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ASSESSING THE IMPACT OF PUBLIC DEBT ON ECONOMIC GROWTH IN NIGERIA (1985-2021)

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ABSTRACT
This study examines the impact of public debt on Nigeria's real Gross Domestic Product covering the period 1985 – 2021. Having sourced data from the Central Bank of Nigeria Statistical bulletin, the study adopted the vector error correction model to analyze both the long run and short run impact of external and domestic debt stock on the Nigerian economy. Variables used in the study are; External debt stock, Domestic debt stock and Real Gross Domestic Product. Results shows that in both the long run and short run, the external debt shock was found to have a positive impact on the economy which implies that it serves as one of the drivers of economic growth in the country while the domestic debt stock was found to have a negative impact on the country's RGDP. The study finally recommended a reduction on domestic borrowing by the government which has the potential of limiting the flow of loanable funds to the private sector and become a dent on sustainable economic growth.

Keywords: Public Debt, External Debt Stock, Domestic Debt Stock, Real Gross Domestic Product, VECM.

1.0 INTRODUCTION
Rising public debt is one of the major problems affecting developing countries and a subject of public debate from citizenry, professionals and policy makers. Hence, lots of research scholars are of the opinion that public borrowing is wasteful and undesirable while others are of the view that public borrowing is an important tool of the government to affect economic activities (Idris and Ahmad, 2017).The nature at which Nigerian Government engage in debt accumulation in recent years is quite alarming with the objective of attaining economic growth among other objectives. However, there is a general believe that despite

many years of borrowing both internally and externally, not much can be showcased as an attendant positive impact on the Nigerian economy. The inability of Nigeria to optimally exploit domestic resources to fill the usual budget deficit accumulated in the country over the years occasioned the consistent dependence on public debt especially foreign which is often typified by adverse lending conditions, instability of foreign exchange rates and the potential repudiation that occasions debt overhang, hence exerting negative effects on the economic growth of Nigeria (Akinwunmi and Adekoya, 2018). This issue has also been ascertained to impede domestic capital creation thereby triggering the reduced provision of basic amenities for citizens in the country (Udoka et.al, 2010).

However, researchers do not precisely agree on how public debt impacted an economy. Different researchers weigh in by using different econometric techniques in ascertaining the impact of public debt on economic growth. For Example, Adenike *et al.* (2007), Uma *et al.* (2012), and Aminu *et al.* (2016) etc. used OLS technique to examine the impact of public debt on economic growth and their findings turn out to be positive/significant, negative/insignificant and some turn out to be neutral on their effect to the economy. Frempong and Otemg-Abayie (2006), and Adesola *et al.* (2015) employed VECM technique and some variables were statistically significant while some have negative relationship.

Therefore, this issue required to be re-considered looking at the trend at which huge debts are being accumulated by the successive governments in recent years and with the rise in poverty, inequality, corruption, inflation, poor infrastructural development and a host of other economic problems.The lack of a consensus surrounding the outcomes of public debt accumulation on economic growth either positively or negatively with most of the studies about the same country or geographical area is related to the methodological differences and also the nature of the studied data employed, which are generally very diverse and often contradictory. These variations suggest an ensuing controversy in the literature about growth and public debt relationship. There is the need for a further empirical investigation into the subject matter although these empirical studies have provided some explanation on the growth and public debt linkage for developing countries.Therefore, it is based on the aforementioned case scenario that this research work investigates the impact of public debt on economic growth in Nigeria.

2.0 LITERATURE REVIEW

2.1 Review of Existing Evidences

Chinonso and Ngozi (2021) empirically investigated the effect of public debt on economic growth in Nigeria, covering the period 1981-2018. Employing a co-integration approach,

the study revealed prominent among others that a significant short-run relationship exists between Nigeria's public debt and economic growth. Also, the study further showed that whereas both the domestic debt and the external debt variables were statistically significant, only the latter failed the a priori expectation test and thus, exerts a negative contribution to economic growth in Nigeria.

