
FIXED INCOME SECURITY MARKET AND NIGERIA'S CAPITAL MARKET PERFORMANCE

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ABSTRACT

The study examined the impact of fixed income securities on performance of Nigeria's capital market for the period of 1990-2019. The study adopted ARDL model to examine how fixed income security market contributes to performance of Nigerian capital market over the period. The results reveal a positive impact of bonds on capital market performance, though not statistically significant. The results further indicate that fixed income security do not have long-run effect on capital market performance. The study recommends that fixed security market should be reinvigorated in terms of issues and admission of more corporate organizations that are in need of long-term capital to finance their operation into the market.

Keywords: corporate bonds, government bonds, market capitalization, capital market

INTRODUCTION

The activities of capital market in mobilizing and channeling financial resources in an economy to users of fund cannot be underestimated. These activities provide long term funds of different maturities to firms operating at different sectors of the economy, thereby leading to economic growth of the nation (Mu et al., 2003). The capital market operates in two different forms - primary market and secondary market. The primary market caters for new issues of financial instruments while the secondary market deals with transfer of ownership of existing financial instruments from one investor to another. The efficiency of these markets, especially the secondary market, enhances mobilization of funds from surplus units of the economy (Ojo, 2010).

There are various instruments traded on the floor of capital markets. These include ordinary shares, otherwise known as common stocks, preferred stocks, bonds, debenture, loan stocks and

mortgage bonds. Each of these instruments has its peculiarities and issuers. For instance, ordinary shares are issued by quoted companies and the holders are shareholders. They are the owners of the firms that issue the shares. In the same vein, preferred stocks are issued by quoted companies but holders are not part of the owners rather, they are creditors to the firm in most cases. In case of bonds and debentures, government at different levels issues bonds while bonds issued by companies are called debenture. Both shares the same features except that their coupons are differed (Pandey, 2016). The trading activities on each of these instruments contribute significantly to overall performance of the capital market.

In this study, bonds were used to represent bonds and debentures though issuers are different. Bond is a form of long term fixed income security that guarantees annual, semi-annual or quarterly inflow of interest and repayment of the principal at maturity. Bonds constitute an appropriate source of finance to governments as well as private companies for funding long-term investment (Ajayi, 2013). Bond instruments are traded on the Nigerian capital market with a dedicated section called bond market. The bond market also has two sub-sections which are primary bond market and secondary bond market. While the primary market deals with new bond issues, the secondary market deals with existing bonds which, holders could not hold till maturity, hence traded.

Since capital market has different sections for different securities, the performance of the capital market depends on the performance of each sub-section of the market. The Nigerian capital market comprise stock market - primary and secondary markets, first-tier and second-tier markets, bond or debt market - primary and secondary markets (Ofurum et al., 2019). The performance of the market in terms of market capitalization covers all the trading activities on the exchange market. It is believed that the development of the capital would guarantee long term finances such that financial crisis could be easily curbed (Mu et al., 2013). It is also believed that the development of fixed income security market will be enhanced, as international agencies have thrown their weighs behind the market.

The crux of this study is therefore, to examine the contribution of the fixed income security to the overall performance of Nigeria's capital market. In addition this paper investigates to what extent has the bond market contributed to capital market performance in Nigeria. The rest of the paper is divided into four sections which comprises of literature review, methods of analysis, discussion of findings and conclusion with recommendations.

REVIEW OF LITERATURE

Different studies (Atoyebi et al., 2013; Uwakaeme, 2015; Enoruwa et al., 2019; Ofurum et al., 2019) have shown that capital market is inevitable in economic growth and development through the mobilization of financial resources for deficit units in the economy. The Nigerian capital market started in 1960 as Lagos Stock exchange. It was later transformed into the Nigerian Stock Exchange in 1978. Just like other capital markets in West African nations, Nigeria's capital market comprises of different sections which include equity market- primary and secondary sub-sections; debt or bond market- primary and secondary as well as premium board and alternate security markets. Each of these sections cares for different securities and participants. The bond market sub unit of the Nigerian capital market is the crux of this study. Economies without efficient bond market are exposed to financial crises.

The activities of the bond market in Nigeria's capital market can be traced to pre-independence when the first bond was issued by the colonial government. Bond issues have been growing since inception, but became more pronounced in 2000 when the Debt Management Office (DMO) was established. As at 2000, government bond amounted to N432.7182 billion. In 2005, N671.0782 billion was issued while N3274.72 billion, N6359.629 were issued in 2010 and 2015 respectively. As at 2019, government bonds of all categories stood at N14529.39 billion (NSE, 2019).

