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The Long-Run Impact of Bond Market on the Growth of the Capital Market in Nigeria

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Abstract:

The capital market as a market for long term funds is considered a catalyst for economic growth, particularly in a developing economy like Nigeria, and bond market is an essential component of the capital market. This study examined the long-run impact of bond market on the growth of the capital market in Nigeria, covering the thirty nine years period from 1981 to 2019. It utilised empirical method to analyse the secondary and time series data obtained for the study from the Central Bank of Nigeria Statistical Bulletin, and employed the Auto Regressive Distributed Lag (ARDL) bound test and co-integration analysis to examine the relationship between the variables. The study found out that bond market has a positive influence on the growth of the capital market in Nigeria, especially in the long run; and recommended that there is a need for the introduction and availability of more investment instruments like derivatives, to boost volume of transactions on the capital market, and secondly, that both the states and federal governments should continue to float more bonds as debt instruments, not only to access funds, but to further deepen the capital market.

Keywords: Bond, Derivatives, Capital market, Sinking Fund, Securities, Portfolio

1. Introduction

1.1. Background to the Study

Bond financing has become a global phenomenon and constitutes a focal point for project financing by both public and private sectors of most economies. This key role of the bond market in meeting financial needs makes it so imperative that concerted efforts have to be made to ensure its sustained development. As a result of this, the development of domestic debt securities markets has increasingly attracted the attention of national and international policy makers (Financial Stability Forum, 1999). The domestic debt, which is predominantly government bond, stems from the need to identify and exploit alternative financing sources by other tiers of government (states and local governments) to bridge the persistent national budget deficit financing gap as well as the infrastructural need of economies. The private sector also needs funds for investment and infrastructure. Such dearth of resources required for project or infrastructure financing by most economies, coupled with the high cost of borrowing from the banking sector triggers the preference for domestic debt securities, which provides less risky, less costly and easily accessible financial sources.

Bond market development, which involves domestic debt (typically Federal Government, State Government, and municipal bonds) as well as corporate bond development, is a crucial aspect of debt management. It supports the external debt component and ensures an equitable debt portfolio of a country as well as reduces pressure on foreign debt. The essence of domestic and public debt management is to ensure that government financial needs and its payment obligations are met at the lowest possible cost over the medium to long term, consistent with a prudent degree of risk (IMF and World Bank, 2001). An effective domestic debt management would enhance efficient budget deficit and project financing. In a similar vein, effective public debt management would ensure a balanced and sustainable national debt portfolio, eliminate the problem of debt overhang, and facilitate efficient project financing.

For a developing economy like Nigeria, the development of the bond market is a key focus of the government's economic development strategy. It is therefore apposite that every government which seeks independence in fiscal financing must initiate concerted efforts aimed at developing the bond market with the consequence of supporting capital market growth (Oke, Dada & Aremo, 2021). Bond market will also enable corporate firms to raise long term capital which will in turn generate employment and promote growth in output.

The bond market in Nigeria has undergone a series of challenges over the years, with accompanying policy efforts by the Nigerian government towards its sustainability. Despite being only a subset of the capital market, bonds have continued to witness relative growth irrespective of the global economic meltdown and the subsequent Nigerian stock market crash of 2009.

In examining the strategic role of bond markets, Kahn (2005) posits that bond markets, which attract foreign investors, could contribute to the growth of the capital market by providing an efficient economic system, greater investment opportunities, and help deepen financial markets. This would direct the pattern of monetary policy, and enhance inflows of foreign investment. Since persistent reliance on foreign debt, especially where such debts are not project-driven, could lead to debts overhang even if concessional in nature, the option of expanding the domestic debt needs to be explored. However, provided a debt is project driven and sustainable, with strong justification for its existence, it may be encouraged.

Bond market helps to enhance the growth of the capital market by attracting foreign investors, enabling an efficient economic system, providing greater investment opportunities, deepening of the financial markets, as well as helping to steer monetary policy direction. As a result, bond market is considered by many scholars as a major factor in the economic transformation process of a country (Ogboi, Njogo, Nwankwo, 2016).

1.2. Objectives of the Study

The main objectives of the study are to:

- Determine the long-run impact of the bond market on the growth of Nigeria's capital market, and;
- Examine the extent to which various interest rates and money supply affect the value of the bond market in Nigeria in the long run.

1.3. Research Questions

The research questions to be addressed by this study are:

- In what ways has the bond market influence the growth of the capital market in Nigeria in the long run?
- How do interest rates and money supply affect the development of the bond market in Nigeria in the long run?

