

# Public Debts And Stock Market Performance In Nigeria

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## **Abstract**

*This study aimed to determine if public debt influences stock market performance in Nigeria. An annual secondary data time series was employed for the period between 1985 and 2021. To assess the relationship between the regressors (stock market performance variables) and the dependent variable (public debt), the Bounds testing approach was used. Data analysis revealed that the independent variables have varying degrees of relationships with stock market performance in both the short run and long run across the two models. The study concluded that public debt variables (domestic debt, external debt, and debt servicing) significantly affect stock market variables. Based on these findings, the policy direction suggests that instruments of external and domestic debt should be utilized within approved limits, and loan proceeds should be used for sustainably efficient economic activities capable of positively influencing the stock market.*

**Keywords:** *Public Debt, All Share Index, Total Volume of Trading and Total Market Capitalization, Domestic Debt*

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Date of Submission: 08-01-2025

Date of Acceptance: 18-01-2025

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## **I. Introduction**

Stock market performance is a leading indicator used to ascertain the efficiency of the financial sector and the economy in general. In a frontier market such as Nigeria, key indicators of the stock market have performed poorly (Omodero & Dandago, 2018). Osaze (2020), categorically labeled the condition of the capital market in Nigeria as frontier, based on its low transaction, liquidity, depth, breath and introduction of new issues compared to the capital market of other Africa nations (South Africa and Egypt). The total market capitalization and value of traded stock of the Nigerian Exchange Group (NGX) in December 2021 was N42.1trillion and N0.9 trillion respectively, which has portrayed a bearish trend over the past few decades (Central Bank of Nigeria, 2020). The stock market must be bullish, and in order for it to be vibrant, key market performance indicators must improve by creating a viable environment in which public and private sector investors are encouraged to seek and source funds on the stock exchange. However, to keep the stock market vibrant and resilient both underdeveloped and developing economies frequently look for debt to meet their financial needs.

Public debt is an important macroeconomic tool utilized by government to support the growth of an economy. Nigeria's total public debt surged from N22.7 trillion in March 2017 to N38.0 trillion in September 2021 (Debt Management Office, 2021). The country's high debt surge made the International Monetary Fund (IMF) executive board to issue warnings about the economic implications of such a large debt profile (International Monetary Fund, 2021). Total public debt is a summation of the incurred external and domestic debt of the Federal Government of Nigeria (FGN), Local Government, State Government and Federal Capital Territory (FCT). Ideally when debt is sourced, it is employed to settle expenditures of the government, geared towards increasing economic growth, affecting key macroeconomic indicators and the stock market performance indicators inclusive. The cost of procuring funds through debt is influenced when interest rate reaches an outrageous height and exchange rate hit an exorbitant height against the currency of lending countries or through high debt servicing (Adekunle, Alalade & Okulenu, 2016). Considering government debts are usually long term in nature, one avenue through which public debt are sourced is the stock exchange.

The phenomenon of incurring public debt is not just peculiar to Nigeria, rather it is a global practice by most nations of the world, whether developed or underdeveloped. Hence, most countries, including Nigeria, borrow to cover budget deficits, particularly during financial crises. When financial upheavals and recession

occurs the stock, market tends to follow a bearish trend and debt level usually rise (Gerleman, 2012). Nigeria has entered recession on two occasions between 2016 to 2020, and the countries debt profile has been on a geometric increase since 2009 just after the global financial meltdown. Nigeria debt profile has become a serious existential issue because the country currently spends about 89 percent of its revenue on debt servicing (IMF, 2021).

The interaction between government indebtedness and stock market performance is an element of economics about which relatively little is understood (Wisniewski & Jackson, 2020). Alesina (2012) pointed out that economists face significant knowledge gaps, acknowledging that they do not understand as much as they would like or perhaps should (Wisniewski & Jackson, 2020).

The primary goal of this study is to investigate public debt connection with the performance of stock market in Nigeria by introducing a disaggregated public debt variable into external and domestic debt in order to obtain a robust result of each component's impact on Nigerian stock market performance. Furthermore, debt servicing variable would be introduced because it impacts the economy at very high level of debt, which eventually have an effect on stock market performance. This would be examined because the continuous increase of public debt has resulted in colossal debt servicing payment.