Nigeria's Bond Market and its Instruments

The performance of Nigeria's bond market is adjudged to be underdeveloped in terms of trading when compared to other financial markets (Onaolapo & Adelaja, 2010). Nigeria's bond market is housed by the Nigerian Stock Exchange. Its operations have improved considerably over the years due to the introduction of different forms of debt securities, especially by the government. The issuers of bonds are government at different levels and corporate organizations. The regular issuance of bonds by government makes government to dominate the market. Government (Federal, State and Local) bonds accounted for higher percentage of 97.61% while corporate bond stood at 2.39% as at 2019 (NSE, 2019).

Debt instruments in the Nigerian bond market are Federal Government bonds which consist Federal Government Development stocks, Treasury bonds, Green bonds, Sukuk, Savings bonds, state and local government bonds as well as industrial loan stocks. The major participants in the market include Debt Management Office (DMO), Central Bank of Nigeria (CBN), Nigerian Stock Exchange (NSE), Securities and Exchange Commission (SEC) with other institutional investors and dealers.

Despite the attested growth of the bond market in Nigeria, there are still identified challenges facing the market. Among these are: illiquidity, budget delay, high cost of borrowing, bureaucracy of regulations, legal and regulatory framework, poor awareness and lack of transparency in the market (Ajayi, 2013; Malafia, 2014; Chidi-Okeke et al., 2020).

EMPIRICAL REVIEW

Most studies on capital markets concentrated on relationship between capital market and economic growth/development. The few that considered bond market focused on bond market and its contributions to economic growth. For instance, Chidi-Okeke et al. (2020) examined effect of bond market development on Nigeria's economic development using ARDL regression model to analyze 33-year sample period. The study found that bond market does not significantly contribute to Nigeria's economic development. Contrarily, Onaolapo and Oluwafemi (2010) studied the relationship between bond market and Nigeria economy and found that bond market in terms of size, liquidity significantly determined Nigeria's economic growth.

Nwiado and Deekor (2013) investigated the contributions of foreign participation in the domestic bond market to the development and growth of Nigeria's capital market. Auto Vector Regressive (AVR) model was adopted to determine the relationship among capital market size, foreign participation, domestic participation and market liquidity as variables. The results of their study were found to be controversial due to mix results. Pradhan et al. (2015) examined the long run relationship between bond market development and economic growth of G-20 countries between 1990 and 2011. Vector autoregressive (VAR) model was used to test causalities among the variables. The results of the study showed that there are both unidirectional and bidirectional

causality between the variables. There were mixed interrelationship between the debt market and economic growth of the countries investigated.

Ofurum et al. (2019) examined effect of capital market components on economic growth in Nigeria between 1981 and 2017. Secondary data were used and sourced from Central Bank of Nigeria Statistical Bulletin. The study made use of gross domestic product (GDP) as proxy for economic growth while government securities (GS), corporate bond/preference shares (CBPS), and equities (EQT) were proxies for capital market components. The analysis of the paper was carried out with a Co-integrating regression approach with other econometric tests. The findings validated the existence of a long-run relationship between GDP, GS and CBPS. Likewise, the direction of causal relation found no homogeneity among the variables. The paper concluded that GDP has a unilateral causal relationship with GS and EQT while CBPS and GDB have bilateral causal relationship. It was recommended that government should improve on the amount of securities they issue in the market in order to experience more growth in the economy.

Nkwede (2020) investigated the determinants of bond market development in Nigeria between 1980 and 2013. Ordinary least squares method of regression was adopted to analyze the secondary data collected from publications of Central Bank of Nigeria (CBN), Securities and Exchange Commission (SEC), IMF and Nigeria Bureau of Statistics. Variables of interest in the study include bond market capitalization, savings bank sector development, foreign direct investment, exchange rate, interest rate, inflation rate, gross domestic product, bond yields and fiscal balances. The results of the study showed that interest rate, exchange rate, banking sector development and inflation rate have significant influence on bond market development, while fiscal balance, bond yield and foreign direct investment were not significant in spurring bond market in Nigeria. It concluded that macroeconomic factors are agents of bond market development.

From the various studies reviewed above, it is evidence to the best knowledge of the researchers that no research work had been carried out on assessing the contribution of fixed income security market to the performance of capital market in Nigeria. Hence this study is inevitable to open research studies in this area.