1.4. Research Hypotheses

The following null hypotheses were formulated:

- H0: Bond market has no long-run impact on the growth of the capital market in Nigeria.
- H0: Interest rates and money supply have no long-run effect on the bond market in Nigeria.

2. Literature Review

2.1. Conceptual Literature

Bond is a long-term generic name for tradable financial debt instruments usually issued on a long-term basis (SEC, 2010). A bond is also viewed as a certificate of indebtedness issued by a borrower to a lender (Onaolapo&Oluwafemi, 2010). It is an interest-bearing debt security/instrument issued by corporate bodies, governments and government agencies for the financing of infrastructure or for expansion purposes. It involves a promise to make periodic interest payment to the subscribers and also the repayment of the initial amount borrowed at maturity of the bond. Repayment of the principal is usually in a steady and regular stream of payments. This is done by means of a sinking fund. Each year, certain sum of money is kept in the sinking fund, which is used to repay the debt at maturity. (A financial system usually has units with surplus funds at its disposal and units with insufficient funds. Bond investment belongs to the unit with surplus funds and would include insurance companies, investment and fund managers, pension fund administrators, etc). A bond market on the other hand refers to an arrangement where bonds are traded. This arrangement facilitates offer by the borrower, and acceptance, which must be backed by a consideration from the lender (Barmash, 2003). Trading in bonds therefore entails the exchange of bonds from one person or organization to another.

2.1.1. General Features of a Bond

Onaolapo and Oluwafemi (2010), states that a bond has the following features:

- It is an IOU for a fixed amount.
- It is a debt instrument with a par/face value printed on the face of the selling document.
- It usually has a redemption / maturity date.
- It is a negotiable instrument. This means that it can be transferred to a third party either through sale at the stock exchange or through a nominal transfer to a blood relation.
- It has a market price which may be different from its face value. The initial market price is the price at which the bond was sold in the primary market, while the subsequent market price is the price at which it is sold on a stock exchange (which is dependent on the forces of demand and supply).
- The interest payment is usually twice a year.

2.1.2. Types of Bonds

Bonds can be categorized according to their issuer. Thus, there are Federal Government (Sovereign) Bonds, Government Agency Bonds, State and Local Governments Bonds, and Corporate Bonds (Luka, 2014).

2.1.2.1. Federal Government (Sovereign) Bond

These are issued by a national government. They are regarded as the safest bond investment for the simple reason that they are backed by the full faith and credit of the federal government, but they may not yield the highest returns in

comparison with other types of bonds. For this reason of safety, this class of bonds are generally referred to as Gilt-edged securities. They are usually used as benchmark by other bond issuers in determining the interest rates and maturity of their bonds. Government Agency bonds are issued by government agencies or privately owned corporations that are sponsored by government agencies. They are also considered safe. These types of bond investments have higher yields than sovereign bonds. Examples of such bonds are mortgage backed bonds. State and Local Government Bonds are issued by state and local governments. They are also called Municipal Bonds. They can be general obligation or revenue bonds. General obligation bonds are issued to finance the various projects of the government, and backed by the income of the specific project for which the bond was issued.

2.1.2.2. Corporate Bonds

Apart from issuing of shares, companies also issue debt instruments to raise funds to finance their various projects. One reason for adopting such option of financing is to avoid dilution of their shareholdings. Corporate bonds otherwise called debentures (if not secured) are the riskiest of fixed income securities because of the possibility that the issuing company can delay or default in payment of the interests and principal due to unforeseen economic /financial downturn. For this risk, they offer the highest returns in comparison to other fixed income securities. The issuing of bonds may cut across national borders. For example Global (International) Bonds are denominated in a single currency in various countries (Gasper, Hartmann and Sleijpen, 2002).

2.1.3. Features of Bonds

According to Onaolapo and Oluwafemi (2010), apart from the six general features of a bond outlined in Section 2.1.1 above, bonds also have four main unique features. These are:

2.1.3.1. Redeemable or Irredeemable Bond

With a redeemable feature, the principal of the debt instrument is redeemed or paid back to the creditors on a specified date or at specified intervals. With an irredeemable feature, there is no such arrangement to pay back the principal to the creditors. The debts have no fixed date of maturity and could be held for ever but interest will continue to be paid on the debt, and if the holders so wish, they can sell off their holdings to other interested investors.

