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PUBLIC DEBTS STOCK AND ECONOMIC GROWTH

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ABSTRACT

This research study examines the effect of public debts stock on the Nigeria's economic growth framework from 1981–2019. Secondary data sourced from Central Bank of Nigeria Statistical Bulletin of various issues as well as the National Bureau of Statistics Bulletins were used in the study. The variables employed to capture the changes in the economy are, domestic debt (DD), foreign debts (FD), foreign exchange (EXR), inflation (INF) and debt financing (DF) while the dependent variable is per capita income (PCI). The analytical technique of Autoregressive Distributed Lag model was used to analyze the data: Descriptive Statistics, Unit Root Tests, Bounds Cointegration Tests and ECM were employed in the estimation. The result revealed that public debts predict economic growth in Nigeria and that the major causality is coming from the negative impulse of foreign debts before considering the permanent effect off domestic debts. This by implication means that foreign debts have both temporary and permanent effect on economic growth. We recommend that borrowing should be for the establishment of lucrative industries such as agro-business and manufacturing industries that will stimulate economic growth.

Keywords: Domestic Debt, Foreign Debts, Inflation, Debt Financing, Per Capita Income.

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INTRODUCTION

Third world countries engage in more borrowing to finance their budget deficits and critical infrastructures most of the time than developed countries with strong institutions and adequate checks and balances. the borrowed funds are invested in projects for which they were contracted. Poor capital formation is the major problem facing low-income countries coupled with regular balance of payment deficit, budget deficit and decline in productivity growth amidst increasing population (Soludo, 2003). According to the World Bank, by 2018, the total external debt of

SSA stood at \$671.1 billion and by first quarter of 2020, the total debt had increased to \$817.5 billion (WDG,2018). About 60 percent of these loans were serviced with foreign exchange earnings generated from the sales of crude oil. To this end, Uden (2013), asserted that debt servicing if not properly handled will amount to a drastic delay in the developmental of the nation. Thus, payments of debt and interest hinders the growth of most highly indebted countries leading to the quest for debt cancellation or renegotiation of the interest rate.

Development plans of countries with limited capital in African, Latin America, Asia etc. has been heavily tied to loans secured domestically and internationally and the experience of Nigeria is no exception to the ugly situation envisage in recent history. The debt profits of Nigeria have increased from \$1 billion in 1971 to \$40 billion in 2005 before the acceptance of the international monetary fund (IMF) sponsored structural adjustment programme that led to the cancellation of major proportion of Nigeria debt (WBG, 2018). Domestic debts are generally incurred from domestic commercial banks, the central bank, rich organizations and very rich individuals Mwizerwa and Bikorimana (2018). The mounting nature of Domestic Debt has in several occasion made the apex bank in Nigeria (the central bank) raise alarm as the nation risk sliding into recession or subsequent case of debt over-hang. The situation in which the productivity growth or the Gross Domestic Product cannot settle the total debt owned or the servicing of the debt contracted is what the central bank governor Godwin Emiefele has feared (DMO, 2017). By the year 2000, Nigeria's total public and publicly guaranteed debt (external and domestic) stood at \$13 billion, and by 2016, the amount had grown to \$47 billion. By 2018, it has grown to more than \$55billion (DMO,2017). A breakdown of these loans in 2016 reveals that \$11 billion (24%) are external loans while \$36 billion (76%) are domestic. For Nigeria, total debt as a percentage of Gross Domestic Product (GDP) rose from 5% in 1980 to 12% in 2016 (DMO, 2017). Since external debts must be serviced in hard currency such as the dollar or pound, a better measure of the ability to service these loans would be export earnings (Mwizerwa & Bikorimana, 2018).

Economic literatures seem to suggest that research on the segregated effect of external debt and domestic debt on economic growth in Nigeria are still in its infantry stage with mixed results, Bashir and Reza (2016). This study therefore adds to the existing body of knowledge or literature by examining whether or not domestic and external debt have differential impact on economic growth in Nigeria. The study is clearly warranted because, first, Nigeria is heavily indebted; it is the largest country in SSA both in population and GDP, and the country is looked upon as the future of SSA if she can get her house in order. Therefore, economic progress or the lack thereof in Nigeria has implications for the rest of SSA in general and Nigeria in particular (Ijirshar et al., 2016). The paper is structured in three sections. Following this introduction is section two which deals with the review of relevant literature. Section three deals with the methodology used in the study in the form of; research design, source of data, model specifications. Section four present the data analysis, discussion of findings, summary and conclusion.

CONCEPTUAL CLARIFICATION

Public Debts

Debt could mean anything to different people. However, it is regarded mainly as that which an entity legally owes to another agreed to be repaid in the future. It is an obligation that is

enforceable by legal action to make payment of money (Adofu & Abula, 2010). It may also be a financial guarantee or commitment that ought to be honored in due time as agreed. Asogwa (2008), opined that debt is a contractual obligation of owing or accumulated borrowing with a promise to pay back at a future date. From the perspective of the government, debt may be contracted from within the country (domestic debt) using one instrument or the other and denominated in local currency, or from outside the country (external debt) and denominated in foreign currency.

