

Fixed Income Securities and Capital Market Growth Performance in Nigeria

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ABSTRACT

In an analytical and empirical manner, this study investigated the performance of capital market growth in Nigeria in relation to fixed-income securities. The primary research objective was to assess the performance of Nigeria's capital market is influenced by fixed-income securities. The study also had specific objectives, which included examining the influence of government bonds, interest rates, and Treasury bills on market capitalization in Nigeria. Secondary data covering 18-year period (2004-2022) were collected from various sources. The research design employed was ex-post-facto, and multiple linear regression analysis was used to determine the statistical significance of the independent variables. The results of the study revealed that the coefficient of federal government bonds (FGbond) had a positive and statistically significant impact at both the 95% and 99% confidence levels. Specifically, a 1% increase in federal government bond holdings, with all other variables held constant, led to a significant 3.470% increase in stock market capitalization in Nigeria. Conversely, interest rates showed a negative but significant impact. A 1% increase in interest rates, with other variables held constant, resulted in a 15% decrease in stock market capitalization over the specified timeframe. Treasury bills (T-bill) had a positive but insignificant effect, with a 1% increase in T-bill holdings, keeping other variables constant, resulting in a 1.305% insignificant increase in stock market capitalization during the studied period. Based on these findings, the study recommends that monetary authorities should encourage greater investment in bond facilities by private individuals and corporate entities.

Keywords: Fixed Income Securities, Capital Market Growth, Performance, Interest Rate, Treasury bills, Share Price.

1. Introduction

The capital market is a complex financial ecosystem where long-term financial instruments are traded. It consists of two main segments: the primary market, where new securities are issued, and the secondary market, where existing securities are bought and sold. In a broader sense, the capital market facilitates the flow of funds between investors and issuers, enabling businesses and governments to raise capital for various purposes. It encompasses a range of financial instruments, including stocks, bonds, derivatives, and other securities. The efficiency and stability of a capital market are crucial for economic growth, as it provides a platform for capital allocation, risk management, and the determination of asset values. The role of the capital market in mobilizing and directing financial resources within an economy to various users of funds is of paramount importance. These activities facilitate the provision of long-term funds with diverse maturities to businesses operating across different sectors, consequently contributing to the overall economic growth of the nation (Mu et al., 2023). The capital market functions in two distinct forms: the primary

market, which handles the issuance of new financial instruments, and the secondary market, responsible for the transfer of ownership of existing financial instruments from one investor to another. The effectiveness of these markets, particularly the secondary market, plays a vital role in the efficient reallocation of funds from surplus to deficit units within the economy (Ojo, 2010).

Within the realm of capital markets, various financial instruments are traded. These include ordinary shares, commonly referred to as common stocks, preferred stocks, bonds, debentures, loan stocks, and mortgage bonds. Each of these instruments possesses unique characteristics and is issued by specific entities. For instance, quoted companies issue ordinary shares, and the shareholders hold ownership rights in these firms. In contrast, preferred stocks are also issued by quoted companies, but the holders assume a creditor role to the company. Bonds and debentures are typically issued by governments at various levels, with corporate bonds being termed debentures. Although they share many features, the key difference lies in the timing of their coupon payments (Pandey, 2016). The trading activity associated with each of these instruments significantly contributes to the overall performance of the capital market and aids in revenue generation, consequently influencing the overall economic growth of the nation.

Fixed-income securities, also known as fixed-income investments or fixed-interest securities, are financial instruments that regularly provide investors with fixed-interest or dividend payments. Various entities, including governments, corporations, and municipalities, issue these securities as a means of raising capital. They represent a form of investment where the issuer borrows funds from investors and commits to repaying the principal amount at a specified future date, along with periodic interest payments. Bonds, a type of long-term fixed-income security, ensure the annual, semi-annual, or quarterly receipt of interest and the repayment of the principal upon maturity. Bonds are a preferred source of finance for both governments and private companies to support long-term investments (Ajayi, 2013). The Nigerian capital market has a dedicated bond market section where bond instruments are traded, comprising both the primary and secondary bond markets. The primary bond market involves the issuance of new bonds, while the secondary bond market deals with the trading of existing bonds when holders choose not to hold them until maturity, resulting in trade.