METHODOLOGY

The study made use of Auto-regressive distributed lag (ARDL) model as the major econometric tool for determining the contribution of fixed income security market to the Nigerian capital market performance over a period of 30 years. The annual data series for the variables were collected from publications of Nigerian Stock Exchange and Central Bank of Nigeria (CBN) between 1990 and 2019. The variables are market capitalization, Government bonds, corporate bonds and interest rate. The dependent variable is the market capitalization of the Nigerian stock exchange market, while the independent variables for the study are Government bond, corporate bonds and interest rate.

The model used in this study was adopted from Enoruwa et al. (2019) with modification on the variables used. The model used to test the contribution of debt market section to the capital market performance is stated as follows:

$$MCAP = f(\text{GOVB}, \text{CORB}, \text{EQTY}, \text{INTR})$$

This could be stated mathematically as:

$$MCAP = \alpha_0 + \beta_1 \text{GOVB} + \beta_2 \text{CORB} + \beta_3 \text{EQTY} + \beta_4 \text{INTR} + \varepsilon$$

Where:

MCAP =	Market capitalization of Nigerian capital market
GOVB =	Government bonds (Federal and State)
CORB =	Corporate bonds
EQTY =	Equity
INTR =	Interest rate
α_0 =	Intercept
$\beta_1 - \beta_4$ =	Parameters of estimates
ε =	Disturbance term

On a priori ground,

$$\beta_1, \beta_2, \beta_3, \beta_4 > 0$$

RESULTS AND DISCUSSION

This section presents the data analyses and the results obtained. The section presents the descriptive statistics, unit root test, co-integration test and output of short-run results of (ARDL) model with discussions.

Table 1: Descriptive Statistics

	LNMCAP	LNCORB	LNEQTY	LNGOVB	INT
Mean	14.25975	9.778252	14.01842	13.61556	13.8
Median	14.72181	9.005303	14.60619	13.27411	13.5
Maximum	17.06938	14.15229	16.42628	16.49168	26
Minimum	9.69892	6.684612	9.400961	10.04184	6
Std. Dev.	2.377193	2.334809	2.243216	1.885244	3.925711
Skewness	-0.46147	0.659053	-0.61249	-0.25692	0.71124
Kurtosis	1.863798	2.006231	2.091889	2.178568	4.969118
Jarque-Bera	2.678452	3.406228	2.906523	1.173469	7.376094
Probability	0.262048	0.182116	0.233806	0.55614	0.025021
Observations	30	30	30	30	30

Source: Authors' compilation, 2022

Table 1 depicts the descriptive statistics for variables employed in the study. The results show that the mean for market capitalization (LNMCAP), corporate bond (LNCORB), equity (LNEQTY), government bond (LNGOVB) and interest rate (INTR) are 14.26, 9.78, 14.02, 13.62 and 13.8 respectively. The maximum values for market capitalization (LNMCAP), corporate bond (LNCORB), equity (LNEQTY) are 17.07, 14.15 and 16.43 while that of government bond (LNGOVB) and interest rate (INTR) are 16.49 and 26.0 respectively.

The results further reveal that Jarque-Bera statistics is significant for market capitalization, corporate bond and government bond while that of interest rate is not significant. This implies that market capitalization, corporate bond, equity and government bond are normally distributed at 5% level of significance. Considering the standard deviation of the variables, the data are considerably clustered around the mean which make them to be more reliable.

Table 2: Unit Root Tests

Variable	Level			First Difference		
	Constant	With constant & Trend	Without Constant & Trend	Constant	With constant & Trend	Without Constant & Trend
LNCAP	-2.217	-1.097	3.811	-4.094***	-4.523***	-2.935***
LNCORB	-1.065	-2.348	0.968	-4.985***	-4.887***	-4.869***
LNEQTY	-2.679*	-1.179	3.212	-4.370***	-5.079***	-3.352***
LNGOVB	-0.445	-4.144**	2.937	-5.012***	-5.251***	-1.429
INT	-3.054**	-3.375*	-0.419	-7.787***	-7.655***	-7.929**

Note: ***, ** and * indicate 1%, 5% and 10% respectively

Source: Authors' compilation, 2022

The results in Table 2 indicates that the variables for log of market capitalization, log of corporate bond and log of equity are non-stationary at level form which means that they are integrated at order 1, I(1). Whereas, log of government bond and interest rate exhibit stationarity at level form at 5% level of significance. Hence, log of market capitalization, log of corporate bond and log of equity were differenced. After the differencing, the variables are found to be stationary at first difference. The mixed stationarity properties of the variables implies the adoption of ARDL bound test approach to investigate co-integration appropriate as well as analyzing long and short run results.

