International Journal of Development and Economic Sustainability
Vol.7, No.1, pp. 1-8, January 2019
Published by European Centre for Research Training and Development UK (www.eajournals.org)

DOMESTIC DEBT AND THE PERFORMANCE OF NIGERIAN ECONOMY (1990 - 2018): INVESTIGATING THE NEXUS

Andabai Priye Werigbelegha (Ph.D) and Eze Gbalam Peter (Ph.D)

Department of Banking and Finance, Niger Delta University, Bayelsa State, Nigeria.

ABSTRACT: *The study evaluated the relationship between domestic debt and the performance of Nigerian economy;for the period (1990-2018). Secondary data were used and collectedfrom Central Bank of Nigeria Statistical Bulletin. The study used Gross Domestic Product (GDP) and was employed as the dependent variable to measure the performance of the Nigerian economy; whereas, Development Stock, Treasury Bill and Interest rate were also employed as the independent variables.Hypotheses were formulated and tested using time series econometrics Models. The result revealed that the variables do not have unit roots. There is also a long-run equilibrium relationship between domestic debt and Gross Domestic Product. The result confirmed that about 72% short-run adjustment speed from long-run disequilibrium. Domestic debthad a causal relationship with Gross Domestic Product. The coefficient of determination indicated that about 64% of the variations of the performance of Nigerian economy can be explained by changes in domestic debt variables. The study concluded that domestic debt had a causal relationship with performance of the Nigerian economy.Thus, the study recommended that Government and policy makers should maintain a debt bank deposit ratio below 35 percent and resort to increase the tax revenue to finance its projects. Government should divest itself of all projects which the private sector can handle including refining crude oil (petroleum product) and transportation. Government should maintain a proper balance between short term and long term debt instruments in such a way that long term instruments dominate the debt market.*

KEYWORDS: Domestic Debt, Investigating the Nexus, Economics Performance, Nigeria

INTRODUCTION

Domestic debtin Nigeria seems to have taken a strategic position in growth and development of the economy;due to its rising profile (Agbeduta & Oluafemi, 2018).Because, study conducted by Agboje (2018)revealed that the demand for domestic debt is very high; if not adequately controlled could create some unfavorable consequencesin the economy.Thus, the study further stated thatgovernment is expected to finance viable projects from the proceeds of domestic debt. The work of Okogbe (2018) posited that domestic debts are debts issued by the federal government and denominated in local currency. Hence,in Nigeria, some of the debt instruments currently issued consist of Treasury Bills, Treasury Bonds, Treasury Certificate and Federal Government Development bonds etc. The study carried out by Chinmeleku (2018) revealed three principal reasons for government domestic debt. The first is for budget deficit financing, second is for implementing monetary policies and the third is to develop instrument so as to deepen the financial market.

However, several empirical studies such as: Tajudeen (2017); Alajide (2016) and Obinna (2018); have been conducted in Nigeria on domestic debt and economic growth nexus. These studies revealed a positive significant relationship between domestic debt and economic growth

Print ISSN: 2053-2199 (Print), Online ISSN: 2053-2202(Online)

in Nigeria. Whereas, some other studies which were carried out by Makau (2014); Kibui (2017) and Rabia and Kamran (2018) in Pakistan, Kenya and Iran respectively indicate a negative significant relationship between domestic debt and economic growth in their respective countries with similar time series characteristics of data. Hence, the works of Adulobi (2018) and Okoronkwo (2018) show inconsistent relationship between domestic debt and economic growth in Nigeria. But, the study carried out by Okpara (2018) also established that domestic debt seems to have failed to meet the expectations of the Nigerians in terms of its contributions to the Gross Domestic Product of the economy; as a result of corruption, inability to implement the formulated policies, inconsistent government policies; political and economic instability etc. Thus, these conflicting results and problems created a knowledge gap in this study; and, it is against this background that the study attempts to investigate empirically the relationship between domestic debt and performance of the Nigerian economy.

