Article

The Innovation of Government Bonds in the Growth of an Emergent Capital Market

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Abstract: The growth of an emerging capital market is necessary and requires all available resources and inputs from various sources to realize this objective. Several debates on government bonds' contribution to Nigeria's capital market developmental growth have ensued but have not triggered comprehensive studies in this area. The present research work seeks to close the breach by probing the impact of government bonds on developing the capital market in Nigeria from 2003–2019. We employ total market capitalization as the response variable to proxy the capital market, while various government bonds serve as the independent variables. The inflation rate moderates the predictor components. The research uses multiple regression technique to assess the explanatory variables' impact on the total market capitalization. At the same time, diagnostic tests help guarantee the normality of the regression model's data distribution and appropriateness. The findings reveal that the Federal Government of Nigeria's (FGN) bond is statistically significant and positive in influencing Nigeria's capital market growth. The other predictor variables are not found significant in this study. The study suggests that the Government should improve on the government bonds' coupon, while still upholding the none default norm in paying interest and refunding principal to investors when due.

Keywords: capital market; government bonds; total market capitalization; FGN bonds

JEL Classification: E44; G1; G11; G12; G14

1. Introduction

Capital markets are marketplaces for interchanging of long-term financial securities. These securities include ordinary stocks, long term debt securities, such as debentures, loose debt stock, and translatable bonds. Capital market is where investors and potential investors have the opportunity to find viable securities that meet their investment needs. That is, buyers and sellers of securities meet at the capital market for exchange. According to Reference [1], capital market in Nigeria affords a podium that helps to market administration stocks and other securities, such as commitment instrument or bonds, equities, and exchange trust fund. Government bonds and other public sector financial instruments in Nigeria marketed in the capital market include sovereign bond, municipal bond, corporate bonds, and government agency bonds [2]. Issuance of government bonds is a borrowing technique the Government employs to fund developmental projects that stimulate economic expansion [3]. Thus, the capital market is the only place the Government can access the lenders who are willing to lend to the Government by exchanging their money with government bonds and securities. However, certain macroeconomic factors, such as the GDP, inflation, interest rate, and exchange rate, determine a capital market progression [1] to a considerable degree. However, an innovative role of a regime bonds in capital market growth is yet to receive sufficient empirical assessment.

A bond is a type of debt instrument that affords the debtor the opportunity of acquiring external resources to fund longstanding projects [4]. Debt Management Office (DMO) Nigeria [2] defines bond as a contract of debt whereby investors loan money to a borrower, typically the Government or corporate firms. The financier or holder of the bond is the moneylender. When an individual acquires a bond, the person lends money to the issuer, a Government, and, otherwise, a Company. The Government includes the Federal and State Governments, Local Government Council, and Government Agencies. The Government applies the funds emanating from the bond issuance to correct budget shortfalls or finance capital projects to improve the economy and its technology. On the other hand, the company also uses the bond proceeds to expand their firm's business.

Chen and Mansa [5] postulate that government bonds are loan instruments supplied via a regime to provide backing for the administration expenditure plus commitments. Regime bonds are low-risk investments but debt-based. These types of debt security are associated with periodic payments of interests referred to as coupon payments [5]. The issuer pays the coupon (referred to as the specified rate of interest) and the principal at maturity [2]. The Government uses them to raise funds for infrastructural and technological provisions. The holders or investors receive common interests as their returns. The practical understanding of government bond is necessary. It follows that an investor has lent to the Government as soon as he purchases government bond. That means the Government has borrowed, from the lender, an agreed amount of money for an agreed period [6]. As a fixed-income asset, the Government reciprocates by regularly paying a definite periodic amount of interest known as the coupon [6]. The maturity date is the day the bond expires, and the bondholder gets back the original investment from the Government. The maturity date of bonds varies, sometimes one year, six months, and even as long as ten years or more.