2.1.3.2. Fixed or Floating Interest Rate Bond

A bond with a fixed interest rate means that the stated percentage of the nominal /face value of the bond will be paid as interest to the bondholders yearly, prior to the maturity of the bond, whereas interest rate payment on a floating rate bond will vary from year to year, depending on a benchmark interest rate which could be the Minimum Rediscount Rate (MRR) of the Central Bank of Nigeria (CBN).

2.1.3.3. Convertible or Non-Convertible Bond

The convertible feature gives the investors the right to convert the interest-bearing securities to other securities (particularly equities), usually within a specified period. A non-convertible debt security cannot be converted into any other form of securities.

2.1.3.4. Secured or Unsecured

A secured debenture is guaranteed against certain assets of the company; and in case the company winds up during the life of the secured debt, the holder of the security has a preferential claim over the specified assets of the company. An unsecured bond means there is no pledge against the assets of the company. In the case of liquidation, secured debt securities holders are considered first, followed by unsecured debt securities holders.

2.2. Theoretical Literature

The bond market is a vital aspect of an economy and is guided by quite a number of theories. These include the Term Structure Theory, the Interest Group Theory, Theory of Corporate Capital Structure, Financial Structure Theory, Financial Innovation Theory, Information Economics Theory, Ricardian Equivalence Theory, Financial Deepening Theory, Segmented Market Theory, Loanable Funds Theory, Financial Dualism Theory, Leibenstein's Theory on Shocks and Stimulants, The Domar Model, Debt Overhang Theory, and Institutional Economic Engineering Theory. This study is hinged on the Term Structure Theory, as shall be discussed later in Section 3.

2.2.1. The Term Structure Theory

One of the related theories is the Term Structure of Interest Rates, which addresses the relationship between the maturity of debt and its cost (Pandey, 2010). It is best estimated through yields in the default risk free government securities (Bhalla, 2009). Interest rates and monetary policy issues are germane in assessing bond market performance. Monetary policy authorities, which must be concerned with the structure and operation of the bond market, use bonds to define the yield curve and to ensure stability of short term rates (Afrinvest, 2010).

2.2.2. The Ricardian Equivalence Theory

The Ricardian Equivalence Theory otherwise known as the Barro-Ricardian Equivalence Theory, which was first initiated by David Ricardo in the nineteenth century, and later developed by Robert Barro posits that government effort to stimulate demand through debt-financed government spending, does not have impact in the long run because of the

savings attitude of the public towards future tax increases. The argument from the Ricardian school of thought is that since government would naturally raise taxes to pay back its debt, the savings attitude of the public towards taxes would eventually neutralize the impact of government borrowing, which in the long run renders demand unaltered (Gasper, *et al.*, 2002).

The theory negates the aspect of project finance, which is the main crux of debt financing in the contemporary society. Project-driven financing implies calculated borrowing such that the returns or cash flow generated from a project is enough to finance the project. This means that if money is borrowed to generate infrastructure such as electricity, it would be planned in such a way as to ensure that the income generated from such an infrastructure is able to pay back the loan (including interest) that accrues to it. This would boost production, enhance business activities, encourage competitiveness, and lead to efficiency within the economy. The implication of such stimulation of economic activities is that demand would eventually be enhanced (Gasper,*et al.*, 2002).

For developing nations where structures are still largely underdeveloped, avenues exist for mismanagement of funds and wrong channelling of funds. This has a tendency towards distortions in the numbers. This could even make it more difficult to establish empirically whether or not demand is enhanced as a result of government borrowing (Gasper, *et al.*,2002).

2.2.3. The Market Segmentation Theory

The Market Segmentation Theory as proposed by Culbertson (1957) assumes that debt management is segmented based on the maturity of debt, in relation to demand and supply, and by implication that there are barriers of switching between short and long term investments. An inference is drawn and criticized by many scholars. The implication of this position is that the bond market is segmented into different markets with developments in an aspect of the market exerting little or no influence on other segments of the market. Pilbeam (2005) confirms this inference and argues that it could only be used to explain the different varieties of yield curve shapes, but not the situation of investors and institutions as they will not move investments between different maturity horizons as an impulse to fluctuating interest rates. A study on bond market development looks at the entire bond market as a conglomerate of bonds, which add up to support the financing of projects.

2.3. Empirical Literature

Oke, Dada and Aremo (2021), examined the impact of bond market development on the growth of the Nigerian economy for the period 1986 to 2018. Using the Augmented Dickey-Fuller (ADF) unit root test, the study found out that government bonds exhibited an insignificant positive relationship; corporate bonds and value of bonds traded were positive and statistically significant, while bond yield indicated a negative relationship with the growth of the Nigerian economy.