Theoretical Framework

The theoretical framework of this study is anchored on endogenous growth model by Romer (1986). The theory explains the situation that prevails in most developing economies such as Nigeria. Endogenous growth theory was developed as a response to criticism of the neo-classical growth model. The endogenous growth theory holds that policy measures can have an impact on the long-run growth rate of an economy (Wikipedia, 2018). The growth model is one in which the long-run growth rate is determined by variables within the model, not an exogenous rate of technological progress as in a neo-classical growth model. The model emphasized where capital accumulation has been used as the driving force for growth. This links debt and growth to the problem of capital flight where at high debt level growth falls.Hence, the threshold model stated that the fall of growth is due to the higher distortionary tax burden on capital required to service the debt.

Hence, the study carried out by Adulobi (2017) traces the origin of Nigeria's debt problems to the collapse of the international oil price in 1981.The needed growth, however, is disturbed by two factors, which include, limitation imposed by inappropriate domestic policies and the external factors, which are beyond the control of the economy. The work of Okpara (2018)was of the view that faulty domestic policies will negatively affect project financing.The study believes that some of the policies were of little significance; because, of the perceived temporary effect of the external shocks. However, the expansionary policies, will led to stupendous macroeconomic fallout, which encourage import and discourage export production(Agbeduta & Oluafemi, 2018).

Empirical Review

Chinmeleku (2018) used a cross country survey of the role of domestic debt markets in sub-Saharan Africa based on a new data set of 27 sub-Saharan African countries during the 22-years period (1995-2016) and found out that domestic debt markets in these countries are generally small, highly short term and often have a narrower investor base. The study also found out that interest rate payments present a significant effect on the budget.

Okpara (2018)evaluated the non-linear impact of external debt on growth using a panel data of 27 countries over 1990-2016 employing econometric methodologies. Their findings suggested the average impact of debt becomes negative at about 160-170 %of exports or 35-40% of GDP. The findings also show that the marginal impact of debt show negative on the economy.

Print ISSN: 2053-2199 (Print), Online ISSN: 2053-2202(Online)

Sobolo (2018)examined the impact of domestic debt in the Nigerian economy using the Barro Growth Regression Model (BGRM). The results indicate that the composition of Kenya's public debt has shifted in favor of domestic debt.Domestic debt expansion had a positive but not significant effect on economic growth during the period. The study further stated that the Barro Model needs a sophisticated data set which may not be available for a developing country like Nigeria.

Adofu and Abula (2010) investigated the relationship between domestic and economic growth in Nigeria for the period 1986-2005. This study used advanced econometric techniques.The findings showed that domestic debt has affected the growth of the Nigerian economy negatively and recommended that it should be discouraged. The study suggested that the Nigerian economy should concentrate on widening the tax revenue base.

METHODOLOGY

The study adopted *ex-post-facto* research design. Data for this study consist of 28-years annual observation period (1990-2018).Secondary data were usedand collected from the Central Bank of Nigeria Statistical Bulletin. The study used Gross Domestic Product (GDP) and was employed as the dependent variable to measure economic performance in Nigeria; whereas, Development Stock (DS) Treasury Bill (TB) and Interest Rate (INT) were also employed as the independent variables as indicated in **appendix 1**

Model Specification

Multivariate linear regression model is used to test each of the null hypothesis proposed for the study:There is no causality between domestic debt and Gross Domestic Product in Nigeria.Based on the formulated hypothesis, a model is adapted from the work of Agbozu & Aliyu (2018). The model is stated as:

GDP =*f*(TB, INT)

Where:GDP = Gross Domestic Product as proxy for performance of the economy

TB = Treasury Bill

INT= Interest Rate

The above model is modified in this study by introducing development stock and was employed as explanatory variable. Thus, the modified model is written as:

GDP = *f*(TB, INT, DS)…….(i).