## **II. Literature Review**

### **Public Debt**

Employment, economic growth, and inflation are influenced by Public debt, which has a multiplier effect on countries' investment activities (Pham, Mai & Nguyen, 2020). Public debts are broadly classified into internal debts and external debts, otherwise known as domestic and foreign debts. Hence, Okogbe (2018) posit that domestic debt are debts denominated in local legal tender and issued by the sovereign government, external debt is raised with foreign denominated currency, is obtained from multilaterals, bilateral and the International Capital Market (ICM).

### **Stock Market Performance**

Osaze (2007), described the financial markets as the financial system, long term arm which supply the requisite lubricant that continuously make the economy's wheel to turn. Hence, the stock market contributes immensely in the development process of any nation that why its performance is of great importance to every economic unit. Friedman (2019), stated that the stock market performance depends on the sum total of actions taken by market participants. Amongst the paramount drivers of the stock market performance are the events in macroeconomic environment in which it is domiciled (Uzum, Ikpefan, Omankhanlen, Ejemeyovwi & Ehikioya, 2021).

### **Stock Market Indexes (SMI)**

SMI is a comprehensive general index, showing an aggregate representation of the behaviors of listed equities on a Stock Exchange. It is a good way to keep track of the market's overall position and the range of its movements. It is a numerical parameter that shows the sum value of market characteristics, and it is calculated daily to show how prices have changed, (Krokeme & Eze, 2021). There are different types of Indexes. In Nigeria the most popular index is referred to as the NGX All Share Index, it follows the broad market movement of every quoted equities in the Nigerian Exchange Limited. Others are NGX; Pension, Premium, 30, Insurance, ASEM, Consumer Goods, Oil and Gas, Lotus Islamic, CG, Industrial, Banking, Afrinvest Bank Value Index, Meristem Growth Index, Meristem Value Index, Afrinvest Div Yield Index, and Growth Board Index. These indices are industry based indices of listed firms in the Nigerian Exchange Limited.

### **Volume of Traded Stock**

Volume of trade refers to the total number of shares or contracts traded at a specific exchange. This can include stocks, options contracts, bonds, futures contracts, and various commodities traded within a trading day.

Measuring trade volume provides insights into market activity and liquidity (International Organization of Securities Commissions, 2007). In Nigerian Exchange Group (NGX), there is an aggregate transaction for all securities traded on the exchange (CBN, 2020). International Organization of Securities Commissions (2007) described trade volume as a traditional measure of market liquidity. As far as business transaction of the market is concerned, the volume of traded stock is one of the indicators that determine the level of performance of the stock exchange and this can in turn have an effect of the economy.

### **Domestic Debt and Stock Market Performance**

Domestic debt is raised usually through bond (on the capital market) and treasury bills (on the money market), of which local pension funds, banks in Nigeria, other domestic and international investors are the most common buyers (Essien, Agboegbulem, Mba & Onumonu, 2016). The avenue in which government create its

domestic debt is by issuing government bonds through the capital market in its country, in Nigeria on the Nigerian Exchange Group (NGX). This is a legal contract between the government and the bondholder, in this contract the government receive funding and at this point it becomes bounded by law to make fixed interest payments in each period and a principal payment on the date of maturity as stated in the contract (Gerleman, 2012). Government bonds are differentiated based on maturity, liquidity, risk and sales in the secondary market. Government bond holder could be individual, corporations, institutions and other foreign governments (Gerleman, 2012).

### **Foreign Debt and Stock Market Performance**

Foreign debt, also known as external debt, refers to the borrowing a country undertakes from other nations, international financial institutions, or the International Monetary Fund (IMF). These credits are usually granted with interest included, which should be repaid on a later date denominated in the borrowing country currency (Irfan, Rao, Akbar & Younis, 2020). This type of debt is obtained in order to make a genuine contribution to the economy, but the debt servicing installment is a risk to financial development. The longer the payment structure of the debt is, the most likely it will have an adverse financial effect on the economy in general and financial system specifically. It is greatly affected by exchange rate, because this type of debt must be repaid in the currency in which it was obtained. Foreign debt is broadly categories into Multilateral, Bilateral, Commercial loans and other external debts.