Akinsokeji (2016) examined the extent to which the bond market influences aggregate investment and the Nigerian economy using a disaggregated data approach for the period 1980 to 2013. The study employed the Vector Error Correction Model (VECM) and Granger Causality, and found no direct relationship between macroeconomic variables and economic growth, but noted that savings promote the widening of the bond market. The causality test indicated that the flow of bond market moves from bond to savings, then from savings to investment, and finally from investment to real GDP growth. Ndinda (2012) examined the relationship that exists between treasury/government bond issuance and economic growth from 2003 to 2011 in Kenya. The study utilised a descriptive and ordinary least square (OLS) regression analysis on variables such as gross domestic product (GDP), market capitalization of bonds, value of bonds traded and total new issues of bonds. The results revealed that government bonds have a positive effect on the level of economic growth in Kenya.

Onaolapo and Oluwafemi (2010) examined the development of the bond market in relation to the Nigerian economy using OLS regression analysis. The study revealed a considerable link between bond market and economic growth, with bond market size and liquidity being significant determinants of economic growth in Nigeria. A similar study on Nigeria by Adofu and Abula (2010) on domestic debt and the Nigeria economy, investigated the empirical relationship between debt and economic growth in Nigeria using OLS regression techniques. The findings indicated that domestic debt has a negative effect on the growth of the Nigerian economy. They argued that domestic debt should be discouraged and advocated for increase in the revenue base through reform programmes. Although the two studies above are country specific since they focus on Nigeria, they are not encompassing since they are only limited to bond size of the Nigerian bond market vis-à-vis economic growth.

The seminal work of Eichengreen and Luengnaruemitchai (2004) documented that developmental stage of the economy, size of the banking system, geographical endowments, and environment, among others have a positive direction to bond size, with their enhancement. Furthermore, they posited that economic size and natural openness are weakly and positively related to bond size. Similarly, Bhattacharyay (2011) utilized Ordinary Least Square (OLS) fixed and random effects, as well as generalized least square. The study opined that the size of the economy, stage of economic development, openness of the economy, size of the banking system, and interest rate spread constitute major determinants of bond financing. It is worthwhile to enquire whether such determinants follow similar pattern for the Nigerian bond market.

Eichengreen and Luengnaruemitchai (2004) examined the relationship between the banking sector and bond market development for 41 countries and documented that countries with competitive, well-capitalized banking systems have larger bond markets. The study pointed to a complementary relationship between banks and bond market development. The mixed results suggest a need for further research to explore the relationship between banks and corporate bond market development. This means that deposit money banks could either play competitive or

complementary roles. Many researches, for example, Adelegan and Radzewicz-Back (2009), and Raghavan and Sarwono (2012) documented the contribution of banks towards the development of effective and liquid bond market, especially by their role as dealers and market makers. Bhattacharyay (2011) documented the presence of a large, well developed, competitive, and well-capitalized banking system as a prerequisite for developing a liquid and properly functioning bond market. According to Hawkins (2002), such banks double as dealers and market makers. This is the same situation in Nigeria where most of the Primary Dealer Market Makers (PDMMs) are deposit money banks.

Said (2012) examined how the debt market affects the growth of the Asian economies of China, Thailand, Hong-Kong, Japan and South Korea for the period 2002 to 2009. The study employed a panel regression analysis and found out that debt structure in both public and private sectors contribute positively and significantly to economic growth.

In the study which examined the impact of government bonds on capital market performance in Nigeria for the period 1990 to 2016, Opara (2020), employed the Ordinary Least Square (OLS) technique to test the hypotheses formulated and concluded that Federal government of Nigeria bonds has a significant impact on capital market performance in Nigeria, and Federal government total new issue has a significant impact on capital market performance in Nigeria.

From the above empirical review, it is evident that there is a dearth of literature on the relationship between bonds market and capital market development in Nigeria. Most of the available studies have focussed on bonds market and overall economic growth in Nigeria, and the banking sector influence in the development of the bonds market. This is the gap that this study attempts to address.

3. Methodology

3.1. Theoretical Framework

The study hinges its model on the Term Structure of Interest Rates, which addresses the relationship between the maturity of debt and its cost (Pandey, 2010). The theory estimated through yields in the default risk free government securities (Bhalla, 2009). The theory postulated that bond market performance are highly determined by interest rates and monetary policy and, in turn, contribute to the capital market development. The bond market is very germane in assessing the capital market performance. Therefore, whatever determines its cost and yield is germane. Monetary policy authorities are always concerned with the structure and operation of the bond market, and use bonds to define the yield curve and to ensure stability of short term rates (Afrinvest, 2010).