Domestic Debts

These categories of debt can only be contracted due to paucity of resource from taxations and the sales of fossil fuel deposit whose price is regulated externally. Domestic debts refer to the domestically contracted fund from Domestic financial institutions such as the central bank, commercial banks, organizations and rich individuals. In almost all of sub-Saharan Africa, there is a high degree of indebtedness, high unemployment, absolute poverty and poor economic performance despite a previous culture of massive foreign aid. In recent years, several developing countries adopted aggressive policies aimed at retiring external debt and substituting it with domestically issued debt. From current to future taxation could imply shifting of the tax burden from the current to future generations. Domestic debt is sourced from the central bank of Nigeria will have no impact on the Economy since it will not increase the rate of interest charged by the commercial banks but in the long run, when the Government resort to borrowing from the open market, the contraction of Domestic loan will impact negatively on the Nation's Economy as the interest rate becomes unbearable for the investors to get leading to crowding out. Crowding out of this kind will make interest rate higher than what the private investor can accept leading to productivity slow down. However, the macroeconomic impact of domestic debt is that it will have a positive impact on economic development in the short run and negative impact in the long run when sourced from the open market. Domestic debt as used in this research work is the internally sourced income.

External Debt

In the event of the declining trend in world oil prices, the Nigerian Government has been facing difficulties in financing deficit budgets and developmental projects. This led to borrowing from external sources such as World Bank, International Monetary Fund (IMF) and Paris Club amongst others. The responsibility of scaling external debt among other issues led to the establishment of other departments in the Central Bank of Nigeria to undertake the functions in collaboration with the Federal Ministry of Finance (FMF) and other relevant agencies. Since the 1980s, Nigeria has devised several debt management policies to make the debt-service burden bearable and avoid defaulting. The embargo on loans policy was placed in 1984 and 2016 to state governments from borrowing externally. The cardinal objective of the policy was to check the escalation of the debt stock as to minimize the problem of the additional debt burden. Before the 1984 policy, the Federal Government fixed the maximum level of debt for both the federal and state governments. For example, an upper limit of \$5 billion was for the federal government in 1978 and 1982 while \$200 million for the state government. The embargo was lifted in January 1989. In February 1988, comprehensive guidelines were introduced with the aim of evolving strategies for increasing foreign exchange earnings and consequently reducing the need

for foreign borrowing. Various measures were undertaken to ensure implementation of the guidelines such as; an embargo on new loans, limit on debt service payments, debt restructuring and debt conversion programme.

Debt Financing

Debt serving is a contractually fixed charge on domestic real income and savings. As the size of debt grows, or as interest rate rises, debt services charge increases. Debt service payment is made only with the export earning, curtailed import, or with further external borrowing. Thus, if the export earning diminishes, debt-service difficulties are likely to arise. IMF (2003) defines debt service as the payments required to be made in respect of both principal and interest for an existing loan. According to Merriam-Webster (2019) debt service is the amount of interest and sinking fund payments due annually on long-term debt. According to IMF (2003), actual debt service is the set of payments made to satisfy a debt obligation, including principal, interest, and any late payment fees. On the other hand, scheduled debt service is the set of payments including principal and interest, which is required to be made throughout the life of the debt (IMF, 2003). The macroeconomic implication of debt servicing is that it will have a negative impact on the nation's economy in both the short and long run. The danger is that it may lead to too much dependency on foreign loans and debt overhang.

THEORETICAL FRAMEWORK

In the theoretical literature, budget deficit financing, monetary policy implementation and financial sector development (supply of tradable financial instruments to deepen the financial markets) are among the main justifications for government domestic debt.

Debt Over-Hang Theory

This theory is built on the principle that if the level of debt will surpass the country's ability to repay with some probability in the future, estimated debt service is expected to be a growing function of the country's output level. Therefore, some of the returns obtained through investing in the domestic economy are efficiently taxed away by current foreign creditors and the investment made by domestic and now foreign investor is not encouraged. Debt servicing, which includes interest payments and repayments, is likely to be a factual link from an indebted country. It only takes large benefit from the domestic economy to be able to allocate to the foreign economy. Therefore, the country declines some outstanding multiplier-accelerator effects.

Dependency Theory

Dependency theory states that the poverty of the countries in the periphery is not only because they are not integrated or fully integrated into the world system, as it is often argued by free-market economists, but because of how they are integrated into the system. From this standpoint, a common school of thought is the Bourgeoisie scholars, who are of the view that the state of underdevelopment and the constant dependence of less developed countries on developed countries are as a result of their domestic mishaps. They believe this issue can be explained by

their lack of close integration, diffusion of capital low level of technology, poor institutional framework, bad leadership, corruption, mismanagement etc. The proponents of this School of Thought see the underdeveloped dependency of the third world countries as internally inflicted rather externally afflicted. To this school of thought, a way out of the problem is for third world countries to seek foreign assistance in terms of aid, loan, investment, etc, and allow uninterrupted operation; of the Multinational Corporations (MNCs).