### **Debt Servicing and Stock Market Performance**

The payment of installments on loans obtained from domestic and international sources is referred to as debt servicing. According to the terms of the loan, an installment includes interest on the debt as well as a portion of the principal. In other to service debt in time, borrowing nations or corporate organization should have timely cash flows. Timely cash flows is a necessity for a nation or corporate organization to service its debt on time. If a country is unable to honor its debt service terms due to a lack of required funds, it is said to be unable to service its debt. (Khatundi, 2020). Debt management decisions contribute a significant role in the strategies of fiscal policies. Debt management decisions are becoming increasingly crucial as part of a financial plan as debt grows its position as the principal way of supporting government demands increases. Given that debt management has such a significant impact on public finance, any attempt to determine the country's financing decision should include appropriate public debt management.

### **Empirical Review**

The contribution of foreign debt on the economy's performance and stock exchange of South Asia Association for Regional Cooperation was investigated by Irfan, Rao, Akbar, and Younis (2020). On a data set spanning the years 1992 to 2017, panel least square regression techniques were used. It revealed a negative non-significant connection between the external debt and stock market performance proxy my stock market index, however this work doesn't corroborate with Darrat (1988). The stock market's performance is unaffected by the country's external borrowings, according to this relationship. It demonstrates that external debt does not have a strong influence on stock market performance.

Also, Ozigbu and Ezekwe (2020), investigated the inter temporal policy mix and stock market development making use of ECM techniques for a data set between 1986-2018. The outcome reveals a non-significant inverse effect of public debt on traded stock value. This suggests that public spending, a channel of fiscal policy promotes the development of Nigeria's stock market.

Wisniewski and Jackson (2020) inquire into the impact of increasing government debts on stock market returns, utilizing a panel regression technique for a data set between 1990 to 2014. One of the findings was, an increase in government debt to GDP ratio has an inverse relationship with stock index returns.

Agwu and Godfrey (2020), analyzed the influence stock exchange has on fiscal policy shocks in Nigeria using ECM techniques for a data set between 1989 to 2018. Domestic debt and stock market performance have a favorable and significant association, according to the study, proving the Keynesian hypothesis. In another study Al-Dhaimesh (2020), examined the response of Jordanian commercial banks share prices to monetary and financial variables between a period 2001 to 2018 using multiple linear regression. The findings revealed that locally sourced debt has statistically significant and direct response on the prices of Jordanian commercial bank securities. One of the findings was, an increase in government debt to GDP ratio has an inverse relationship with stock index returns. The contribution of foreign debt on the economy's performance and stock exchange of the South Asia Association for Regional Cooperation was investigated by Irfan, Rao, Akbar, and Younis (2020). On a data set spanning the years 1992 to 2017, panel least square regression techniques were used. It revealed a negative non-significant connection between the external debt and stock market performance proxy my stock market index, however this work doesn't corroborate with Darrat (1988).



the long run equilibrium impact of public debt on capital market growth was re-casted as follows to capture the adjustment mechanism (ECM) that correct the economy back to equilibrium in the event of shock. Thus, re-specifying equation 3.6 to incorporate the effect of shock which is inform of ECM and it is specified:

$$\Delta ASI_t = \beta_0 + \sum_{i=1}^p \beta_1 \Delta ASI_{t-1} + \sum_{i=1}^q \beta_2 \Delta EXD_{t-1} + \sum_{i=1}^q \beta_3 \Delta DMD_{t-1} + \sum_{i=1}^q \beta_4 \Delta DS_{t-1} + \sum_{i=1}^q \beta_5 \Delta INT_{t-1} + \phi ECM_{t-1} + \varepsilon_t \dots \dots \dots (3.4)$$

Where: ASI = All Share Index; EXD = External Debts; DMD = Domestic Debts; DS = Debts Services; INT= Interest Rate; ECM = (ASI<sub>t-1</sub> -θ<sub>π</sub>) , the adjustment term is the extracted residuals from the regression of the long-run equation;

ϕ = represents the speed of adjustment parameter with negative sign.