Abdulkarim and Saidatulakmal (2021) investigated the effect of government debt on Nigeria's economic growth using annual data from 1980 to 2018 and the Autoregressive Distributed Lag technique. The empirical results showed that external debt constituted an impediment to long-term growth while its short-term effect was growth enhancing. Domestic debt had a significant positive impact on long-term growth while its short-term effect was negative. In the long term and short term, debt service payments led to growth retardation confirming debt overhang effect.

Siong et.al (2021) investigated the impact of public debt and economic growth in developing countries: Nonlinearity and threshold analysis, using a dynamic panel threshold technique, this study provides new evidence on the threshold value of the ratio of public debt to the gross domestic product in seventy-one developing countries from 1984 to 2015. They showed a threshold debt value of 51.65 percent, which is much lower than in the previous literature. Debt has a negative and statistically significant impact on economic growth at a high level of public debt but an insignificant effect at a low level of public debt. The findings also revealed that better institutions tend to minimize the negative impact of public debt on economic growth.

Sam (2021) examined the impact of public debt on economic growth: contemporary evidence from a developing economy (particularly Ghana). The study adopted a dynamic multivariate autoregressive distributed lag (ARDL)-based Granger-causality model to test the causal relationship between public debt and economic growth over the period 1970-2018. Results revealed that public debt has no causal relationship with GDP in the short run but there is unidirectional Granger causality running from public debt to GDP in the long run. Investment spending has a negative bi-directional causal relationship with GDP in the short run but they have a positive bi-directional causal relationship in the long run. Conversely, no short run causal relationship exists between government consumption expenditure and GDP but long run Granger causality runs from government consumption expenditure to GDP.

Attahir and Suleiman (2020) examined the effect of public debt on the economic growth of OECD countries by disentangling the effect into permanent and transitory components.

The study covers thirty seven OECD countries. The Mundlak decomposition was employed to decompose the effect of public debt into its transitory and permanent effect on economic growth. To account for potential endogeneity problem, the Hausman and Taylor estimator was employed to estimate the decomposed model. The findings of the study revealed that in the full Organization for Economic Cooperation and Development (OECD) model, public debt exerts a significant negative permanent and positive transitory effect on economic growth.The magnitude of the negative permanent effect of debt was found to be larger than the positive transitory effect.
Nur et.al (2019), examined whether there exists mutual consensus on the effects of public debt on the economic growth of a country or group of economies. A systematic review on related articles from SCOPUS database was conducted by adopting a standard procedure in the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA), namely identification, screening and eligibility. He used Thirty Three (33) articles as the main articles to be reviewed. It was found that there is no mutual consensus on the relationship between public debt and economic growth. The relationship can be positive, negative or even non-linear.

Solomon (2019) examined the trend of public debt, economic growth, and the relationship that exists between debt (both external and domestic) and growth in Ghana using time series data from 1965 to 2017. The study used the Ordinary Least Square (OLS) Model to establish the relationship between public debt and economic growth, with robust standard errors. The study found a positive correlation between public debt and economic growth for the era under consideration.

Ebenezer et.al (2018), assess trends in Ghana's debt, and the relative effect of debt on the economy. The present study relied on the quantitative approach to scientific inquiry. Specifically, a cross-sectional design, an example of survey design, was adapted and used in the research. Descriptive statistics and regression models were used to describe the research variables; and to evaluate their behavior over the stated time frame in the Ghanaian and other economies. Findings from the research revealed a positive relationship between debt and the economy; the findings revealed debt accounts for about 98% of the variation in GDP.

Akhanolu et.al, (2018) evaluated the effect of public debt oneconomic growth in Nigeria. The quantitative research technique was adopted, secondary datafrom 1982-2017 was gathered. Inferential analyses were conducted and findings from the study demonstrated that internal debt exerts a positive impact on economic growth while and externaldebt

revealed an inverse relationship with economic growth. Premise on the findings, the study suggested that borrowed funds particularly external debt should be minimized.