Bond is significantly different from stocks. The critical dissimilarity between stocks and bonds is that shares symbolize interest right in the allotting entity. In contrast, bonds are a kind of obligation in which the issuer undertakes to reimburse the principal sum at a particular date [2]. One more significant distinction is that dividends are usually paid to shareholders when the issuer announces earnings. As for bonds investment, the bondholders are entitled to periodic interest payment by the issuers and reimbursement of the principal at the maturity date [2]. The FGN bond operations are synchronized by the DMO, Central Bank of Nigeria (CBN), The Nigerian Stock Exchange (NSE), Financial Market Dealers Quotation (FMDQ) OTC PLC, Central Securities Clearing Systems Ltd. (CSCS), and Securities and Exchange Commission (SEC) [2].

The role of government bonds in promoting the capital market in Nigeria cannot be underestimated. It is a topical issue that has ignited so much debate among economists, finance analysts, researchers and development specialists. Notwithstanding the sensitivity of this subject matter, there is still a scarcity of empirical works corroborating government bonds' efficacy in expanding the capital market in Nigeria. This study helps to bridge the gap by providing empirical evidence on government bonds' impact on capital market development in Nigeria. The present study is invariably assessing the four major components of government bonds in Nigeria and the level of innovation they have caused in the capital market evolution. The previous studies reviewed in this work failed to capture this specific area. Apart from Reference [7], local empirical studies are absolutely paucity in this research region. However, future researchers will find this present study useful and sufficient for a more enriched literature review.

The structure of this paper includes five sections. The first section is the introduction, which takes care of the study background, problems, and motivation for the study. The next section provides comprehensive literature review which comprises the theories underpinning this study and the related empirical works. We have the research approach, design, and data collection technique under Section 3. In Section 4, the study provides a detailed analysis of the data captured for this study, while the Section 5 gives the summary, suggestions, and concluding statements based on the findings of this study.

2. Literature Review

2.1. Notional Review

2.1.1. Proficient Market Supposition

Resourceful Market Proposition is one of the theories sustaining this study. Based on Reilly and Brown's [8] postulation, an effectual investment marketplace is one in which security values modify swiftly as soon as new information emerges. Thus, securities current prices reflect all information concerning them. In government bonds, their prices depend on the news about them to avoid overpricing or undervaluation. An efficient market hypothesis has three types: the frail, semi-strong, and the robust forms [9]. The weak-form idea emphasizes that stock values at present replicate all information obtainable by scrutinizing market exchange records, such as historical values, transaction capacity, or little interest. The semi-strong form hypothesis stresses that stock prices must reveal entirely visibly accessible facts concerning a firm's forecasts. The strong-form type of the efficient market hypothesis accentuates that stock costs must reveal all information pertinent to the company, including the information accessible by the firm's insiders alone. These conditions are the same in the marketability of government bonds in the capital market. The three forms of Efficient Market Hypothesis apply to all securities, including government bonds traded in the capital market. All necessary information required to fix the government bonds' prices is made available to ensure investors are not misled. The proper values are placed on all government bonds traded in the capital market, which is harmonious with the Proficient Market Postulation.

2.1.2. Markowitz Modern Portfolio Theory

Markowitz [10,11] Modern Portfolio Theory emphasizes investors' need to create a portfolio of investments that gives them an optimum equilibrium between return and investment risk. An investor can decrease the investment catastrophe by varying his/her investments and holding a portfolio of diverse assets. Therefore, having a portfolio of various investments can reduce investment perils because some investments can produce lower returns than estimated. In comparison, others can make higher returns than anticipated. Thus, an investor who mixes his/her investments with corporate stock, bonds and government securities is considered a wise pool or risk-taker. Portfolio theory upholds the smart saying that 'one should not pack his eggs in one basket'. That is, when someone invests in companies' stocks, he/she is better by investing also in government bonds. The mix technology in investment generates better returns in the long run. In other words, portfolios are useful for an optimal combination of risk and returns [10]. By implication, the return anticipated by an investor is not a function of the risk of a particular stock since it is possible to spread an aspect of that risk [12]. The modern portfolio theory is appropriate with this study. The capital market hosts investors who are both pool takers and risk-averse. The pool takers combine their investment for both government bonds, securities and firms' stocks. When investment mishap occurs, they will still have certain assets to fall back on their portfolio returns. A risk-averse investor may not have alternative investments to recover capital market investment shocks if there is a collapse in the trusted assets.