β<sub>0</sub> presents constant/slope

β<sub>1</sub>β<sub>2</sub>β<sub>3</sub>β<sub>4</sub>β<sub>5</sub> are the parameters to be estimated

**Model 2**

To examine the impact public debts, have on volume of traded stock; this study adapted the model of Aigheyisi and Edore (2014).

$$VT/GDP = f(DBT/GDP, EXP/GDP) \dots \dots \dots (3.5)$$

Where, VT/GDP= Volume of trade as percentage of GDP; DBT/GDP= Government debt percentage of GDP; EXP/GDP= Government expenditure percentage of GDP

To investigate the objectives of this study, appropriate variables were introduced. Thus, the model in econometric form is specified as:

$$TVT_t = \beta_0 + \beta_1 EXD_t + \beta_2 DMD_t + \beta_3 DS_t + \beta_4 INT_t + \varepsilon_t \dots \dots \dots (3.6)$$

The equation is specified in implicit form using Autoregressive Distributed Lad (ARDL) Model as follows: The equation can be specified explicitly in the short-run as follows:

$$TVT_t = \beta_0 + \sum_{i=1}^p \beta_1 \Delta TVT_{t-1} + \sum_{i=1}^q \beta_2 \Delta EXD_{t-1} + \sum_{i=1}^q \beta_3 \Delta DMD_{t-1} + \sum_{i=1}^q \beta_4 \Delta DS_{t-1} + \sum_{i=1}^q \beta_5 \Delta INT_{t-1} + \varepsilon_t \dots \dots \dots (3.7)$$

the long run equilibrium impact of public debt on capital market growth was re-casted as follows to capture the adjustment mechanism (ECM) that correct the economy back to equilibrium in the event of shock. Thus, re-specifying equation 3.6 to incorporate the effect of shock which is in form of ECM and it is specified as:

$$\Delta TVT_t = \beta_0 + \sum_{i=1}^p \beta_1 \Delta TVT_{t-1} + \sum_{i=1}^q \beta_2 \Delta EXD_{t-1} + \sum_{i=1}^q \beta_3 \Delta DMD_{t-1} + \sum_{i=1}^q \beta_4 \Delta DS_{t-1} + \sum_{i=1}^q \beta_5 \Delta INT_{t-1} + \phi ECM_{t-1} + \varepsilon_t \dots \dots \dots (3.8)$$

Where: TVT = Total Volume of Trade; EXD = External Debts; DMD = Domestic Debts; DS = Debts Services; INT= Interest Rate; ECM =  $(TVT_{t-1} - \theta_{it})$  , the error correlation term is the extracted residuals from the regression of the long-run equation

$\phi$  = represents the speed of adjustment parameter with negative sign.

$\beta_0$  presents constant/slope

$\beta_1, \beta_2, \beta_3, \beta_4, \beta_5$  are the parameters to be estimated

#### IV. Data Presentation And Empirical Analysis

The objective is to estimate and analyse the models using suitable techniques to derive valuable insights for testing the study’s hypotheses and to draw valid conclusions. For the empirical analysis, a combination of econometric and statistical methods is utilised.

**Table 1: Summary Statistics**

	$\bar{x}$	Max(x)	Min(x)	s	$\gamma_1$	$\gamma_2$	JB	P
LASI	8.876761	10.96803	4.846547	1.868833	-0.92	2.49	5.71	0.05
LTVT	3.783795	4.760820	-1.469676	3.276011	-0.39	1.53	4.28	0.11
LEXD	6.934062	9.671255	2.850707	1.529018	-0.43	3.16	1.19	0.55
LDMD	7.000535	9.86880	3.330417	1.974772	-0.36	2.07	2.13	0.34
LDS	5.021990	8.347981	0.476234	2.056273	-0.45	2.56	1.58	0.45
LINT	2.349913	3.269189	0.875469	0.488040	-1.18	5.39	17.45	0.00