2.2 Recent Development in Nigeria's Debt

The Central Bank of Nigeria`s yearly statistical bulletin showed that as at December 2015, Nigeria`s external and domestic debt stood at USD 10,718.43million and ₦8836.99 billion respectively. In year 2016 it experienced a slight increase in both the external and domestic debt, which amounted USD 11,406.28 million and ₦11058.20 billion. From 2017-2020, the Nigerian Governments embark on huge borrowing in order to finance its budget deficit that stood at USD 105212.02 million and ₦55660.4 billion for external and domestic debt respectively.

3.0 METHODOLOGY

3.1 Model specification

In order to find the relationship between public debt and economic growth, the empirical model of this research work shall follow the work of (Lerner 1944; and Favour *et.al 2017*). In Favour *et.al* (2017), work, the study examined Public Debt and Economic Growth in Nigeria using variables such as real gross domestic product, public debt, external debt, domestic debt and domestic private savings. In this research work, real gross domestic product is the explained or dependent variable while external debt and domestic debt are the explanatory variables. The study further adopted the vector error correction model to analyze the relationship between the variables of interest in the study. Results generated from the co-integration test and estimated coefficients of the VECM were used to make predictions and conclusions for the work.

3.2 Theoretical Model

The modification of the model shall be specified in to a functional or implicit form as stated below for Nigeria:

$$RGDP = (DDS, EDS) \quad (3.0)$$

RGDP= Real Gross Domestic Product
EDS= External Debt Stock
DDS= Domestic Debt Stock

The modified model is specified of its explicit form:

$$RGDP_t = \beta_0 + \beta_1 DDS_t + \beta_2 EDS_t + \mu_t \quad (3.1)$$

Where:
t represents the scope of the study, that is 1985-2021
μ = Error term
β_0 = Intercept
To remove biasedness among variables, the study logged RGDP, DDS, and EDS which transformed equation (3.3) into a log linear model. i.e:

$$\ln RGDP = \beta_0 + \beta_1 \ln DDS_t + \beta_2 \ln EDS_t + \mu_t \quad (3.2)$$

3.3 The Basic VAR

The basic vector auto regression (VAR) can be written as;

$$X_t = A(L) X_{t-1} + U_t$$

Where X_t is a vector of variables namely (RGDP, DDS, EDS) meaning Real Gross Domestic Product, Domestic Debt Stock and External Debt Stock respectively.While "A (L)" is an autoregressive lag polynomial.
The vector $U_t = (U^{RGDP}, U^{DDS}, U^{EDS})$ is a vector of error terms that contains the reduced form residuals which in general will represent a non-zero correlation.

4.0 RESULTS AND DISCUSSIONS

4.1: Unit Root Test

The variables in the model were subjected to unit root tests to determine whether they are stationary or not. The unit root test helps to determine the stationarity of variables. For the purpose of this work, the unit root test that is used is the Augmented Dickey-Fuller (ADF) test. The Null hypothesis states that each of the variables has unit root, that is, each is non-stationary whereas the Alternative hypothesis states that each variable does not have unit root, that is, each variable is stationary.

Table 4.0: Unit Root Test Result

VARIABLES	LEVEL	1st DIFFERENCE	ORDER OF INTEGRATION
LOGRGDP	-0.753882 (0.8192)	-3.636638 (0.0101)	I(1)
LOGDDS	-O.980863 (0.2935)	-O.526926 (0.0010)	I(1)
LOGEDS	-1.669303 (0.4373)	-4.66690 (0.0020)	I(1)

Note: Values in parenthesis represent probability values.
Source: Author's Computation (E-views)

From the Unit Root test result in table 4.0, it is evident that all the variables are stationary at first difference because of the respective probability values that are less than 0.05 at first difference implying that their order of integration is one (1). To this end, we concluded that all the variables are non-stationary at level, that is, the variables contain no unit root and are therefore stationary at first difference.

4.2 Co-integration Test

The result of the unit root test on the variables revealed that they are all integrated of order 1 that is they are stationary at first difference. Performing a co-integration test is necessary to establish the long-run relationship. The results of the Johansen co-integration test for the model is presented below.

