between external debt stock, domestic debt stock, external debt servicing, domestic debt servicing and gross domestic product per capita in Nigeria. Also, it was discovered that external debt stock and external debt servicing have insignificant negative relationship with gross domestic product per capita in Nigeria. However, domestic debt stock (DDS) has a positive and highly significant relationship with gross domestic product per capita (GDPPC) while domestic debt service payment (DSP) was statistically significant and negatively related to GDPPC in Nigeria.

Ujuju and Oboro (2017) study on the Nigeria debt structure and its effects on economic performance

revealed that Nigeria's public debt whether aggregated or structural in form is helpful in explaining changes in Nigeria's gross domestic product, and hence, economic performance of the country. However, it is vital to note that while domestic debts sign positively with Nigeria's gross domestic product, external debts sign negatively with it. The results contradict a priori expectation of positive relationships based on theoretical postulation of the advantageous effects of leverage both at corporate and national levels, However, the results might probably have emanated from the fact that external debts are often associated with stringent repayment terms. They also embody other trade conditionality's which may turn out to be counter-productive and inimical to the growth of less developed economies.

Methodology

In determining if public debt impacts on economic growth in Nigeria within the period 1991-2017, the study used annual data from the Central Bank of Nigeria, statistical bulletin, annual reports, and the various publications of the Debt Management Office. To avoid spurious regression due to the problem of non-stationarity of data, the Augmented Dickey Fuller (ADF) test was utilized to check for the presence of a unit root in the variables. Next, the Johansen cointegration test was carried to verify if a long-run relationship exists among the variables in the model.

Model Specification

The impact of public debt on economic growth in Nigeria was examined using King & Levine (1993)

and Maana, Owino & Mutai (2008) versions of the Barro growth model with minor modification which is specified thus:

$$Y_t = \pi_0 + \pi_1 L_t + \pi_2 Z_t + U_t \dots\dots\dots\dots\dots\dots\dots\dots\dots(1)$$

Where, t is for years, Y_t is the growth rate of real Gross Domestic Product (GDP), L_t is the domestic debt to nominal GDP ratio, Z_t is a set of explanatory variables that have been shown empirically to be significant determinants of real growth and U_t is the error term.

In this study, Z_t variables include the domestic debt to GDP ratio, external debt to GDP ratio and public debt servicing to GDP ratio. Thus, the model for this study is specified as follows:

$$Y_t = \alpha_0 + \alpha_1 DDY_t + \alpha_2 EDY_t + \alpha_3 PDY_t + V_t \dots\dots\dots\dots\dots\dots\dots\dots\dots(2)$$

Applying log in equation (2) gives:

$$logY_t = \alpha_0 + \alpha_1 \log(DDY_t) + \alpha_2 \log(EDY_t) + \alpha_3 \log(PDY_t) + V_t \dots\dots\dots\dots\dots(3)$$

Where, log is natural log, Y_t is the growth rate of real GDP at time t, DDY_t is the domestic debt to GDP ratio at time t, EDY_t is the external debt to GDP ratio at time t, $PDSY$ is the public debt servicing to GDP ratio, at time t and V is the error term. Theoretical expectations: $\alpha_1, \alpha_2 \text{ and } \alpha_3 < 0$. Equation (3) is the model for this study.

Empirical Analysis

Table 1. Unit-Root Test Result by Augmented Dickey Fuller Method at 5%

Variables	5% critical value	First Difference	Order of Integration
$logDDY_t$	-2.9850	-5.235145	I(1)
$logEDY_t$	-2.9850	-4.383692	I(1)
$logPDY_t$	-2.9850	-4.837531	I(1)
$logY_t$	-2.9850	-7.788623	I(1)

Source: Result extract from Eview

The study tested the variables for unit root problem using Augmented Dickey Fuller Test at 5%. The result of the stationarity test showed that

all the variables were stationary at first difference using five percent significant level as shown in Table1 above. Having established the stationarity

of the variables, the long run relationship using Johansen cointegration test was conducted.