Solow Growth Model

The Solow growth model is built on a closed economy framework, which makes use of labour and capital as its means of production. Under this scenario, the implication of external debt on growth can be seen through its effect on the domestic saving which in turn is used as an investment in a closed model. The general effect of external debt on the Solow growth model can be analyzed by looking at the individual effects of the debt overhang and debt crowding theories on the Solow growth model. According to the debt overhang hypothesis, the government in an attempt to amortize the accumulated debt will increase the tax rate on the private sector (as a means of transferring resources to the public sector). This will discourage private sector investment and also reduce government expenditure on infrastructure as the resources are used to pay up huge debt service payments instead of being put into good use. This leads to a reduction in total (private and public) investment in the economy and a downward shift of both the investment and production function curves in the Solow growth model. On the other hand, in the case of debt crowding out, in a bid to clear their outstanding debts, the government makes use of their revenue from export earnings and in some cases transfer resources including foreign aid and foreign exchange resources to service their forthcoming debt. Those countries which transfer revenue from export earnings which can be used in investment in the economy to avoid huge debt payments will discourage public investment. This, in turn, will decrease economic growth and will shift both the investment and production function curves in the Solow growth model downward.

Review of Related Empirical Studies

Lotto and Mmari (2018) investigated the impact of domestic debts on economic growth in Tanzania. The study used multiple regression estimation covering the period 1990 to 2015 and variables such as; inflation (INF), domestic debt (DD), gross capital formation (GCF), foreign debt (FD), debt servicing (DS) and gross domestic product (GDP). The result indicates that, there is an inverse but insignificant relationship between domestic debt and economic growth in Tanzania. Also, that Inflation (INF) has a negative effect on GDP growth rate, but the relationship is not statistically significant, while gross capital formation (GCF) has a positive statistically significant effect on GDP growth rate. Furthermore, foreign direct investment (FDI) showed a positive effect on the GDP growth rate and export (X) has a positive effect on GDP growth rate, and the relationship is statistically significant explaining that if a country applied an export-led growth economic strategy it enjoys the gains of participating in the world market.

Zhou, et al., (2018) examined debt accumulation between enterprises and debt repayment of local government which is linked with a local government guarantee that acts as a debt transferring mechanism. Employing feasible generalized least squares regression model in testing the hypotheses, the sample data include debts of non-financial industries, bad loans of

commercial banks and debt repayment of local governments in nineteen provinces that are published from the official database of National Ministries over the period from 2007 to 2016. The results demonstrated that there is a positive relationship between enterprise debts and the debt repayment of local governments. This research verifies the positive relationship between enterprise's bad loans of bank and the debt repayment of local governments through introducing debt risk transferring mechanism, and thus provides empirical evidence for central government to prohibit the debt guaranteed of local governments and to enforce hard budget constraints.

Adi (2017), investigated the effectiveness of fiscal policies measured by the impact and cumulative multipliers and how they interact with public and private debt. Harnessing the moderated panel regression approach, based on the yearly data set of several economies during the period from 1996 to 201, a panel data regression estimation was conducted. The result indicates that increase in public expenditures contemporaneously generates a positive multiplier of around 0.29-0.44 and around 0.45 – 0.58 for two years. Decomposing the expenditures into their elements, the result indicates that public investment impacted stronger than that from government purchases. On the other hand, the revenue stimuli seem to follow the Ricardian Equivalence Hypothesis (REH), arguing that current tax cuts are inconsequential. Finally, this paper documents that both public and private debt exhibit negative and statistically significant estimates for economic output.

Bashir and Reza (2016), investigates the impact of external debt on the real economic sector in selected countries from central, eastern and south-eastern European countries during the period 2000-2014. The results of the Generalized Method of Moments based on a dynamic panel data indicate that the impact of external debt on gross domestic product was negative and significant. It was therefore recommended that external debt should be properly applied in which increase the investments with a high rate of return. Our empirical findings send a warning about the need to keep the external debts under control. Ijirshar et al. (2016), examined the relationship between external debt and economic growth in Nigeria for the period of 1981-2014. The study used both descriptive and econometric tools. The analysis of unit root was performed on each of the variables incorporated in the model and the result showed that all the variables were not stationary at level but achieved stationarity after first difference at 5% level of significance. The regression results showed a significant relationship between external debt and economic growth in Nigeria. External debt stock impacted positively while external debt service impacted negatively on the annual growth rate of the Nigerian economy both in the long run and the short run.