2.2. Empirical Review

Ndinda [13] investigated the correlation between the issuance of treasury/régime bonds and Kenya's economic growth from 2003–2011 with regression scrutiny. The study found that government bonds had a direct positive effect on Kenya's economic expansion. Yibin, Phelps, and Stotsky [14] analyzed African bond markets' growth using an econometric model. The study focused on critical causes of African government securities market and corporate bond market capitalization. The study found that government bonds had a direct relationship with interest rate fluctuations and the economy's size.

Kibert [15] extended the study in Kenya by assessing the impact of government bonds on Kenya's assets market growth from 2004–2014 using regression analysis. The study results showed that government bond had a significant favorable influence on Kenya's

capital market growth. Coskun, Seven, Ertugrul, and Ulussever [16] explored the nexus between Turkey's capital market and economic progress from 2006–2016. The study employed capital market sub-components, including mutual/pension funds, corporate bond, and stock and government bonds. By applying ARDL, Markov Switching Regression, and Kalman Filter models, the study established a long-run co-integrating relationship between the capital market development and economic growth. The study also found that the government bond negatively influenced growth, while the other sub-components were positively affecting economic growth.

Muharam, Ghozali, and Arfinto [17] examined the connection between bond market enlargement, fiscal progression and overseas asset in a number of nations. The central focus of the research was the sovereign bond. The study took samples from some developing countries in Asia, America, Europe, and Africa from 2004–2015. The econometric tools applied were vector autoregressive, vector error correction model and Granger causality. The outcome revealed that there were short-run and long-run co-integration in each sample. The study also found no basis in all countries sampled. In addition, a univariate correlation was found in Indonesia, Thailand, and Mexico. Olaniyan and Ekundayo [7] surveyed the end product of administration bonds on Nigeria's wealth market from 2010–2017. The study used the Generalized Method of Moments regression technique and discovered that government bonds had a significant and positive effect on Nigeria's capital market growth. The findings also revealed that when government bonds reduced, the capital market's resultant impact was negative.

Hoque, Rakhi, Hassan, and Le [18] used capital asset pricing model and non-parametric stochastic dominance approach to assess the performances of Islamic and Conventional Stock Portfolios for five industrial sectors and the market in Malaysia. The study found that both portfolios had equal productivity in the market. However, the study further disclosed that Islamic Stock Portfolio had a higher return with a lower systematic risk. The study confirmed Markowitz Modern Portfolio Theory, which advocated that portfolio mix strategy helps an investor to easily absorb investment risk shocks, due to the varying return outcomes within the portfolio.

3. Approach

3.1. Investigation Strategy and Springs of Facts Gathering

This research applies a causal research design to realize the aim of the study. Agreeing with Kothari [19], causal analysis is employed to assess one variable's influence on another. Therefore, the causal research design is adjudged suitable for this research which strives for establishment of government bonds' influence on an emerging funds market. Here, the research adopts the relevant econometric tools and multiple regression analysis techniques to examine the impact of governments bonds identified in this work on the total market capitalization. The scope of this study spans from 2003 to 2019. The Total Market Capitalization is the dependent variable and data are gathered from the Central Bank of Nigeria Statistical Bulletin, 2019 edition. The data on the explanatory variables, including FGN Bonds, Treasury Bonds, and Bonds/Debt are collected from Debt Management Office (DMO) Nigeria and Central Bank of Nigeria Statistical Bulletin, 2019 edition. The data on Inflation Rate is sourced from The World Bank Economic Indicators. The inflation data are collected in percentage, while the information on total market capitalization, FGN bonds, treasury bonds, and bonds/debt is obtained in their local currency. The real data in this study are conveyed in their logarithm method due to their differences in value. The choice of these variables is based on the specific objective of this study, which seeks to assess the influence of individual bond the government issues from time to time, and how they collectively and singularly cause the growth of the capital market in Nigeria.