**Source:** Author’s computations, (2023) using Eviews 9.0

The annualized descriptive summary statistics for the variables is presented in Table 1, Average annual changes in All Share Index (LASI) and Total Volume of Trade (LTVT) in the Nigerian Exchange Limited are 8.87 percent and 3.78 percent, which is a fairly high rate of performance in terms of all share index and trading activities in the stock market. The standard deviation values for the performance indicators is much lower than the mean values, suggesting that there were low swings or movements (variability) in the performance indicators in the stock market over the period. This is also confirmed by the low kurtosis value of 2.49 and 1.53 which is lower than the 3.0 margin.

For the independent variables, the average value of external debt (LEXD), domestic debt (LDMD) and debt servicing (LDS) was 6.93 billion and 7.00 billion and 5.02 billion respectively over the period while the average change in interest rate was 2.34 percent; thus maximum values was higher than the mean values in all variables. This signify that the explanatory variables utilized in this study have moved above average for the period under study, which was linked to low variability of these variables, as seen in the value of the respective standard deviations. The summary statistics reveal that the skewness values of -0.43, -1.36, -0.45, and -1.18 are negatively skewed, whereas all but one (interest rate) Jarque-Bera (J-B) statistic values were not significant. This suggests that the data sets for external debt (LEXD), domestic debt (LDMD), and debt servicing (LDS) are normally distributed, while the interest rate (LINT) is not.

**Table 2: Correlation Result**

Correlation	LASI	LTVT	LEXD	LDMD	LDS	LINT
Probability	LASI	LTVT	LEXD	LDMD	LDS	LINT
LASI	1.000000					
LTVT	0.839499 (0.0000)	1.000000				
LEXD	0.770912 (0.0000)	0.667830 (0.0000)	1.000000			
LDMD	0.840857 (0.0000)	0.834055 (0.0000)	0.808159 (0.0000)	1.000000		
LDS	0.823159 (0.0000)	0.897557 (0.0000)	0.857239 (0.0000)	0.872944 (0.0000)	1.000000	
LINT	-0.498124 (0.0017)	-0.616082 (0.0000)	-0.176834 (0.2951)	-0.559295 (0.0003)	-0.464349 (0.0038)	1.000000

**Source:** Author’s computation, (2023) using Eviews 9.0. Probabilities in parentheses () below each coefficient

The outcome of the pairwise correlation matrix is presented in Table 2. It indicates that all share index

(LASI) has a significant and positive correlation values of 0.770912, 0.840857 and 0.823159 with external debt (LEXD), domestic debt (LDMD) and debt servicing (LDS) and negative correlation values of -0.498124 with interest rate (LINT). Also, total volume of trade (LTVT) also has a significant positive correlation values of 0.667830, 0.834055 and 0.897557 with external debt (LEXD), domestic debt (LDMD) and debt servicing (LDS) and negative correlation values of -0.616082 with interest rate (LINT).

**Table 3: Result of the Unit Root Test**

Variables	Augmented Unit Root Test			Phillip–Perron (PP) Test		
	Level Form	1 <sup>st</sup> Difference Form	Order of Integration	Level Form	1 <sup>st</sup> Difference Form	Order of Integration
LASI	-2.7216	-4.1993**	I[0]	-2.9873*	-4.5965**	I[0]
LTVT	-1.2250	-5.1237**	I[1]	-1.2250	-5.1341**	I[1]
LEXD	-1.6565	-4.1273**	I[1]	-2.1621	-4.0754**	I[1]
LDMD	-1.9374	-4.6138**	I[1]	-1.8426	-4.6119**	I[1]
LDS	-0.6401	-3.8053**	I[1]	-1.7792	-7.7172**	I[1]
LINT	-3.66867*	-5.3101**	I[0]	-3.7455*	-8.6917**	I[0]

Note: \* and \*\* indicate significance at 5 and 1 percent respectively.

Source: Author’s computations, (2023) using Eviews 9.0.