3.2. Data and Methods

Empirical method is the most appropriate method to be used for studies that involve secondary and time series data. Secondary data that was sourced from statistical bulletin, 2019 edition of Central Bank of Nigeria from the period of 1981 to 2019 were used in the study.

The study adopts the ARDL bound test and co-integration analysis to examine the long-run impact of bond market on capital market as well as the effects of interest rates on bond market. The co-integration coefficient is essential to determine the long-run equilibrium relationship among the variables. From the theoretical framework, the bond cost is determined by interest rates and monetary policy (money supply contribution to GDP), and bond market is an essential component of capital market. The study estimated 2 models to achieve the stated hypotheses of the study.

Model for Hypothesis 1

The functional relationship is expressed thus

$$BNM = f(FDM, INF, LEN, SAV, TRB, DEP) \quad 3.1$$

The explicit form of equation 3.1 is represented in ARDL model as follows:

$$\begin{aligned} \Delta BDM_t = & \partial_0 + \sum_{i=1}^k \Pi_i \Delta BDM_{t-i} + \sum_{i=1}^k \Phi_i \Delta FDM_{t-i} + \sum_{i=1}^k \Lambda_i INF_{t-i} + \sum_{i=1}^k \Omega_i \Delta LEN_{t-i} + \sum_{i=1}^k \Psi_i \Delta SAV_{t-i} \\ & + \sum_{i=1}^k \theta_i \Delta TRB_{t-i} + \sum_{i=1}^k \varpi_i \Delta DEP_{t-i} + \partial_1 BDM_{t-1} + \partial_2 FDM_{t-1} + \partial_3 INF_{t-1} + \partial_4 LEN_{t-1} \\ & + \partial_5 SAV_{t-1} + \partial_6 TRB_{t-1} + \partial_7 DEP_{t-1} + COINT + \mu_t \end{aligned} \quad 3.2$$

The study accounts for the co-integrating factor by including COINT as explanatory variable where Δ denotes first difference of variable, μ_t is a random 'disturbance' term, ∂_0 is the intercept, while $\Pi, \Phi, \Lambda, \Omega, \Psi, \theta$ and ϖ are the short-run dynamics coefficients of explanatory variables the long-run dynamics coefficients are denoted by ∂_i . BDM is the dependent variable, which its lagged values are included in the independent variables scalar. The explanatory variables comprise financial deepening (FDM), inflation rate (INF), lending rate (LEN), savings rate (SAV), treasury certificate rate and deposit rate. The ARDL method estimates its regressions up to the number of $(p+1)^k$ in order to obtain the optimal lag length for each variable in the model. Where the maximum number of lags to be used is denoted by p and the number of variables in the equation is represented by k . An appropriate lag selection based on Akaike Information Criterion (AIC) is adopted.

Where BDM is bond value percentage contribution to market capitalization, FDM is financial deepening (expressed as money supply percentage share in GDP), TRB is short-term treasury certificate rate, DEP is the over 12 years deposit rate.

Equation 3.2 is specified to ascertain the effects of various interest rates on the extent of bond market contribution to capital market.

Model for Hypothesis 2

$$ASI = f(BDM, EQM, GOVM, FDM, INF, LEN) \tag{3.3}$$

The explicit form of equation 3.1 is represented in ARDL model as follows:

$$\begin{aligned} \Delta ASI_t = & \partial_0 + \sum_{i=1}^k \Pi_i \Delta ASI_{t-i} + \sum_{i=1}^k \Phi_i \Delta BDM_{t-i} + \sum_{i=1}^k \Lambda_i EQM_{t-i} + \sum_{i=1}^k \Omega_i \Delta GOVM_{t-i} + \sum_{i=1}^k \Psi_i \Delta FDM_{t-i} \\ & + \sum_{i=1}^k \theta_i \Delta INF_{t-i} + \sum_{i=1}^k \varpi_i \Delta LEN_{t-i} + \beta_1 ASI_{t-1} + \beta_2 BDM_{t-1} + \beta_3 EQM_{t-1} + \beta_4 GOVM_{t-1} \\ & + \beta_5 FDM_{t-1} + \beta_6 INF_{t-1} + \beta_7 LEN_{t-1} + COIN + \varepsilon_t \end{aligned} \tag{3.4}$$

dependent variable is All Share Index (ASI), while the independent variables are lagged value ASI, bond (BDM), equity (EQM) and government securities (GOVM); all expressed as percentage contribution to market capitalization. Other independent variables are financial deepening (FDM), inflation rate (INF) and lending rate (LEN). ε_t is the associated error in the model.