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3.2. Model Specification

The functional and econometric relationship between the response variable and the predictor variables are shown in the following equations:

$$\text{TMC} = f\,(\text{FGB, TRB, BND, INF}), \tag{1}$$

where:

TMC = Total Market Capitalization;
FGB = FGN Bonds;
TRB = Treasury Bonds;
BND = Bonds/Debts; and
INF = Inflation Rate.

Thus, Equation (1) is the functional relationship between the dependent and the independent variables. The equation expresses that FGN Bonds, Treasury Bonds, Bonds/Debt, and inflations rate are a function (f) of total market capitalization. That is, Equation (1) states the extent to which capital market growth depends on government issuance of bonds to investors.

$$\text{LogTMC} = \beta_0 + \beta_1\text{LogFGB} + \beta_2\text{LogTRB} + \beta_3\text{LogBND}\ \beta_3\text{LogINF} + \mu. \tag{2}$$

The econometric relationship between the response and explanatory variables used in this study are shown in their logarithm format in Equation (2), where:

LogTMC = Total Market Capitalization communicated in log form;
LogFGB = FGN Bonds conveyed in its logarithm type;
LogTRB = Treasury Bonds shown as a log;
LogBND = Bonds/Debts provided in a log format;
LogINF = Inflation Rate express in a log form;
β_0 = Constant;
β_1–β_4 = Regression coefficients; and
μ = Error term.

On the a priori, we expect: $\beta_1 > 0$, $\beta_2 > 0$, $\beta_3 > 0$, $\beta_4 > 0$.

4. Data Breakdown and Explanation of Findings

Symptomatic Examinations

The occurrence of serial correlation is confirmed using the Breusch-Godfrey Serial Correlation Lagrange Multiplier Test. The null hypothesis assumes nonexistence or sequential relationship. The decision rule is to decline the null hypothesis if the p-value is less than 0.05 level of significance. From the result in Table 1, the model's p-value is 0.24 > 0.05, which indicates that the model is free from serial correlation. Thus, the null hypothesis is established.

Table 1. Breusch-Godfrey Serial Correlation Lagrange Multiplier Test.

F-statistic	1.651959	Prob. F (2,10)	0.2399
Observed R-squared	4.221809	Prob. Chi-Square (2)	0.1211

Source: Authors' Computation, 2020. Output from E-views version, 9.

The study uses Ramsey Reset test to prove the data set's stability and determine the incidence of any significant nonlinear connections in the developed linear regression model. The null hypothesis is that there is a linear correlation in the regression model. The decision rule rejects the null hypothesis if the p-value is less than the 0.05 level of significance. From the result in Table 2, the p-value of the model of 0.6 115 > 0.05 specifies that the model has linear relationships at a 5% level of significance and that the data set used in the study is stable. We, therefore, accept the null hypothesis that there is a linear relationship in the regression model.

Table 2. Ramsey RESET Test. Specification: LOG_TMC LOG_FGB LOG_TRB LOG_BND LOG_INF C. Omitted Variables: Squares of fitted values.

	Value	Df	Probability
t-statistic	0.522774	11	0.6115
F-statistic	0.273293	(1, 11)	0.6115
Likelihood ratio	0.417201	1	0.5183

Source: Authors' Computation, 2020. Output from E-views version, 9.