Given the diversified nature of the capital market, its performance hinges on the effectiveness of each of its sub-sections. The Nigerian capital market encompasses the stock market, encompassing primary and secondary markets, as well as first-tier and second-tier markets, in addition to the bond or debt market, featuring both primary and secondary markets (Ofurum et al., 2019). The evaluation of market performance, including market capitalization, encompasses all trading activities on the exchange market. It is widely believed that the development of the capital market is vital in securing long-term financial stability and helping mitigate financial crises (Mu et al., 2013). Additionally, the growth of the fixed-income securities market is expected to be boosted, as international agencies have expressed their support for this market.

2. Literature Review

2.1 Understanding the Capital Market

The capital market is a marketplace where long-term financial securities are bought and sold. It made its debut in Nigeria on June 5, 1961, under the Lagos Stock Exchange Act of 1961, which later transformed into the Nigerian Stock Exchange in December 1977 as part of a broader review of the Nigerian financial system (CBN, 2022). In 1979, the Securities and Exchange Commission (SEC) was established through the SEC Act of 1979 to oversee the capital market, officially commencing operations in 1980. The SEC took over

regulatory responsibilities from the Capital Issues Commission, which was established in 1973. Since then, a diverse array of financial instruments has been issued in the capital market by both new and existing businesses to fund product development, new ventures, and general business expansion.

The capital market can be categorized into two main segments; *The Primary Market*, where new securities are introduced and sold, and the *Secondary Capital Market*, where existing securities are traded among individuals, organizations, corporations, and government entities. When the capital market first commenced trading in 1961, it featured 19 listed securities (CBN publication, 2022). Presently, it boasts 261 listed securities and 167 companies (in 2017 and 2018, respectively). These securities comprise 172 equities, 80 bonds, and 9 Exchange Traded Funds

(ETFs) (SEC, 2022). The activities within the Nigerian capital market have been evolving positively, reflecting its role in stimulating economic growth. The volume and value of securities traded between 2008 and 2011 witnessed a decline, mainly due to various macroeconomic factors and a decrease in foreign investment due to increased currency risk. Nonetheless, these developments illustrate investors' optimism regarding the Nigerian economy (CBN, 2023). In 2017, the majority of transactions were in equities, representing 99.9 percent of the turnover volume and 99.8 percent of the total value of traded securities (CBN, 2017). The financial services sector dominated the activities, with traded stocks totaling 66.2 billion shares (66.0%), valued at N488.7 billion (38.4%) in 508,042 deals (CBN, 2017). The Capital Market plays a crucial role in aggregating domestic and foreign savings and directing them toward investments that exceed individual savings capacities. This allows governments and entrepreneurs to engage in larger-scale investments that go beyond their available savings. The Capital Market acts as an intermediary in reconciling the conflicting interests of supply and demand, thus facilitating the effective functioning of the market.

Government Bonds: Bonds are a general term for tradable loan securities issued by either corporate entities or governments to raise capital (SEC, 2020; Oke, Dada, & Aremo, 2021). These interest-bearing securities guarantee their holders the repayment of capital at a future specified date and a fixed rate of interest. Government bonds are issued by federal, state, and local governments, while corporate bonds are issued by corporations (Enoruwa, Nwani & Ezuem, 2022). Government bonds are typically denominated in the country's own currency, while those issued in foreign currency are termed sovereign bonds. These domestic-currency debt securities are commonly used to support government spending and are backed by the full faith of the government (Eleje et al., 2022). Investing in government bonds entails evaluating various risks, including political risk, inflation risk, country risk, and interest rate risk. State and local government bonds, also known as municipal bonds, are issued to finance their capital expenditures. These bonds are exempt from federal, state, and local taxes and offer competitive interest rates, similar to corporate bonds. The federal government allows state governments to trade these bonds free of federal income tax on the interest paid. With inadequate bank financing, lower-tier governments turn to the bond market to supplement their internally generated revenues and Federation

Interest Rates: Interest rates represent the cost of borrowing, a percentage charged by lenders to borrowers on the principal amount loaned. Interest rates and monetary policy play a significant role in assessing the performance of the bond market. Monetary authorities, concerned with the structure and functioning of the bond market, use bonds to establish the yield curve and ensure the stability of short-term rates (Nkwede, Uguru, & Nkwegu, 2016).

Treasury Bills: The Central Bank of Nigeria introduced Federal Government Treasury Bonds in 1989, with the aim of reducing the debt service obligations of the Federal Government. These bonds evolved from the conversion of treasury certificates that had been

used to finance the Federal Government's deficits over the years. The instrument serves as a means to finance the government's fiscal deficits each year and is held exclusively by the Central Bank of Nigeria. Over time, the value of the bonds has grown in relation to other debt instruments. The management of the debt was initially handled by the CBN before the creation of the Debt Management Office (DMO) (CBN Publications, 2022).