Where:GDP = Gross Domestic Productas proxy for Economic Growth

TB = Treasury Bill

DS = Development Stock

The econometric model is stated as:

$LnGDP = \delta_o + Ln\delta_1 TB + Ln\delta_2 INT + Ln\delta_3 DS + \mu$…….(ii)

Print ISSN: 2053-2199 (Print), Online ISSN: 2053-2202(Online)

INT= Interest Rate, μ = the stochastic variable, δ_0 = intercept and δ_1, δ_2 and δ_3 are the coefficients of the regression equation. μ is the stochastic or error term; while, Ln is the natural log of the variables. Log transformation is necessary to reduce the problem of heteroskedasticity; because, it compresses the scale in which the variables are measured, thereby reducing a tenfold difference between two values to a twofold difference (Gujarati, 2004)

DATA PRESENTATION AND DISCUSSION

Unit Root Test

The test for stationary of the variables was done using the Augmented Dicker Fuller (ADF) Unit Root Test. The result in **table 1** shows that all the variables are integrated at levels i.e. 1(1) at the 5% or 1% level of significance.

Table 1: Unit Root Test Analysis

Variables	ADF test Statistics	Mackinnon critical vale @ 5%	No of the time difference	Remark
GDP	4.9384745	-3.645375	1(1)	Stationary
TB	-4.6735464	-1.353673	1(1)	Stationary
INT	-5.8657454	-2.735498	1(1)	Stationary
DS	3.9530292	-2.678584	1(1)	Stationary

Notes: (1)1% level of significance, 5% level of significance, 10% level of significance.The tests accepted at 5% level of significance. Decision rule -The critical value should be larger than the test statistical value for unit root to exist. **Source:** Researcher's Estimation using- E-views 9.0

Test for Co-Integration

Hence, having found that all the variables are stationary at first difference, the next step is to perform Johansen co-integration procedure to ascertain whether Gross Domestic Product (GDP), Development Stock (DS), Treasury Bill (TB) and Interest Rate (INT) are co-integrated in the same order. The results of the test are presented in table **2.**

Table 2: Multivariate Johansen's Co-Integration Test Result.

Null hypothesis	Alternative hypothesis	Eigen value	Likelihood ratio	Critical vales 5%	Critical value 1%	Hypothesized No. of CE(s)
r=0	r=1	0.67839	67.84657	53.84	43.43	None **
rd≤1	r=2	0.64036	56.93569	48.94	38.62	At most 1
rd≤2	r=3	0.58826	46.68579	37.36	26.45	At most 2
rd≤3	r=4	0.49738	23.35638	25.32	24.23	At most 3

Source: E-views Econometrics 9.0.Note* (**) denotes rejection of hypothesis at 5% (1%) significance level.

Print ISSN: 2053-2199 (Print), Online ISSN: 2053-2202(Online)

Vector Error Correction Model

The Error Correction coefficient contains information about whether the past values affect the current values of the variable under study and the significant coefficient implies that past equilibrium errors play a role in determining the current outcomes

TABLE 3: Vector Error Correction Estimates

Variables	Coefficient	Std. Error	t-Statistic	Prob.
(ECM(-1)	-0.771908	-0.423205	3.576453	0.000008
$D(GDP_{-1})$	2.3658701	6.960191	6.657836	0.000123
$D(GDP_{-2})$	4.0265899	-0.641147	5.243567	0.000245
Ln(TB)	8.2763984	0.986368	1.436276	0.000011
Ln(INT)	3.7539839	0.243352	2.735658	0.000009
Ln(DS)	3.6487995	0.468375	3.267389	0.000086
C	6.9676458	-2.201398	4.170096	0.000780
R-squared	0.657835	Mean dependent var		6.867564
Adjusted R-squared	0.626645	S.D. dependent var		34.24366
S.E. of regression	3.132576	Akaike info criterion		5.946243
R-correlation	2.786958	Schwarz criterion		5.758456
Log likelihood	-16.1856	F – statistic		7.876387
Durbin-Watson stat	1.758799	Prob (F-statistic)		0.000000

Source: Econometrics-View-9.0

The results on table 3 show that error-correction coefficient is statistically significant and has a negative sign, which confirms a necessary condition for the variables to be co-integrated. There is also a long-run equilibrium relationship between domestic debt and performance of the Nigerian economy; and, the result confirms that about 77% short-run adjustment speed from long-run disequilibrium. The coefficient of determination indicates that about 65% of the variations in performance of the in Nigeria can be explained by changes in the domestic debt variables (TB,INT and DS) in the economy. This implies that a good portion of economic performance trends in the Nigerian economy is explained by the domestic debt variables. The F-statistics of 7.876387 which is statistically significant (F-probability = 0.000000) at 5% accept the relationship between domestic debt and the performance of Nigerian economy. The influence of the explanatory variables on the dependent variable is statistically significant and this is also confirmed by the F-probability.