The presence of heteroskedasticity in a linear regression model submits that the model coefficients appraised using ordinary least squares (OLS) are not free from bias. The situation is noticed when the variance of errors or the model is heterogeneous for all observations. The null hypothesis is that the residuals are homoscedastic. Thus, the alternate view is that the residuals are heteroscedastic. The decision rule is to discard the null hypothesis if the *p*-value is smaller than 0.05 level of significance. Thus, the result in Table 3 indicates that *p*-value of the model is 0.7696 > 0.05, which shows that the model is homoscedastic at 5% level of importance.

Table 3. Heteroskedasticity Test: Breusch-Pagan-Godfrey.

F-statistic	0.451586	Prob. F (4,12)	0.7696
Observed R-squared	2.224184	Prob. Chi-Square (4)	0.6946
Scaled explained SS	1.826641	Prob. Chi-Square (4)	0.7676

Source: Authors' Computation, 2020. Output from E-views version, 9.

Normality Test

Histogram normality (Figure 1) provides the information that the data set used in this study are distributed adequately as confirmed by the *p*-value of Jarque-Bera, (15 > 0.05).
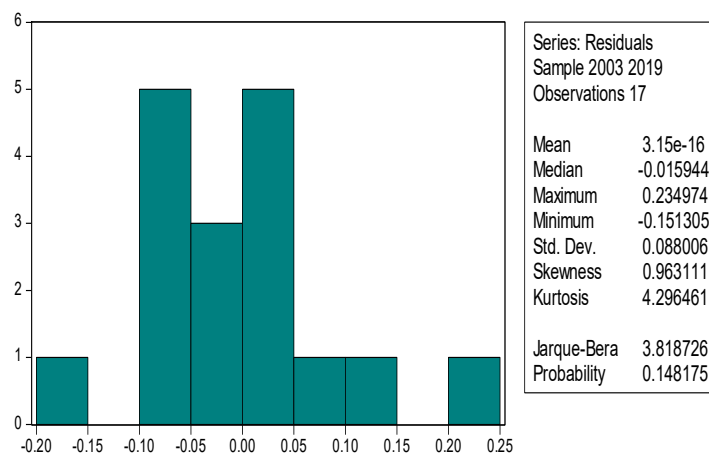

Figure 1. Histogram normality.

Multicollinearity test helps to detect (if any) the existence of interrelationship among the independent variables. The multiple regression model relies on the premise that all independent variables employed in a study do not interconnect [20] (Australian Property Institute, 2015). When the Variance Inflation Factor (VIF) is above the value of 10, multi-collinearity is said to be in existence [21] (Gujarati and Porter, 2009). When the VIF is less than 10, it depicts the absence of multicollinearity among the explanatory variables. Thus, the result in Table 4 reveals the lack of multicollinearity in this study. The VIFs of all the independent variables are less than the value of 10.

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Table 4. Multicollinearity test. Variance Inflation Factors (VIFs). Sample: 2003–2019. Included observations: 17.

	Coefficient	Uncentered	Centered
Variable	Variance	VIF	VIF
LOG_FGB	0.007099	131.8947	5.246480
LOG_TRB	0.050466	514.0092	2.256173
LOG_BND	0.001967	14.07088	2.380222
LOG_INF	1.365557	3430.235	2.160760
C	3.433287	5651.907	NA

Source: Authors' Computation, 2020. Output from E-views version, 9.

The regression result in Table 5 indicates that the capital market and government bonds have a robust correlation. The correlation (R) value is 97.2%, which is the square root of R-Squared. Thus, it is essential to note that government bonds are an essential chunk of the Nigerian capital market. The result in Table 5 also reveals that R-Squared is 94.5%, which is the coefficient of determination. This result implies that government bonds determine up to 94.5% of the fluctuations in Nigeria's capital market. The remaining 5.5% is caused by other factors we could not take cognizance of in this study. The Cumulative Sum Control Chart in Figure 2 helps to establish that the regression model is stable. This is shown by the appearance of the blue line between the two dotted red lines.

Table 5. Regression result. Method: Least Squares. Sample: 2003–2019. Included observations: 17.