Table 4.1: Co-integration Test

Variables	Trace statistics	Prob*	Max-Eigen Statistics	Prob*
LOGRGDP	70.81840	0.0415	35.22347	0.0344
LOGEDS	35.59493	0.4170	17.76418	0.5148
LOGDDS	17.83075	0.5786	13.65628	0.3939

Source: Author's Computation (E-views)

Table 4.1 above shows the Johansen co- integration test result for the model. It reveals that the null hypothesis of no co-integration is rejected since the probabilities of the trace and max-eigen statistic for LOGRGDP are 0.041 and 0.034 and are both less than 0.05. This means that there is a long run relationship among the variables in the model. This leads to the adoption of the vector error correction model.

4.3 Estimated Coefficient (Short Run & Long Run) of Vector Error Correction Model

TABLE 4.2: Long Run

Variables	Coefficient	Standard Error	T-statistic	Prob.
LOGRGDP(-1)	1.000000			
LOGEDS(-1)	7.618591	5.97093	1.27595	0.0000
LOGDDS(-1)	-7.515428	5.80248	-1.29521	0.1183
C	36.85189			

Source: (Author, 2022)

The table above presents the value of the estimated vector error correction long -run coefficients with gross domestic product as the dependent variable. The coefficient of the external debt stock being positive at 7.62 shows that, in the long run,external debt stock has a positive impact on RGDP Nigeria. More explicitly, it shows that the percentage increase in external debt stock leads to 7.61% increase in RGDP. This conforms to the findings of Solomon, (2019) who found a positive impact of external debt economic growth and negates the findings of Akhanolu, (2018) that found a negative impact of external debt on GDP.

The coefficient of the domestic debt stock is negative. This implies that a percentage increase in the domestic debt stock will lead to -7.52%declines in RGDP in the longrun. This result contradicts the findings of Akhanolu (2018) that found a positive impact of domestic debt on real GDP.

Table 4.3: Short Run

Variables	Coefficient	Standard Error	T-statistic	Prob.
Adjustment coefficient	6.25E-05	0.00020	0.31104	0.1256
LOGRGDP	0.430822	0.19413	2.21926	0.0008
LOGEDS	0.005288	0.01465	0.36098	0.1256
LOGDDS	-0.085065	0.04389	0.36098	0.0038
C	0.037580	0.01297	2.89845	0.0027

Source: (Author, 2022)

The table above depicts the result of the short run relationship between the variables. This starts with adjustment coefficient of the model which shows that the previous period deviation from long run equilibrium is corrected in the current period as an adjustment speed of 6.2%. Similarly, it can be seen that if all the variables are held constant, the RGDP will be 0.037580. This could be credited to the contribution of other variables to the growth of the GDP which are not included in the model.

A percentage change in external debt stock is associated with a 0.0053% increase in real gross domestic product from average in the short run. This finding is in tandem with the findings of Ebenezer et.al (2018) that established a positive impact of external debt on

economic growth and disagrees with the findings of Abdulkarim and Saidatulakmal (2021) that found a negative impact of external debt on real GDP. Likewise, domestic debt is negative which signifies a percentage change in domestic debt stock is associated with a -0.085% decrease in real gross domestic product in the short run.

5.0 CONCLUSIONS & POLICY RECOMMENDATIONS

This study examined the impact of public debt on economic growth in Nigeria over the period 1985-2021. The study employed the Vector Error Correction Model due to the outcome of the stationary test conducted on the variables and it was deemed suitable for this study. The study concluded that external debt stock serves as a driver for the growth of real GDP of Nigeria and that domestic debt stock slows down the growth of real GDP in the country. This implies that the Nigerian government should secure more foreign loans in comparison to domestic credit anytime it finds itself in a situation that it must borrow to fund developmental projects in the country. Arising from the findings of the study, it is recommended that there should be close monitoring of government borrowing through the domestic market in order to regulate what is being borrowed considering the fact that it was found to have a negative effect on real GDP of the country. This implies that excessive borrowing domestically can lead to the problem of crowding out effect which reduces the availability of loanable funds to the private sector and hereby slows down growth. In furtherance to that, the government should ensure that contracted national debts are directed towards encouraging investment in the country so as to increase capital formation in the countryand consequently place the country on the path of sustainable economic growth.

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