Mencinger et al. (2015), empirically explores the factor of public debt which considerably changes the mechanism that transmits fiscal policy effects to economic activity in the short term and the factors that determine the turning point of debt-to-GDP ratio and evaluated the impact of levels of indebtedness in the public sector on current economic growth for a panel dataset of 36 countries (31 OECD member states and 5 non-OECD EU member countries). The evaluation gives us an important understanding on the current indebtedness situation by determining the threshold values for the sample of countries, which indicates a possible non-linear and concave connection between indebtedness levels in the public sector and economic growth in the short term. The sample is divided into subgroups distinguishing between so-called developed economies, covering the period 1980–2010, and emerging economies, covering the period 1995–2010. To evaluate a possible negative correlation and concave functional form between public debt and potential economic growth, the study employed a panel estimation technique on a generalized economic growth model augmented with a debt variable, while also

considering some methodological issues like the problems of heterogeneity and endogeneity. The results confirmed that general theoretical assumption which state that, at low levels of public debt, the impact on growth is positive, whereas beyond a certain debt turning point a negative effect on growth prevails. Further, it was calculated that the debt-to-GDP turning point, where the positive effect of accumulated public debt inverts into a negative effect, is roughly between 90 % and 94 % for developed economies. Yet, for emerging countries, the debt-to-GDP turning point is lower, namely between 44 % and 45.

Nawaz et al. (2012) examined the long run and short-run dynamics of external debt and economic growth in Pakistan. For this purpose, the study employed the Johansen cointegration test and Granger causality test. The empirical analysis covered the study span from 1980 to 2010, showing the evidence of a long-run relationship between external debt and economic growth. In the short run, bidirectional causality existed between external debt and economic growth. Rais and Anwar (2012) applied the OLS technique to determine the effects of domestic and external debt on GDP in the case of Pakistan for the period of 1972 to 2010. The study found that both external and internal debt has a significant inverse effect on the GDP. El-Mahdy and Torayeh (2009), examined the sustainability of debt using data from 1981-2006. Employing some algebra methods, the results obtained from the cointegration model revealed that the public domestic debt in Egypt has a robust negative impact on growth. The results further recommended that the recent path of debt followed in Egypt was sustainable. For debt to remain sustained in future, substantial fiscal reforms are needed and policies should be adopted to maintain an increasing growth-interest rate differential.

METHODS

This section is designed to explain the methods which the researcher used in analyzing the various data in this work. It specifically looked at the research design, model specification, variables in the model, data required/sources and method of data analysis, interpretation of result, summary, conclusion and recommendation.

Research Design

Research design deals with how the study is brought into the scope of the research. This study will adopt quasi-experimental research design since it appeared to be the most suitable research design for social sciences.

Source of Data Collection

Data for the study was derived mainly from the secondary sources, which include Central Bank of Nigeria (CBN) statistical bulletin, Nigeria stock exchange (NSE) annual report, National Bureau of Statistics (NBS), World Bank Group, Transparency International, textbooks articles, journals and the internet. This data was estimated using Econometric package (E-Views) version 10.5 statistical application package.

Model Specification.

To test the theories on the effect of public debts on economic growth in Nigeria using time series data set spanning from 1981 to 2019, this study employs the (ARDL) modelling approach. The Auto-Regressive Distributed Lag (ARDL) approach as developed by Pesaran, shin and smith (2001). The advantages of the ARDL approach are that the bounds testing approach in the ARDL model, can be estimated by ordinary least square (OLS) once the model lag order is identified, the long-run and short-run parameters of the model can be estimated simultaneously if series consist of purely I(0), purely I(1) or combination of I(0) and I (1) series provided it is not I(2). According to Pesaran et al., (2001), a conditional ARDL(p,q) error correction model (ECM) is specified as

$$\Delta y_t = c_0 + c_1 t + \pi_1 y_{t-1} + \pi_2 y_{t-2} + \dots + \pi_{p-1} y_{t-p+1} + \omega \Delta x_t + \mu_t \quad (1)$$

$$t = 1, 2, \dots, N$$

$$\Delta x_t = p_1 \Delta x_{t-1} + p_2 \Delta x_{t-2} + \dots + p_s \Delta x_{t-s} + \varepsilon_t$$

Where x_t is the K-dimensional I(1) variable that are not cointegrated among themselves, μ_t and ε_t are serially uncorrelated disturbances with zero means and constant variance – covariances, and p_i are KxK coefficient matrices such that the vector autoregressive process in Δx_t is stable. Whereas the functional and stochastic form of our models will be presented as:

Model

$$PCI = f(DD, FD, DF, INF, EXR)$$

$$PCI = \alpha_0 + \alpha_1 DD + \alpha_2 FD + \alpha_3 DF + \alpha_4 INF + \alpha_5 EXR + U_i \quad (2)$$

Where;

PCI	=	Per Capita Income
DD	=	Domestic Debts
FD	=	Foreign Debts
DF	=	Debt Financing
INF	=	Inflation
EXR	=	Exchange Rate
U_i	=	Disturbance Term
α	=	Intercept

The a priori expectations are $\alpha_1, \alpha_2, >0$ and $\alpha_3, \alpha_4, \alpha_5 < 0$
 $\alpha_1 - \alpha_5 =$ Coefficients of the independent variables.