Variable	Coefficient	Std. Error	t-Statistic	Prob.
LOG_FGB	0.438794	0.084256	5.207850	0.0002
LOG_TRB	−0.086892	0.224647	−0.386794	0.7057
LOG_BND	0.009896	0.044352	0.223132	0.8272
LOG_INF	−1.876833	1.168570	−1.606093	0.1342
C	5.057214	1.852913	2.729331	0.0183
R-squared	0.945276	Mean dependent var		3.987172
Adjusted R-squared	0.927034	S.D. dependent var		0.376203
S.E. of regression	0.101621	Akaike info criterion		−1.495211
Sum squared resid	0.123921	Schwarz criterion		−1.250148
Log-likelihood	17.70930	Hannan-Quinn criterion		−1.470852
F-statistic	51.82008	Durbin-Watson stat		2.178951
Prob(F-statistic)	0.000000			

Source: Authors' Calculation, 2020. Output from E-views version, 9.

The Standard Error of Regression is $0.1 < 1$, confirming the accuracy of the regression line forecast. The Durbin-Watson of 2 is an indication that there is no autocorrelation in this model. The F-Statistic value is 51.82 with a *p*-value of $0.00 < 0.05$. This result provides evidence that the model used in this study is suitable and has statistical significance. It also shows that the independent variables jointly have a favorable impact on the capital market.

The impact of each explanatory variable is tested with the t-statistic on Table 5. The FGB has a t-statistic of 5.208 and a *p*-value of 0.00, which is less than 0.05 level of significance. In this case, it is believed that FGB has a significant positive impact on the capital market. This result agrees with the findings of (Kibert, 2015; Olaniyan and Ekundayo, 2019). Table 5 also shows that TRB and INF have an insignificant negative impact on the capital market, while the BND is positively immaterial in affecting the capital market.

The result of Granger Causality test on Table 6 shows that FGB has causality effect on TMC, while TMC causes high rate of inflation at 5% level of significant. On the other hand, TRB has a causal influence on FGB. The implication is that, once the government issues FGB, it positively affects TMC growth and this development also causes inflation. The issuance of treasury bonds equally affects the FGB. This causality effect may be positive or negative. Risk-averse investors, will be interested in the bond with the higher returns, while the pool takers will prefer a combination of the two bonds in their investment portfolio.
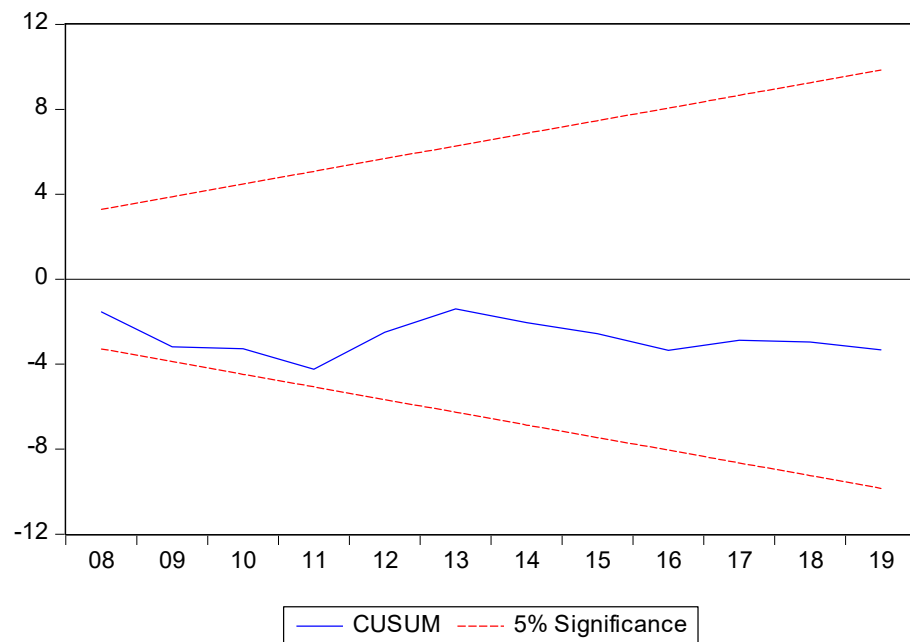
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Figure 2. Recursive estimates CUSUM test. CUSUM = Cumulative Sum Control Chart.