Co-integration Test

The long-run relationship among the variables was tested using the Bound test approach to co-integration. The results are shown in table 3. The SIC was adopted to identify the optimal lag length of the ARDL model which is Lag 4.

Table 3: Bound Test for Co-integration

Test Statistics	Value	k
F-statistics	2.770785	4
Significance	I ₀ Bound	I ₁ Bound
5%	2.86	4.01

Source: Authors' compilation, 2022

As shown in Table 3, the computed F-statistics that the joint hypothesis of the lagged level variables of the coefficient is zero equals 2.770785. This value is less than the upper bound critical value at 5% level of statistical significance (4.01). This implies that the null hypothesis is accepted at 5 per cent. It means there is no co-integration between the dependent variable and explanatory variables. Hence, only estimated short-run results should be reported.

Table 4: ARDL Short-Run Result

Dependent Variable: LNMCAP				
Selected Model: ARDL(4, 4, 4, 4)				
Sample: 1990-2019				
Included observations: 26				
Variable	Coefficient	Std. Error	t-Statistics	Prob
D(LNMCAP(-1))	-1.09601	1.01521	-1.07958	0.4756
D(LNMCAP(-2))	-0.59849	1.25301	-0.47764	0.7163
D(LNMCAP(-3))	-1.05399	0.95148	-1.10773	0.4675
D(LNCORB)	0.01835	0.09320	0.19686	0.8763
D(LNCORB(-1))	0.03071	0.02950	1.04119	0.4872
D(LNCORB(-2))	-0.01705	0.05634	-0.30267	0.8129
D(LNCORB(-3))	0.04490	0.04950	0.90714	0.5310
D(LNEQTY)	1.08423	0.11763	9.21767	0.0688
D(LNEQTY(-1))	0.07298	0.33650	0.21687	0.8640
D(LNEQTY(-2))	-0.39100	0.67467	-0.57954	0.6656
D(LNEQTY(-3))	1.35583	0.73784	1.83757	0.3173
D(LNGOVB)	0.33931	0.20147	1.68422	0.3411
D(LNGOVB(-1))	-0.01594	0.08172	-0.19507	0.8774
D(LNGOVB(-2))	0.28234	0.26145	1.07991	0.4756
D(LNGOVB(-3))	-0.13252	0.05940	-2.23075	0.2683
D(INT)	0.03271	0.03408	0.95982	0.5131
D(INT(-1))	0.02494	0.02332	1.06944	0.4786
D(INT(-2))	0.01441	0.02364	-0.60935	0.6516
D(INT(-3))	0.00817	0.01674	-0.48791	0.7110
CointEq(-1)	-1.37166	1.48002	-0.92679	0.5242
R-squared	0.9992	Adjusted R-squared	0.9791	
Cointeq = LNMCAP - (-0.0050*LNCORB + 1.0021*LNEQTY + 0.2416 *LNGOVB + 0.0207*INT -3.5661				

Source: Authors compilation, 2022

The results in Table 4 indicate that all the explanatory variables- corporate bonds, equity, government bond and interest rate are positively related to market capitalization though not statistically significant at all level of significance. Only equity was found to statistically significant at ten percent level of significance with t-statistic value of 9.21767 and probability of 0.069. However, the results show that the model is fit with 97.9% of adjusted R-square.

A positive relationship exhibited by the explanatory variables with the dependent variable depicts that a change in any of the variables will result to increase in the value of market capitalization of the Nigerian capital market. Here a percentage in corporate bond, equity, government bond and interest rate will cause market capitalization to change by 0.02 percent, 1.08 percent, 0.34 percent and 0.33 percent respectively.

CONCLUSION

The study investigated the impact of fixed income securities on performance of Nigeria's capital market for the period of 1990-2019. It adopted ARDL model to examine how fixed income security market contributes to the performance of Nigerian capital market over the period. The topic is imperative due the increase in government borrowing and the desire of corporate organizations for more long-term capital as well as yearning for improved performance of capital market. The results of the study showed that a positive impact of bonds on performance of

Nigeria's capital market, though the impact is statistically insignificant. The results further indicate that there is no long-run impact of fixed income security on performance of Nigeria's capital market.

Since there is positive impact of corporate bonds and government bonds on one hand, and capital market performance on the other hand, the study recommends that fixed security market should be reinvigorated in terms of issues and admission of more corporate organizations that are in need of long-term capital to finance their operation into the market. Further studies are also suggested for this subject matter.

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