The following ARDL is estimated in line with Pesaran et al. (2001) as

$$\Delta PCI = \beta_0 + \beta_1 PCI_{t-1} + \beta_2 DD_{t-1} + \beta_3 FD_{t-1} + \beta_4 DF_{t-1} + \beta_5 INF_{t-1} + \beta_6 EXR_{t-1} + \mu_t \dots \dots \dots (3)$$

Δ is the first-difference operator, μ_t is the error term which is white noise with standard deviation. β_s measures the intercept and coefficient of the variables and PCI is economic growth index; one lag of the dependent variable (PCI_{t-1}) is included because the study believe that

economic growth is a dynamic concept. Adopting the autoregressive distributed lag (ARDL) bounds testing approach to test for the existence of a cointegrating long-run relationship is based on the F-statistics. The computed F-statistic will then be compared to the non-standard critical bounds values as reported in Pesaran et al. (2001). The optimal lag length for estimating Eq.(2) is selected using the Akaike Information Criteria (AIC) and the Schwarz Bayes Criterion (SBC) given their consistency in selecting models. The lower and upper bounds critical values assumes that the regressors are purely I(0),and purely I(1), respectively. If the computed F-statistic lies below the lower critical values, the null hypothesis of no cointegration is not rejected but if the computed F-statistic lies above the upper critical values, the null hypothesis of no cointegration will not be accepted. The test is inconclusive if the computed F-statistic lies in between the lower and upper critical values. Once the bounds test establishes a long-run relationship between the variables in equation (2), the Error correction model (ECM) will be estimated. The ECM measures the speed of adjustment to restore equilibrium in the dynamic model (Manasseh et al., 2012).

$$\begin{aligned}
 PCIt = \beta_0 + \sum_{i=1}^p \beta_1 PCIt - i + \sum_{i=0}^p \beta_2 DDt - i + \sum_{i=0}^p \beta_3 FDt - i + \sum_{i=0}^p \beta_4 DFt - i \\
 + \sum_{i=0}^p \beta_3 INFt - i + \sum_{i=0}^p \beta_4 EXRt - i + \lambda ECTt - 1\epsilon t \dots (4)
 \end{aligned}$$

Description of Variables used in the Model

S/N	Variables	Measurements	A priori
1	Per capital income	The measure of the amount of money earned per person in the geographical location (total income divided by the population)	+
2	Domestic Debt	The percentage of total loan contracted domestically from 1981 to 2019.	+
3	Foreign Debts	The percentage of total Foreign Debts contracted from 1981 to 2019	+
4	Debt Financing	The percentage of total income spent to service loans from 1981 to 2019	-
5	Exchange Rate	The value of the domestic currency when compared with foreign currency	-
6	Inflation	The annual increase in the price of goods and services	-

DATA ANALYSIS

Descriptive Analysis

	PCI	DD	FD	DF	EXR	INF
Mean	1308.961	2864.248	1722.142	129.1564	106.6165	19.06008
Median	902.2159	898.2500	633.1400	8.250000	101.6973	12.20000
Maximum	3222.694	13856.90	9955.500	741.4500	450.0000	72.80000
Minimum	270.2240	11.19000	2.330000	-5.540000	0.617708	5.400000
Std. Dev.	884.6706	4094.319	2281.098	230.5888	120.0751	17.05707
Skewness	0.557889	1.504643	1.922736	1.877257	1.359430	1.802843
Kurtosis	1.933637	3.961906	4.479858	4.979313	4.202694	3.031984
Jarque-Bera	3.870896	16.21923	43.70775	29.27284	14.36284	27.83615
Probability	0.144360	0.140301	0.057457	0.142545	0.074761	0.000001
Sum	51049.48	111705.7	67163.52	5037.100	4158.045	743.3430

Sum Sq. Dev.	29740396	6.37E+08	1.98E+08	2020506.	547884.7	11055.86
Observations	39	39	39	39	39	39

Source E-views test results

The average of the series which is the mean of the distribution for PCI, DD, FD, DF, EXR, INF are 1308961,286420, 1722142, 1291564, 106.6165 and 19.0601 while the median which complement the mean are 902259, 8982500, 633140, 8.250000, 101.6973 and 12.20000 respectively. The mean value and median shows that the Nigeria economy is at the path for growth if the debts are fully utilized. The median value is not too different from the mean value. The maximum and minimum values for the distribution include 3222.694, 13856.90, 9955.500, 741.4500, 450.0000 and 72.8000 and 2702240, 11.19000, 2.330000 – 5.540000, 0.617708, 5.400000.