Granger Causality Analysis

Granger causality test is used to examine the causal direction; that is, which of the variables (dependent and independent variable) influences the relationship between them.

Print ISSN: 2053-2199 (Print), Online ISSN: 2053-2202(Online)

Table 4: Result of Pairwise Granger-Causality Test (1990-2018) with 2-period Lag length

Null Hypothesis:	Obs	F-Statistic	Probability	Decision
TB does not Granger Cause GDP	27	3.84631	0.00009	Causality
GDP does not Granger Cause TB		6.64835	0.00100	Causality
INT does not Granger Cause GDP	27	2.40936	0.00001	Causality
GDP does not Granger Cause INT		2.86931	0.00324	Causality
DS does not Granger Cause GDP	27	5.11946	0.00112	Causality
GDP does not Granger Cause DS		2.84634	0.00300	Causality
INT does not Granger Cause TB	27	6.54037	0.00076	Causality
TB does not Granger Cause INT		4.25610	0.00036	Causality
DS does not Granger Cause INT	27	8.47382	0.00012	Causality
INT does not Granger Cause DS		7.76385	0.00223	Causality
DS does not Granger Cause TB	27	5.27649	0.00063	Causality
TB does not Granger Cause DS		4.86348	0.00112	Causality

Source: Econometrics-View-9.0, **Note**:The decision rule of a causality test states that if the probability value of the estimate is higher than the 5% (0.05) level of significance, we accept the null hypothesis, and vice versa.

The Engle and Granger (1987) causality test was performed on the variables as indicated in **table 4.** The results of the Granger causality test indicate that Gross Domestic Product (GDP) has causality with TB (treasury bill), INT (interest rate) and DS (development stock). This implies that there is causal relationship between domestic debt variables and performance of the Nigerian economy.

CONCLUSION AND RECOMMENDATIONS

The study concluded that domestic debt has a causal relationship with the performance of the Nigerian economy.This corroborates the work of Sobolo (2017) which revealed a significant relationship between domestic debt and economic growth in Nigeria.The study recommends that policy makers should maintain a debt bank deposit ratio below 35 percent and resort to increase the tax revenue to finance its projects. Government should divest itself of all projects which the private sector can handle including refining crude oil (petroleum product) and transportation. Government and policy makers should maintain a proper balance between short term and long term debt instruments in such a way that long term instruments dominate the debt market.Policy makers should provide enabling environment for private sector investors such as tax holidays, subsidies, guarantees and most importantly improved infrastructure. Policy makers should work together to achieve stability of the economy.The investors are expected to reciprocate to the gesture through commitment of funds and promptly honoring loan obligations.

Contribution to Knowledge

The study was able to modified the model and expanded the existing contemporary literature, empirical review, geographical spreads and updated the data of the study that will enable researchers and scholars to use it for further studies. Thus, from the results this study has also

Print ISSN: 2053-2199 (Print), Online ISSN: 2053-2202(Online)

contributed to knowledge by discovering that domestic debt has a direct causality with the performance Nigerian economy.

REFERENCES

Adulobi, F. (2018). Key issues for analyzing domestic debt Sustainability. *International Journalof Social Sciences and Research*,6(12), 434-443.

Agbeduta, G. R. & Oluafemi, WJ. (2018).Impact of domestic debt on the growth of Nigerian economy.*EuropeanJournal of Finance and Management Research*, 10(7), 288-292.

Agboje, J. (2018).The role of domestic market in economic growth: Empirical investigation for low income countries and emerging markets. *IMF Working Paper*, 2416.

Agbolu, D. (2018). Effect of Domestic debt on the Nigerian economy.*InternationalJournal of finance and Business Research*,8(6),222-232.