The results indicate that all variables achieved stationarity at the first difference with a one percent level of significance, with interest rate (LINT) the only exception that achieved this at 5 percent at level form. On the other hand, the result of the Phillip-Perron (PP) root tests confirmed that all variables are stationary at the first difference at the one percent level of significance. On the flip side, in addition of interest rate (LINT), the all share index (LASI) was stationary at level at the five percent level of significance (Table 3).

**Bounds Tests for Co-integration**

In the table below, the F-statistic values (5.29 for model I and 10.97 for model II) exceed all the critical bound values at 10%, 5%, 2.5%, and 1% significance levels, as shown in Table 4, so this indicates that the null hypothesis of the absence of a long-run co-integration is rejected, since the F-statistic values are higher than both the upper and lower critical bounds at all specified significance levels. Consequently, there is evidence of a co-integrating relationship among the variables in the model. Therefore, the results in Table 4 confirm the existence of a long-run relationship between the stock market performance (SMI) indicators (LASI and LTVT) and the explanatory variables (LEXD, LDMD, LDS, and LINT). This finding necessitates the assessment of both short and long time horizon connection among SMI indicators and the regressors.

**Table 4: ARDL Bounds Test for Co-integration**

Test Statistic	Model I [ARDL (3, 4, 1, 4, 0)]		Model II [ARDL (4, 4, 1, 4, 3)]	
	Value	K	Value	K
F Statistic	5.291760	4	10.97087	4
Critical Value Bounds				
Significance	IO Bound	II Bound	IO Bound	II Bound
10%	2.45	3.52	2.45	3.52
5%	2.86	4.01	2.86	4.01
2.5%	3.25	4.49	3.25	4.49
1%	3.74	5.06	3.74	5.06

Source: Author’s computations, (2023) using Eviews 9.0.

**Regression Analysis**

**Table 5: Short-Run Error Correction Model and Long-Run Results (Model I)**

Dependent Variable: LASI Method: ARDL							
Model Selection Criteria/ Model Selected: AIC/ ARDL 3,4,1,4,0							
Short-Run Parameters				Long-Run Parameter			
Variables	Coeff.	t-stat	Prob.	Variables	Coeff.	t-stat	Prob.
D(LASI(-1))	0.239666	1.490850	0.1555	LEXD	0.603383	4.381553	0.0005**
D(LASI(-2))	-0.267260	-1.631822	0.1222	LDMD	1.830764	4.598958	0.0003**
D(LEXD)	-0.243724	-2.386366	0.0297*	LDS	-1.459000	-3.478931	0.0031**
D(LEXD(-1))	-0.559878	-3.267503	0.0048**	LINT	0.062117	0.240818	0.8128
D(LEXD(-2))	0.290781	1.550601	0.1406	C	-0.636555	-0.398268	0.6957
D(LEXD(-3))	-0.436183	-2.825128	0.0122**				
D(LDMD)	0.301507	0.933385	0.3645				
D(LDS)	0.043268	0.384766	0.7055				

D(LDS(-1))	-0.158825	-1.182448	0.2543				
D(LDS(-2))	0.342210	2.561465	0.0209*				
D(LDS(-3))	0.226822	2.203351	0.0426*				
D(LINT)	0.031885	0.247789	0.8074				
CointEq(-1)	-0.513314	-3.807224	0.0015**				

Note: \* and \*\* indicate significance at 5% and 1% level, respectively.