The skewness indicates that all the series has right long-tails given their positivity. This on it own indicates that the debt factor is a necessary too to attract positive e growth. The kurtosis which measures the pickedness of the distribution shows that DD, FD, DF, EXR, and INF are pickeds (leptokurtic) while the dependent variable PCI is flat (Platykurtic) relative to normal. Finally, the Jargue-Bera statistic and it associated probability values for PCI, DD, FD, DF, EXR (0.144360, 0.140, 0.057457, 0.142545, 0.07447 and 27.83615) indicates a normally distributed residuals given that their probability values are far more than 5% limit.

Unit Root Tests

Variables	Level		1 st Difference		Order of Integration
	T. Stat.	Critical Value	T. Stat.	Critical Value	
PCI	-0.886657	-2.941146	-4.250926	-3.943427	I(1)
DD	-1.539744	-2.943427	-4.516687	-2.943427	I(1)
FD	-1.605126	-2.943427	-4.721787	-2.943427	I(1)
EXR	-2.041665	-2.941145	-4.454193	-2.943427	I(1)
INF	-4.454192	-2.943427	-	-	I(0)
DF	-2.174697	-3.533083	-5.969581	-3.536609	I(1)

Source Eviews results

The rationale behind this test of stationarity is to ensure that the ARDL assumption of the order of integration of the variables is met. According to Pesaran et al., (2001), the dependent variable must be integrated of order one, I(1), while the independent variable(s) may be integrated of order zero, I(0) or I(1). If any variable is integrated of order two, I(2), then the ARDL testing approach collapses. A close look at the unit root result performed with ADF revealed that PCI, DD, FD, EXR and DF were stationary after first differencing while INF series was stationary at levels. This gives the pre-testing for stationarity of the data a critical importance in the ARDL framework. In the series of the data in use, it can be inferred that there is an existence of series of different order of integrations with the dependent variable as I(1) series. This study applied the Augmented Dickey-Fuller (ADF) test. The presence of series with different order of integration calls for the adoption of Autoregressive distributed lag (ARDL) approach to econometric analysis proposed by Pesaran, Shin and Smith (2001).

Bound Cointegration Result

Test Statistic	Value	Significance	I(0)	I(1)
			Asymptotic n=1000	
F-statistic	13.92348	10%	2.08	3
K	5	5%	2.39	3.38
		2.5%	2.7	3.73
		1%	3.06	4.15

Having established the order of integration of the variables, the next step in the ARDL approach is to test for cointegration among the variables. The Schwarz Bayesian Criterion (SBC) was used to select the appropriate lag length. The result of the ARDL bound test for cointegration shows that the computed F-statistics (13.92348) is significant at 5% level because the computed F statistics exceeds the upper bound critical value (3.38) and therefore provides evidence to reject the null hypothesis of no cointegration at 5% significance level meaning that a long-run cointegration relationship does exist. Since the bounds test shows that there is cointegration, the next step is to estimate the long-run levels model.

Long Run Result

Having ascertained the order of integration of the series using the stationarity test augmented by Dickey Fuller (ADF), we then test for the level of integration of the series. The result above revealed the presence of a long-run cointegrating relationship among the series since the f-statistics value 13.92348 is far more than the upper bounds critical value at 5% level 3.38. Then, we proceed to estimate the long-run coefficient of the long-run relationship.

Variable	Coefficient	Std. Error	t-Statistic	Prob.
DD	0.638952	0.127696	5.003681	0.0000
FD	-0.404022	0.105410	-3.832873	0.0007
DF	-14.25740	3.173389	-4.492799	0.0001
EXR	19.07514	5.277327	3.614546	0.0012
INF	-2.673422	5.529609	-0.483474	0.6325
C	302.0913	260.4231	1.160002	0.2558

Source: Eviews test results

In the long-run, the coefficient of Domestic Debt (DD) positively impacted per capita income (PCI) and statistically significant at 5% level of significant. A unit increase in Domestic Debts (DD) will, all things being equal, emit a 64 unit increase on per capita income (PCI). All things being equal. The coefficient of Domestic Debts (DD) having positive effect on per capita income is in line with the theoretical expectation. In theory, increase in Domestic Debts implies an injection into the economy and it is expected to increase output. The contracted loan will be a growth stimulator once it is optimally utilized for the purposes for which it was contracted in the first place. Debts contraction transfers income from the surplus unit to the deficit unit and increase productivity if invested following the proposition of loanable fund theory. This result is supported by the works of Mencingeri et al. (2015); Zhou et al. (2018); but contradicts the work of Adi (2017); Lotto and Mmari (2018); Rais and Anwer (2012).