4. Data Analysis and Results

The trend pattern of bond value in Figure 1 is a typical illustration of a sharp rising trend within a short period. This upward surge in the bond value occurred in 2010 and 2014. While 2010 is the aftermath of the survival of the global economic meltdown of 2009, in 2014, bond transactions fell drastically due to pressure as a result of the incoming national elections in 2015. The buying of bond was predominant in 2009 with the perception that the financial market has been stabilized. However, this outlier in trend pattern did not last which may be strongly linked to diversion of fund from investing in portfolio assets to electioneering.

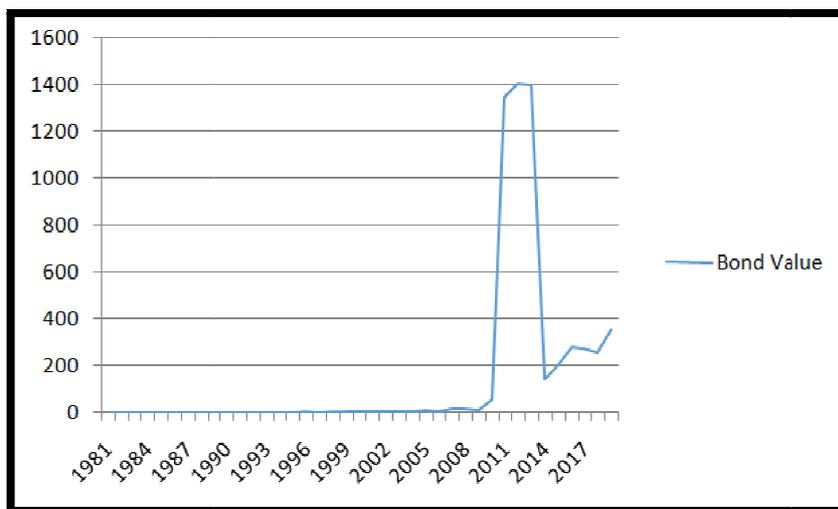


Figure 1: Bond Transaction Volume
Source: Author's Computation, 2021

Equity has been shown to have the highest percentage contribution to market capitalization in capital market over the span of four decades as revealed in Figure 2. Government securities was initially contributing high from 1981 to 1987, however, after the deregulation policy which culminated in the removal of restrictions in establishing financial firms, equity transactions increased tremendously. The contribution of bond market to capital market transactions has been on the decline since 1981 till date. A substantial increase of 20% was recorded in 1982, but it was not sustained.

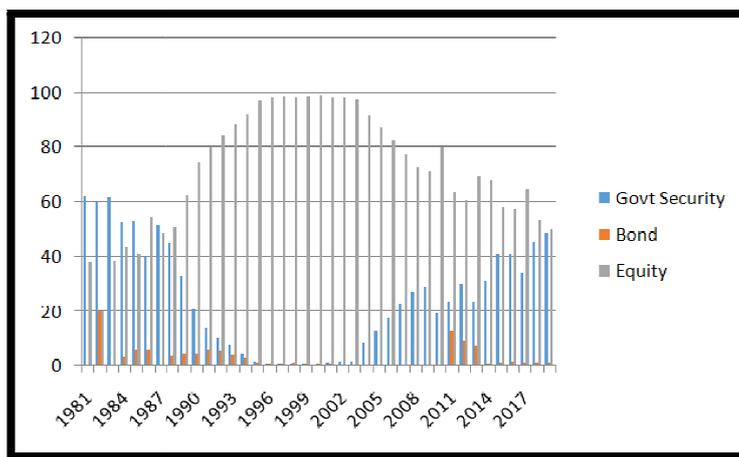


Figure 2: Percentage Contribution of Government Securities, Bond and Equity to Market Capitalization
 Source: Author’s computation, 2021

All share index graphical movement has shown to be highly volatile and unpredictable. Although, there appeared to be a rising trend from 1999 to 2008, however, the global economic meltdown shrank the ASI drastically from ₦50,424 billion in 2008 to ₦23,091.5 billion in 2009. The value later picked up to ₦30,867.2 billion in 2015 and dropped to ₦29,060.3 billion in 2019.