Source: Author's computation, (2023) using Eviews 9.0

**Table 6: Short-Run Error Correction Model and Long-Run Results (Model II)**

Dependent Variable: LTVT Method: ARDL							
Model Selection Criteria/ Model Selected: AIC/ ARDL 4,4,1,4,3							
Short-Run Parameters				Long-Run Parameter			
Variables	Coeff.	t-stat	Prob.	Variables	Coeff.	t-stat	Prob.
D(LTVT(-1))	-0.332732	-2.170769	0.0507*	LEXD	2.787718	3.166539	0.0081**
D(LTVT(-2))	-0.336146	-2.875327	0.0140**	LDMD	3.957205	2.612668	0.0227*
D(LTVT(-3))	-0.537589	-2.981438	0.0115**	LDS	-5.046166	-2.585294	0.0239*
D(LEXD)	-0.054717	-0.317202	0.7565	LINT	-3.148697	-2.532224	0.0263*
D(LEXD(-1))	-0.536440	-2.030354	0.0551	C	-6.723538	-1.108133	0.2895
D(LEXD(-2))	0.008887	0.033161	0.9741				
D(LEXD(-3))	-0.709552	-3.120782	0.0088**				
D(LDMD)	-1.602970	-2.974731	0.0116**				
D(LDS)	-0.176187	-0.865178	0.4039				
D(LDS(-1))	0.266855	1.407609	0.1846				
D(LDS(-2))	0.226175	1.121954	0.2838				
D(LDS(-3))	0.256618	1.550924	0.1469				
D(LINT)	-0.581452	-2.690208	0.0197**				
D(LINT(-1))	0.303862	1.670819	0.1206				
D(LINT(-2))	0.292044	1.444873	0.1741				
CointEq(-1)	-0.268140	-3.488431	0.0045**				

Note: \* and \*\* indicate significance at 5% and 1% level, respectively.

Source: Author's computation, (2023) using Eviews 9.0

Tables 5 and 6 summarize the results of the impact of public debts on stock market performance in Nigeria, both in the short and long time horizon, utilizing the Akaike Information Criterion (AIC) lag specification of ARDL (3, 4, 1, 4, 0) and ARDL (4, 4, 1, 4, 3). The long-run results indicate a positive and significant relationship at the 1 percent level between external debt and stock market performance (LASI and LTVT) in both models.

Similarly, domestic debt showed a positive and significant relationship with stock market performance (LASI and LTVT) at the 5 percent level. In contrast, debt servicing had a significant negative relationship with the dependent variables in both models.

In the short run, the ARDL estimates revealed a significant negative relationship between external debt and LASI and a non-significant negative relationship between external debt and LTVT in Table 6. The results also indicate a positive but non-significant relationship between domestic debt and LASI, and a significant negative relationship between domestic debt and LTVT. Debt servicing exhibited a significant negative relationship in Table 5 and a non-significant positive relationship in Table 6. Additionally, the adjustment term (ECT) coefficients have a negative sign and statistically significant at the 1 percent level, indicating how quickly the variables adjust to equilibrium. The coefficients of the ECM (-0.51 and -0.26) indicate that any disequilibrium from previous periods is being adjusted in the present period.

**Table 7: Result of the diagnostic test**

Diagnostic Tests (Test Statistics)	Test	ARDL model 1(3, 4, 1, 4, 0)		ARDL model 11 (4, 4, 1, 4, 3)		Decision
		Coefficient	P-value	Coefficient	P-value	
Breusch-Pagan- Godfrey	Heteroskedasticity	0.670575	0.7836	0.621825	0.8322	No Heteroskedasticity problem
Breusch- Godfrey LM (F-Stat.)	Serial Correlation	0.36111	0.1642	2.55909	0.2238	No Serial correlation
Ramsey RESET Test	Model Specification Error: t-stat. F-Stat.	0.905536 0.819996	0.3795 0.3795	0.325634 0.106038	0.7508 0.7508	Equation is correctly specified
Jarque-Bera statistic	Normality Test	1.1831	0.5534	0.08830	0.9568	Residuals are normal

Source: Author's computation, (2023) using Eviews 9.0



## **V. Result And Conclusion**

The impact of public debts on stock market performance in Nigeria was examined in this study. The source of data was from the statistical bulletin of the CBN from the period starting from 1985 and ending 2021. The characteristics of the data were evaluated using statistical analysis i.e descriptive statistics and correlation coefficient, thereafter the ARDL technique was used to explore the connection between public debts and stock market performance. The explanatory variables analyzed include external debt (LEXD), domestic debt (LDMD), debt servicing (LDS), and interest rate (LINT), with the dependent variables represented by two indicators of stock market performance: the All Share Index (LASI) and Total Volume of Trade (LTVT). The findings indicate varying degrees of relationships between these variables and stock market performance in both the short run and long run across the two models. Specific findings established are as follows:

- 1) External debt (LEXD) has a significant negative impact on stock market performance when LASI is used as an indicator in the short run. In the long run, external debt has a significant positive effect on stock market performance when both LASI and LTVT are used as indicators. These findings align with those of Agwu and Godfrey (2020) and Ochieng (2022), but contradict the results of Irfan et al. (2020) and Ozigbu and Ezekwe (2020).
- 2) Domestic debt (LDMD) shows a significant negative effect on stock market performance when LTVT is used as an indicator in the short run; also in the long run, LDMD has a significant positive effect on stock market performance when both LASI and LTVT are considered. These findings are consistent with the studies of Sede and Omorokunwa (2015) and Agwu and Godfrey (2020), but differ from the results of Agheyisi and Edore (2014) and Muyanga (2014).
- 3) Debt servicing (LDS) has a significant negative effect on stock market performance in the long run when both LASI and LTVT are used as indicators.

### **Conclusion**

The role of public debt in the performance of the stock market cannot be underestimated, as experts in existing literature generally agree that public debt influences stock market performance. The Nigerian Exchange Limited plays a crucial role in the development of Nigeria's financial markets, and any challenges it encounters significantly impact the entire financial system. Therefore, it is essential to focus on its performance. This study empirically investigates the impact of public debts on stock market performance in Nigeria from 1985 to 2021. Correlation and descriptive statistics were employed to examine the background characteristics of the data set, while time series properties were checked using stationary tests and standard diagnostic tests. The ARDL technique was utilized to evaluate the two models (LASI and LTVT) stated in the study.

The results indicate that public debt (external debt, domestic debt, and debt servicing), along with the control variable (interest rate), significantly impact stock market performance in Nigeria across all temporal dimension. Therefore, it is crucial for key stock market stakeholders, particularly the government, to pursue, initiate, and implement policies that will promote the Nigerian Exchange Limited as a platform for facilitating the sales of long-term sources of finance.

Based on the findings and discussions, the following policy recommendations are offered:

1. Given that external and domestic debt have a positive and significant impact on stock market performance in the long run, the government should consider raising Nigeria's levels of external and domestic debt within appropriate limits. These funds should be allocated to productive economic activities, such as long-term infrastructural projects, capable of enhancing the country's economic health in the long run, ultimately fostering improved stock market performance.
2. The study found that debt servicing negatively affects stock market performance in Nigeria in the long run.

Therefore, policies should be geared towards reducing the existing public debt stock to prevent the economy from experiencing debt overhang, which can hinder growth and adversely impact stock market performance.

### **Contributions to Knowledge**

The major contributions of the study to knowledge are in the areas of general literature, policy orientation and policy directions. These include:

- (i) The study used recent time series data to examine the subject matter, thereby making the findings of the study relevant to current time and economic dynamics.
- (ii) In measuring the stock market performance, the study utilized two measures. This further improves on previous studies that utilized one measure of stock market performance.
- (iii) Furthermore, the three models (LASI and LTVT) developed in this study represents a major contribution not only to extant literature, but also provides a strong tool for driving the performance of stock market in Nigeria. Though the current study has examined the effect of public debt on the performance of stock

market in Nigeria, there are other areas that further studies could provide a variety of implications for the current study. The following areas of further studies are suggested:

1. Further studies should disaggregate external debt into multilateral debt, guaranteed external debt, bilateral debt and external commercial debt in order to broaden the public debt variables that could influence stock market performance. Also, other possible factors (control variables) in addition to interest rate that may influence the performance of stock market such as inflation rate, exchange rate, foreign portfolio investment and trade openness should be studied.
2. Further studies should examine the subject matter by adopting a cross country analysis so as to facilitate cross- country comparison.
3. Finally, further studies on public debt – stock market performance nexus should utilize other econometric techniques like the system Generalized Method of Moments (GMM) estimation technique to examine the relationship.

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