In the long-run, the coefficient of foreign debts (FD) negatively impacted per capita income and statistically significant at 5% level of significance. A unit increase in foreign debt (FD) will, all things being equal, amount to a 40% decrease on per capita income (PCI) proxy for economic growth. The coefficient of foreign debts (FD) appeared with the wrong sign (negative) against the theoretical expectation of the researcher. In theory, increase in debt is an injection into the system which in the long-run is expected to generate profit to repay the debt and make profit. But, the posture of the series in question could be as a result of the diversion of the contracted money to activities that does not improve productivity or the diversion of the loan to personal account as the case have been in Nigeria. It could also mean that increase in foreign debt attracts the execution of projects and programmes that does not improve economic growth in Nigeria but on programmes that decrease productivity. The outcome of this study supports the views of scholars like Bashir and Reza (2016); Rais and Reza (2012); Adi (2017) but contradicts the postulations of Nawaz, Qureshi, and Awan (2012); Mencingeri et al. (2015); Zhou, Cai, Chen and Kun (2018).

In the long-run, the coefficient of Debt Financing (DF) negatively influenced per capita income and statistically significant at 5% level of significance. A unit increase in Debt Financing (DF) will, all things being equal, emit 14 unit decrease on per capita income in Nigeria. The coefficient of Debt Financing conforms to theoretical expectation. It is expected in theory that increase in Debt Financing is a leakage from the domestic economy and would lead to a decrease in economic growth. This implies that the income spent on the payment or servicing of debts will reduce the available income for other productive venture that would improve the nation's economy. This could be accounted to the cause of the present shortfall in productivity overtime (El-Mahdy & Torayaeh, 2009).

In the long-run, the coefficient of exchange rate (EXR) a control variable in the model positively impacted the per capita income and statistically significant at 5% level. A unit increase in exchange rate (EXR) would, all things being equal, emitted 19 unit increase in per capita income. The coefficient of exchange rate exhibited positive influence on per capita income and not in line with the theoretical a priori. An increase in exchange rate which means a decline in the value of the domestic currency when compared with the currency of other countries is expected to increase the cost of production, increase inflation, and decrease economic growth. Finally, the coefficient of inflating a control variable in the model negatively impacted per capita income but not statistically significant.

ECM And Short Run Representation

Given the fact that the short-run representation is built on the long-run relationship, the ARDL (1, 1, 0, 1, 1, 0) model short-run result is presented as thus

ECM Regression				
Case 2 Restricted Constant and No Trend				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
D(DD)	-0.048271	0.037418	-1.290061	0.2076
D(DF)	-2.055197	0.333235	-6.167402	0.0020
D(EXR)	1.701720	0.927085	1.835560	0.0771
CoIntEq(-1)*	-0.240513	0.022108	-10.87886	0.0000
R-squared	0.823494	Mean dependent var	-5.490477	

Adjusted R-squared	0.807920	S.D. dependent var	250.2378
S.E. of regression	109.6717	Akaike info criterion	12.33216
Sum squared residue	408947.8	Schwarz criterion	12.50454
Log likelihood	-230.3110	Hannan-Quinn criter.	12.39349
Durbin-Watson stat	2.769802		

Source: E-views test results

The error Correlation Term (ECM) appeared with the normal sign (-) and statistically significant at 1% level of significance. It could be inferred from the ECM term that the past disequilibrium in the public debts and economic growth relationship can be corrected at an adjustment speed of 24% annually. The speed of adjustment is though low but necessary in the empirical investigation of the effect of public debts on economic growth in Nigeria in the long run. Practically, it will take an average of four years and two months to return to long run equilibrium. The R-Square value 82% shows that the model has a good fit while the adjusted R-squares valued at 80% indicates that 80% of the changes in per capita income are caused by the variables in the model while the other 20% are exogenously determined by series other than the once in this model. The Durbin Watson statistic valued at 2.769802 indicates the absence of first other serial correlation.

Leaning on the long-run cointegrating relationship. The short-run parameter of the relationship is presented. In the short-run, the coefficient of domestic debt negatively impacted per-capita income but not statistically significant. Though the series is not statistically significant, but its negative value is important in policy making concerning public debt in Nigeria. Also, in the short-run, the coefficient of foreign debt (FD) negatively impacted per capita income and statistically significant at 5% level of significance. A unit increase in foreign debt will all things being equal, omit 2 unit in foreign debt in the short-run. This implies that foreign debt reduces economic growth by 2 unit temporarily.