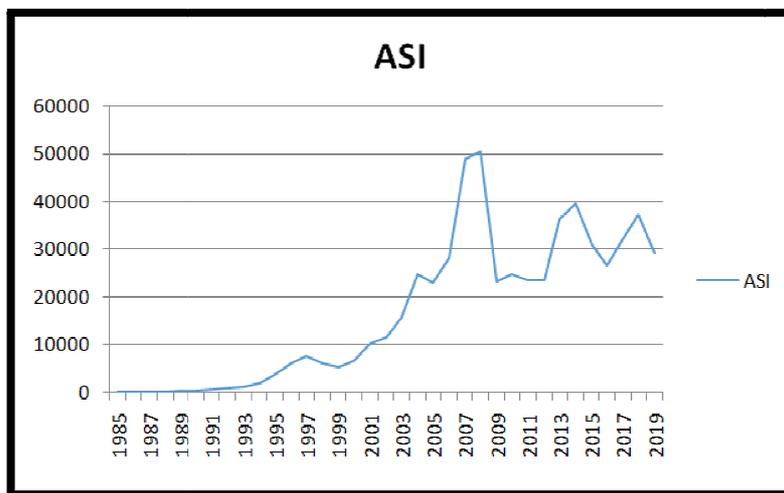


Figure 3: All Share Index in Nigeria

Table 1 reports the correlation test between ASI and its respective independent variables and Bond alongside with its independent variables. The correlation results of ASI shows a significant moderately positive relationship between financial deepening (FDM) and treasury bills rate (TRB). However, it indicates a moderately negative and significant relationship with BDM, DEP and SAV. The positive relationship that exists between ASI and financial deepening further strengthened the findings of Opara (2020) that capital market growth relates very well with the level of financial inclusion in the economy. Also, the positive relationship between ASI and treasury bills rate implies that a high demand for short-term securities is in tandem with the performance of capital market.

Variables	BDM	DEP	EQM	FDM	GOVM	INF	LEN	SAV	TRB
ASI	-0.60*	-0.48*	0.24	0.52*	-0.18	-0.36	-0.16	-0.68*	-0.42*
BDM		0.54*	-0.53*	-0.19	0.44*	0.35	0.02	0.71*	0.30

Table 1: Pearson Correlation Analysis
 Source: author’s computation, 2021. * denotes 5 % level of significance

The results in Table 2 displayed the ARDL Bound test model estimation of Bond Market Model in equation 3.2. From the short-run results, financial deepening (FDM) short-run dynamics has a positive and significant impact on bond value contribution to capital market. The more inclusive the financial sector is, the more the value of bonds and its influence in capital market will grow. Monetary authorities in the attempt to increase the desire to buy bonds need to increase money supply. This will have strong influence on the bond market. The short run dynamics of inflation rate (INF), lending rate (LEN), savings rate (SAV), treasury bills (TRB) and deposit rate are shown to have an adverse effect on bond market share in market capitalization. This proves further the ‘shunting effect’ position of monetarists. The adjustment of portfolio assets is made possible when any of the yield return is affected. Therefore, bond value will receive a boost when

interest rates fall. However, in the long-run dynamics, lending rate and savings rate significantly contributed negatively to bond value. Deposit and treasury bills rates were shown to have a positive and significant impact on bond value share of capital market in the long-run. Deposits are commercial banks liquid liabilities while treasury bills are liquid assets because of their short-term trading activities. So it is pragmatic that deposits and short term treasury bills impact positively on bond market because investors can easily withdraw their deposit at the shortest notice.

Other reliability and OLS functionality tests show a good and appropriate result. The bound test indicate that a long term relationship equilibrium exist among the variables. The heteroskedasticity and serial auto correlation tests indicate that there is no presence of the associated problems in OLS. This entire test further strengthens the reliability of the results and its validity.

Variable	Coefficients	t-statistic
D(FDM)	0.98*	6.10
D(FDM(-1))	0.99*	7.56
D(INF)	-0.06*	-4.03
D(LEN)	-0.16*	-3.02
D(LEN(-1))	0.71*	5.79
D(SAV)	-0.58*	-4.91
D(SAV(-1))	-0.64*	-5.71
D(TRB)	-0.11	-1.60
D(TRB(-1))	-0.79*	-5.30
D(DEP)	0.97*	8.56
D(DEP(-1))	-0.07	-0.78
FDM(-1)	-0.53*	-4.13
INF	0.03	2.59
LEN(-1)	-1.69*	-6.51
SAV(-1)	-0.66*	-4.34
TRB(-1)	1.21*	5.22
DEP(-1)	1.83*	9.09
BDM(-1)	-2.52*	-14.85
CointEq(-1)	-1.86*	-8.89
C	11.46*	4.48
Adjusted R-squared	0.97	
F-statistic	38.06*	
Durbin-Watson stat	2.29	
Heteroskedasticity	3.95	
Serial Correlation LM	0.02	
Bound Test		
F-statistic	63.72139	6
Significance	I0 Bound	I1 Bound
10%	2.12	3.23
5%	2.45	3.61
2.5%	2.75	3.99
1%	3.15	4.43