Table 6. Pairwise Granger Causality Tests. Sample: 2003–2019. Lags: 2.

Null Hypothesis:	Obs	F-Statistic	Prob.
LOG_FGB does not Granger Cause LOG_TMC	15	6.38041	0.0164
LOG_TMC does not Granger Cause LOG_FGB		1.94000	0.1941
LOG_TRB does not Granger Cause LOG_TMC	15	0.76864	0.4892
LOG_TMC does not Granger Cause LOG_TRB		2.07506	0.1763
LOG_BND does not Granger Cause LOG_TMC	15	0.59630	0.5693
LOG_TMC does not Granger Cause LOG_BND		0.41448	0.6715
LOG_INF does not Granger Cause LOG_TMC	15	0.05915	0.9429
LOG_TMC does not Granger Cause LOG_INF		7.20135	0.0116
LOG_TRB does not Granger Cause LOG_FGB	15	5.38046	0.0259
LOG_FGB does not Granger Cause LOG_TRB		0.56237	0.5869
LOG_BND does not Granger Cause LOG_FGB	15	0.86790	0.4492
LOG_FGB does not Granger Cause LOG_BND		1.89248	0.2009
LOG_INF does not Granger Cause LOG_FGB	15	2.61026	0.1224
LOG_FGB does not Granger Cause LOG_INF		2.33551	0.1471
LOG_BND does not Granger Cause LOG_TRB	15	1.20596	0.3395
LOG_TRB does not Granger Cause LOG_BND		0.21840	0.8075
LOG_INF does not Granger Cause LOG_TRB	15	0.42957	0.6622
LOG_TRB does not Granger Cause LOG_INF		1.42343	0.2858
LOG_INF does not Granger Cause LOG_BND	15	0.47644	0.6344
LOG_BND does not Granger Cause LOG_INF		0.69612	0.5211

Source: Authors' computation using E-views version, 9.

5. Summary and Suggestions Averse

The study examines the impact of management bonds on money market evolution in Nigeria from 2003–2019. The dependent variable we employ is the total market capitalization. In contrast, the independent variables are the government bonds: FGN bonds, treasury bonds, bonds/debts and inflation rate to moderate the variables. The findings show that FGN bonds are significant and favorable to the growth of the capital market in Nigeria. On the contrast, the other predictor variables are found insignificant in affecting the capital market growth. The policy implication is that government bonds are an integral part of the Nigerian capital market and is anticipated to affect change. They are also marketable and risk-free securities. The returns may not be very high, but there is no room

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for default as the interests are paid when due. This characteristic of the government bond is very paramount and will help to boost the growth of the capital market in the country.

Therefore, investors are encouraged to leverage the numerous benefits of government bonds. The study suggests that the capital market should provide the best platform to make government bonds more attractive to investors. Government bonds, included in an investor's investment portfolio, have been found the lowest in producing returns although stable. Based on this premise, this study further recommends that the Government improve the rate of returns on government bonds. The quality of returns should be made fascinating, while still upholding the 'no default ethics' in interest and principal reimbursement to investors at maturity.

This study suffers a dearth of empirical works of literature in this area of research. As a result, this study recommends that future researchers should conduct more local studies to assess government bonds' impact on the growth of the capital market in the emerging nations, including Nigeria. Further studies should also consider the effect of other financial instruments the Government uses to source for the capital market fund. There is a need to assess government bonds' contribution to the capital market at different times and intervals using various econometric tools to enable comparison of results.