Aliyu, D. F. (2018). Domestic debt structure,risk characteristic and economic growth: Evidence from Nigeria. *International Journal of finance and ManagementReview*, 13(6),422-456.

Christensen, J (2017). Domestic debt markets in Sub-Saharan Africa. *IMF Staff Papers*, 52(3), 518-538.

Gujarati, D. (2007). *Basic Econometrics*. 4th Edn., McGraw-Hill Publishing Co., Ltd., New York.

Ibenta, Steve, N. O. (2012). *Research Monograph: Guidelines for Seminar Papers, Theses & Project Reports*. 22-28 Regina Caeli Rd, Awka, Anambra State.

Ikeora, E. J. (2017). *Monetary Theory and Policy in a Developing Economy.* Cape Publishers International Limited. Wuse Phase 2, Abuja, Nigeria.

Ikeora, E. J. (2018). *Bank Lending, Principles and Practice.* Book Point Ltd, Abbot Communications, 71 Old Market Road, Onitsha, Anambra State.

Okogbe, W. F (2018).Domestic debt and economic growth in Nigeria: Investigating the Nexus. *EuropeanJournal of Business and Management Studies*, 12(9), 133-147.

Okonjo-iweala N. (2012). Nigeria External and Domestic Debt Now is $44B". Retrieved from http://www.thisdaylive.com on 17/4/2014.

Okpara, R (2018).Rising Domestic Debt Profile in Nigeria. *GlobalJournal of Accounting and Financial Research*, 14(4), 134-146.

Sanusi, O. J(2003). Management of Nigeria's domestic debt:A keynote address delivered at the 7th monetary policy forum organized by the Central Bank of Nigeria at the CBN Conference Hall, Abuja, 22 May.

Sobolo D. (2018). Issues on the level of interest rates in Nigeria. *Journal of Accounting, Economics and Financial Research*, 9(4),243-254.

Sumonu, L. S.(2018). Growth Prospects for the Nigerian economy.*European Journal of Accounting, Auditing and Financial Research*, 11(9),23-37.

Print ISSN: 2053-2199 (Print), Online ISSN: 2053-2202(Online)

APPENDIX 1:

Domestic Debt and Performance of the Nigerian Economy (1990-2018)

Years	Gross Domestic Product(NBillion)	Development Stock (N' Billion)	Interest Rate (%)	Treasury Bill (N' Billion)
1990	349,76	4.40	25.50	25.48
1991	545.67	4.22	20.01	57.76
1992	875.34	3.96	29.80	119.75
1993	1,089.68	3.73	18.32	116.38
1994	1,399.70	3.35	21.00	170.93
1995	2,907.36	3.17	20.18	276.91
1996	4,032.30	2.96	19.74	179.63
1997	4,189.25	2.84	13.54	364.52
1998	3,989.45	2.68	18.29	378.53
1999	4,679.21	2.44	21.32	361.76
2000	6,713.57	2.11	17.98	465.54
2001	6,895.20	1.83	18.29	584.54
2002	7,795.76	1.63	24.85	733.76
2003	9,913.52	1.47	20.71	825.05
2004	11,411.07	1.25	19.18	871.58
2005	14,610.88	0.98	17.95	854.83
2006	18,564.59	0.72	17.26	695.00
2007	20,657.32	0.62	16.94	574.93
2008	24,296.33	0.52	15.14	471.93
2009	24,794.24	0.52	18.99	797.48
2010	54,204.80	0.22	17.59	1,277.10
2011	63,258.58	0.00	16.02	1,727.91
2012	71,186.53	0.00	16.79	2,122.93
2013	80,222.13	0.00	16.72	2,581.55
2014	83,193.463	0.00	16.55	2,815.52
2015	97,576.474	0.00	18.2	2,772.87
2016	96,761.223	0.00	18.9	2,679,23
2017	93,846.363	0.00	18.3	2,236.35
2018	102,756,74	0.00	16.3	2,435.73

Source: Central Bank Nigeria Statistical Bulletin, 2018.

Print ISSN: 2053-2199 (Print), Online ISSN: 2053-2202(Online)