Table 2. Johansen Cointegration Result

Hypothesized No. of CE(s)	Eigenvalue	Trace test	5 Percent Critical Value
None *	0.806762	102.8703	68.52
At most 1 *	0.712016	61.77451	47.21
At most 2	0.449822	30.65328	39.68
At most 3	0.321242	15.71543	25.41
At most 4	0.214258	6.028162	13.76

Source: Result extract from Eview
denotes rejection of the hypothesis at 5% significance level
 L.R. test indicates 2 cointegrating equation(s) at 5% significance level

The result of Table 2 shows that there exist two co-integrating equations at 5% level of significance. This is because the trace test statistic is greater than the critical value at 5%. This shows that there is long run relationship between the dependent variable (Y_t) and the independent variables (DDY_t - domestic debt to GDP ratio at time t, EDY_t - external debt to GDP ratio at time t, and $PDSY_t$ - public debt servicing to GDP ratio, at time t).

Table 3: Regression Estimation

Variable	Coefficient	Std. Error	t-Statistic	P-value
C	1.515726	0.644230	2.352771	0.0302
$logDDY_t$	-5.652365	0.822127	-6.875290	0.0000
$logEDY_t$	-7.411823	0.944813	-7.844752	0.0000
$logPDSY_t$	-0.675935	0.553267	-1.221716	0.2376
R-squared	0.901	Adjusted R-squared		0.874
F-statistic	32.88*	Durbin-Watson stat		1.996

Source: Result extract from Eview, Note * indicates significance at 1%

From the results in Table 3, the R-square indicates that 90% of the systematic variation in the dependent variable (Yt) is accounted for by the independent variables (DDY_t - domestic debt to GDP ratio at time t, EDY_t - external debt to GDP ratio at time t, and $PDSY_t$ - public debt servicing to GDP ratio, at time t). The F-statistic shows that the model as a whole is significant at the 1% level. The D-W statistic which is approximately 2 indicates the absence of serial autocorrelation in the model.

All the independent variables conformed to apriori expectations. All the independent variables are significant except $PDSY_t$ (public debt servicing to GDP ratio). Domestic debt to GDP ratio (DDY_t) has a negative significant impact on GDP because the *p-value* (0.00) is less than 0.05. The coefficient of the DDY_t shows that 1% increase in domestic debt in relation to GDP will negatively impact on the economy by 5.65%. On external debt, the result shows that 1% increase in external debt in relation to GDP will negatively impact on the economy by 7.41% and has a significant impact on the GDP because the *p-value* (0.00) is less than 0.05. Lastly, the results revealed that public debt servicing has an insignificant impact on the GDP because the *p-value* (0.24) is greater than 0.05.

Discussion of Findings
It was found that domestic debt to GDP ratio has a negative significant effect on economic growth in Nigeria. This finding is in consonant with the findings of Adofu & Abula (2010) Emmanuel (2012) and Aminu, Ahmadu & Salisu (2013) whose studies

revealed that domestic debt has an adverse effect on economic growth. However, the finding does not conform with the findings of Saifuddin (2016) and Ujuju & Oboro (2017) who discovered that public debt is beneficial to economic growth and development. It was also revealed that external debt contributes negatively to economic growth in Nigeria. This finding is in accord with Imimole & Imoughele's (2012) study indicating that external debt retards economic growth. It however contrasts with other studies such as Tajudeen (2012), Bettina & Alfred (2014) and Ujuju & Oboro (2017) whose findings indicated that external debt is positively related to economic growth.

Conclusion and Recommendations

Public debt in Nigeria has been increasing over the years and the issue of the sustainability of the debt level has generated a lot of debate which gave impetus for this study. From the study, it was revealed that domestic and external debts have significant negative impacts on the growth of Nigeria economy while public debt servicing was found to have a negative insignificant impact on the economy. Nigeria being a mono export economy should be careful in negotiating and structuring its debts as too much domestic debt will lead to crowd effect while same for external debt will lead to exchange devaluation. Government in all level should be prudent and clinical in seeking for loans to avoid incurring the negative impact of debts to the economy. Also, public debts should be invested into projects such as agriculture and infrastructural development that are productive and self-financing so that the projects can liquidate the debts and interests. Borrowed public funds should be channeled into projects for which they are intended and frivolous spending of such funds should be highly discouraged.

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