References

1. Omodero, C.O. Capital market determinants and market capitalization in Nigeria. *Int. J. Financ. Res.* **2020**, *11*, 462–473. [CrossRef]
2. Debt Management Office (DMO) Nigeria. An introduction to FGN Bonds. 2020. Available online: https://www.dmo.gov.ng/fgn-bonds (accessed on 12 December 2020).
3. Omodero, C.O.; Adetula, D.T.; Adeyemo, K.; Owolabi, F. Domestic debt and economic. Growth sustainability. Assessment of the scenario in Nigeria. *Acad. Entrep. J.* **2020**, *26*, 1–11.
4. Investsmall. Types of Bonds in Nigeria. 2020. Available online: https://www.investsmall.co/types-of-bonds-in-nigeria/ (accessed on 2 April 2020).
5. Chen, J.; Mansa, J. What is a Government Bond? 2020. Available online: https://www.investopedia.com/terms/g/government-bond.asp (accessed on 22 January 2021).
6. IG International Ltd. How do Government Bonds Work? 2020. Available online: https://www.ig.com/en/bonds/what-are-government-bonds (accessed on 10 July 2020).
7. Olaniyan, T.O.; Ekundayo, S.O. Revisiting the growth effects of government bonds in the emerging capital market. *Corp. Gov. Organ. Behav. Rev.* **2019**, *3*, 32–38. [CrossRef]
8. Reilly, F.K.; Brown, K.C. *Investment Analysis and Portfolio Management*, 8th ed.; Thomson/South-Western: Mason, OH, USA, 2006.

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9.   Fama, E. Efficient capital markets: A review of theory and empirical work. *J. Financ.* **1970**, *25*, 383–417. [CrossRef]
10.   Markowitz, H. Portfolio selection. *J. Financ.* **1952**, *7*, 77–91.
11.   Markowitz, H. *Portfolio Selection*; Wiley: New York, NY, USA, 1959.
12.   Cueto, J.M.; Grane, A.; Cascos, I. Models for expected returns with statistical factors. *J. Risk Financ. Manag.* **2020**, *13*, 314. [CrossRef]
13.   Ndinda, K.D. *The Relationship between the Government Bond Issues and Economic Growth in Kenya*; MBA Research Project Submitted to School of Business, University of Nairobi: Nairobi, Kenya, 2012.
14.   Yibin, M.; Phelps, P.; Stotsky, J.G. Bond Markets in Africa. *Rev. Dev. Financ.* **2013**, *3*, 121–135. [CrossRef]
15.   Kibert, A. The Effect of Government Bonds on Capital Market Growth in Kenya. Master's Thesis, School of Business, University of Nairobi, Nairobi, Kenya, 2015.
16.   Coskun, Y.; Seven, U.; Ertugrul, H.M.; Ulussever, T. Capital Market and Economic Growth Nexus: Evidence from Turkey. *Cent. Bank Rev.* **2017**, *17*, 19–29. [CrossRef]
17.   Muharam, H.; Ghozali, I.; Arfinto, E.D. Bond Market Development, Economic Growth, and the Role of Foreign Investment. In Proceedings of the 2018 International Conference of Organizational Innovation, KnE Social Sciences, Fukuoka, Japan, 7–9 July 2018; pp. 811–819. [CrossRef]
18.   Hoque, A.; Rakhi, S.; Hassan, K.; Le, T. The performance of stock portfolios: Evidence from analyzing Malaysia case, and implication for open innovation. *J. Open Innov. Technol. Mark. Complex.* **2020**, *6*, 178. [CrossRef]
19.   Kothari, C. *Research Methodology: Methods & Techniques*, 2nd ed.; New International Publishers: New Delhi, India, 2004.
20.   Australian Property Institute. *The Valuation of Real Estate*, 2nd ed.; Appraisal Institute: Canberra, Australia, 2015.
21.   Gujarati, D.N.; Porter, D.C. *Basic Econometrics*, 5th ed.; McGraw-Hill Irwin: Boston, MA, USA, 2009; ISBN 978-0-07-337577-9.