Diagnostic Test Discussions

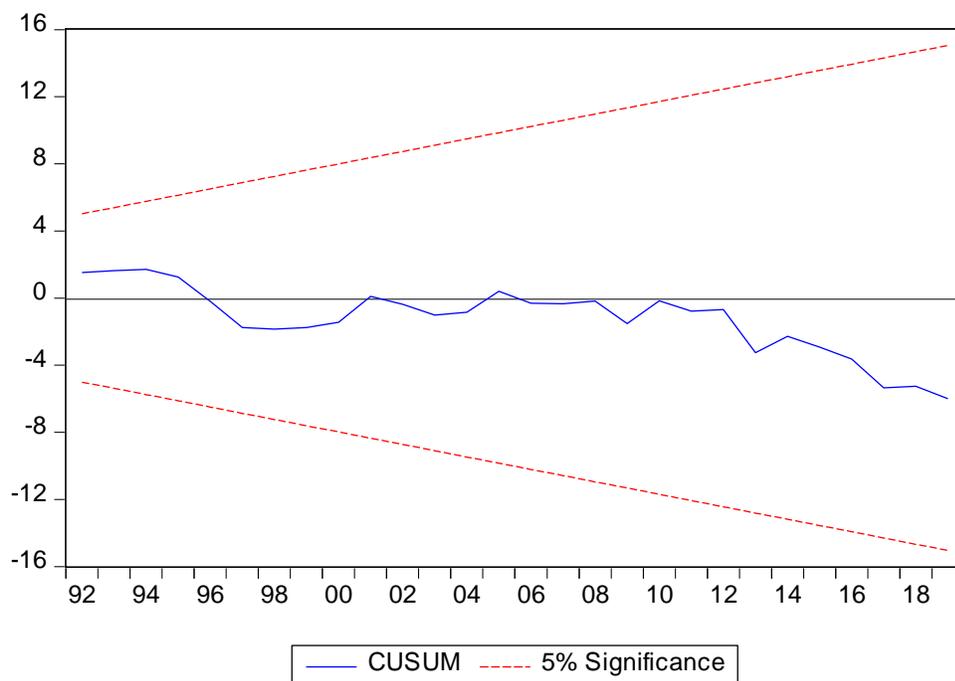
The Autoregressive Conditional Heteroskedasticity (ARCH) test for testing heteroskedasticity in the error process in the model has an F-statistic of 1.940197 ($\chi^2 = 0.0869$) which is not statistically significant. This indicates that the problem of heteroskedasticity is nonexistent in the model.

S/N		F-Stat.	Obs. R.
1	Normality test JB.	0.0982387 [0.611896]	
2	Serial correlation Lm test	2.896003 [0.0732]	6.923006 [0.0314]
3	Heteroskedasticity	1.940197 [0.0869]	14.59572 [0.1027]
4	Ramsey reset test	0.745027 [0.4627]	
5	Cusum	Stable	Stable

Source: Authors compilation from EViews 10.5

The Breush – Godfrey serial correlation Lagrangian multiplier (LM) test for higher order – serial correlation has an F-statistic of 2.896003 ($\chi^2 = 0.0732$) which is also not statistically significant meaning that the study cannot reject the null hypothesis of no serial correlation in the residuals. The heteroscedasticity test shows the presence of homoscedasticity. The Jacque – Bera χ^2 – Statistic of 0.0982387 indicates that the error process is normally distributed. The Cumulative

Sum of recursive residuals (CUSUM) confirmed that the model satisfied the stability test as shown in the plots of both CUSUM test statistics that fall inside the critical bounds of 5% significance. This implies that the estimated parameters are stable over the period 1981– 2019.



CONCLUSION AND RECOMMENDATION

Adjudged as the most populated country in Africa and the seventh oil producing country in the world, Nigeria is still ranked high in debts locally and internationally, thus the motivation to investigate the effect of public debts on economic growth in Nigeria within the period spanning from 1981 to 2019. To capture the main objective of this work, the researcher adopted both descriptive and empirical tools of analysis. Aside the descriptive statistic, Autoregressive distributed lag approach to econometric analysis was adopted after the stationarity test conducted with augmented dickey fuller (ADF) approach. The following was inferred from the long run and short run analysis:

- Domestic debts positively imparted per capita income and was statistically significant. Thus, the null hypothesis of no long run relation is rejected and the alternative hypothesis is accepted. There is a long run positive relationship between domestic debts and economic growth in Nigeria.
- Foreign debt negatively imparted per capita income and statistically significant in the long run and short run. Thus, the null hypothesis of no long run relationship is hereby rejected and the alternative hypothesis is accepted. Meaning that, foreign debt is the most important predictor of economic growth in Nigeria and the reason behind her present poverty and misery.
- Debt financing negatively influenced economic growth in line with debt over hang theory. Thus, the null hypothesis of no long run relation is rejected and the alternative hypothesis is

hereby accepted. Debt finance, a leakage in the system, negatively influences economic growth in Nigeria.

- Exchange rate positively imparted economic growth in Nigeria. Thus, exchange rate predicts economic growth in Nigeria.
- Inflation negatively imparted economic growth in Nigeria in line with theory or a priori expectation.

Conclusion, in view of the above estimation, the study conclude that public debts predicts economic growth in Nigeria with major causality from the negative impulse emitted by foreign debts before considering the permanent effect of domestic debts. This by implication means that foreign debts have both temporary and permanent effect on economic growth.

Recommendations

The study recommends a borrowing pattern and development of infant industries. Also, that borrowing should not be for political campaigns but for the establishment of lucrative industries such as agro-business and manufacturing industries and the revival of abandoned industries in the country.

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