Table 2: Bond Market Model

Source: Author's Computation, 2021 Using Eviews 10. Bond Value Contribution to Market Capitalization (Bdm) Is the Dependent Variable. * Denotes 5% Level of Significance

The results in Table 3 displayed the ARDL Bound test model estimation of All Share Index (ASI) in equation 3.4. ASI is used to proxy capital market based on its valued securities. From the short-run results, bond value percentage share in capital (BDM) in the current period has a positive and insignificant impact on bond value contribution to capital market. However, this is not the case in the previous value effect on ASI. The previous values of bond percentage share in capital market significantly affected the capital market. A short period 1% increase in the bond market percentage share to market capitalization (BDM) will contract the ASI by ₦40,426.41 billion. Nevertheless, the long-run dynamics showed a significant positive effect on ASI, which implies that 1% increase in bond contribution to capital market will increase the value of ASI by ₦16,6078.40 billion in the long-run. The positive long-run effect of BDM on ASI is as a result of growing trust and inherent value of long term securities, where the impact will not be initially felt in the short-run. This is also the case of equity percentage share in market capitalization (EQM) and government securities percentage share to market capitalization (GOVM) where they were negative in short-run dynamics and positive in the long-run.

The interest rate (LEN) revealed a significant adverse effect on ASI both in the short-run and the long-run dynamics and this is as result of investment decision makers preferring to keep their idle cash in form of deposits and investors directing their investment decision to the financial market rather than the capital market. Therefore the higher the interest rate, the

lower the focus on bond transactions via its contribution to capital market. The financial deepening (FDM) is very significant in the long-run and not significant in the short-run, while the relationship of monetary inclusion in the economy is very effective in the long-run rather than the short-run.

Variable	Coefficients	t-statistic
D(BDM)	26279.19	1.99
D(BDM(-1))	-40426.41*	-2.39
D(EQM)	26429.93	1.99
D(EQM(-1))	-40574.11*	-2.38
D(GOVM)	26040.61	1.97
D(GOVM(-1))	-40784.97*	-2.39
D(LEN)	-460.09*	-2.05
D(LEN(-1))	253.53	1.12
D(FDM)	451.39	0.75
BDM(-1)	166078.40*	5.15
EQM(-1)	166340.00*	5.14
GOVM(-1)	166146.30*	5.14
INF	9.74	0.17
LEN(-1)	-891.66*	-2.73
FDM(-1)	1584.72*	3.15
ASI(-1)	-0.14	-0.96
CointEq(-1)	-0.14	-0.96
C	-16628200	-5.14
Adjusted R-squared	0.687003	
F-statistic	5.39*	
Durbin-Watson stat	1.96	
Heteroskedasticity	0.61	
Serial Correlation LM	0.038	
Bond Test		
F-statistic	4.45	6
Significance	10 Bound	11 Bound
10%	2.12	3.23
5%	2.45	3.61
2.5%	2.75	3.99
1%	3.15	4.43

Table 3: All Share Index Model

Source: Author's Computation, 2021 Using Eviews 10. All Share Index Is The Dependent Variable. * Denotes 5% Level Of Significance

The results in Table 3 further indicate a strong goodness of fit and a significant overall model. The model shows the absence of the associated error in OLS. Accordingly, the study is robust and well suitable for the analysis.

The study therefore concludes that bond market is very crucial to influence positively the activities of the capital market, especially in the long-run. It was also observed that most of the interest rates have negative effects on the extent to which bond market contribute to volume of capital market transactions in the long-run in Nigeria.

5. Conclusion and Recommendations

From the analysis of results presented in Section 4, the study established a positive relationship between bond market and the volume of capital market transactions in the long run. It therefore concludes that bond market positively influences the growth of the capital market in Nigeria in the long-run. It recommends that there is a need for the introduction and availability of more investment instruments such as derivatives, to continue to boost volume of transactions on the capital market, and that both the states and federal governments should continue to issue more bonds as debt instruments not only to access funds, but to further deepen the capital market.

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