2.2 Money Market Instruments

Commercial Paper: Commercial paper, as defined by Investopedia, is an unsecured, short-term debt instrument typically issued by corporations for purposes such as financing accounts payable, managing inventories, and meeting short-term financial obligations. Maturities for commercial paper seldom extend beyond 270 days (Investopedia, 2023).

Banker Acceptance: According to Wikipedia, a banker's acceptance is a financial instrument that represents a bank's promised future payment. This payment is accepted and guaranteed by the bank as a time draft to be drawn on a deposit. The draft specifies the amount of funds, the date of payment, and the entity to which the payment is owed (Eleje, Agha, & Oyavuru, 2020).

Certificate of Deposit: A certificate of deposit (CD) is a time deposit and a financial product typically offered by commercial banks, thrift institutions, and credit unions. Certificates of deposit are akin to savings accounts but offer higher returns compared to regular savings accounts (Enoruwa, Nwani & Ezuem, 2022)

Capital market growth performance: refers to the overall development, efficiency, and effectiveness of a capital market in facilitating the flow of funds and contributing to economic expansion. Factors influencing growth performance include market liquidity, transparency, regulatory frameworks, investor confidence, and the integration of technology. A well-performing capital market fosters economic growth by efficiently channeling savings into productive investments, enabling businesses to expand, and supporting innovation. It also plays a vital role in wealth creation and the development of a robust financial infrastructure within an economy.

Share price, also known as stock price: represents the market value of a single share of a company's stock. It is determined by the supply and demand dynamics in the stock market, reflecting investors' perceptions of a company's current and future performance. Share prices are influenced by various factors, including financial performance, industry trends, macroeconomic conditions, and market sentiment. Share prices serve as indicators of a company's valuation and are crucial for investors making decisions about buying, selling, or holding stocks. They are dynamic and subject to fluctuations based on market conditions and the company's fundamentals.

Government Bond: Government bonds are debt securities issued by a government to raise capital. Investors purchase these bonds, essentially lending money to the government. In return, the government pays periodic interest and returns the principal at maturity. Government bonds are considered low-risk investments, and their yields often serve as benchmarks for other interest rates in the economy. They are crucial instruments for governments to finance public projects, manage debt, and regulate the money supply.

Corporate Bond: Corporate bonds are debt securities issued by corporations to raise funds for various purposes, such as expansion, acquisitions, or debt refinancing. Investors who buy corporate bonds become creditors to the issuing company, receiving periodic interest payments and the return of principal at maturity. Corporate bonds carry varying levels of risk based on the issuing company's creditworthiness. They provide companies with an alternative to equity financing and investors with opportunities for fixed-income investments with potentially higher yields than government bonds.

Interest Rate: Interest rates represent the cost of borrowing or the return on investment and play a fundamental role in the functioning of financial markets and the broader economy

Role in Monetary Policy: Central banks use interest rates to implement monetary policy. Adjusting interest rates influences borrowing costs, spending, and inflation. Lower rates encourage borrowing and spending, stimulating economic activity, while higher rates can curb inflationary pressures.

Impact on Investment: Interest rates significantly affect investment decisions. Lower rates generally make borrowing cheaper, encouraging businesses to invest in capital projects. Conversely, higher rates may constrain investment as borrowing costs rise.

Influence on Bond Prices: Interest rates and bond prices have an inverse relationship. When interest rates rise, existing bond prices tend to fall, and vice versa. This is because newer bonds with higher yields become more attractive to investors.

Savings and Consumption: Interest rates influence consumer behavior. Higher rates incentivize saving, as individuals can earn more interest on their savings. Conversely, lower rates may encourage spending and discourage saving.

Global Capital Flows: Interest rates differentials between countries impact global capital flows. Investors seek higher returns, so variations in interest rates can lead to capital moving across borders in search of better opportunities.

2.3 Theoretical Review

2.3.1 Barro-Ricardian Equivalence Theory

The Barro-Ricardian Equivalence Theory, also known as the Ricardian Equivalence theorem, was formulated by Robert Barro in 1974. This theory postulates that government attempts to boost demand through debt-financed government spending have limited long-term effects due to the public's propensity to save in anticipation of future tax increases. The argument from the Ricardian school of thought is that, since the government would naturally raise taxes to repay its debt, the public's attitude toward taxes ultimately neutralizes the impact of government borrowing, resulting in an unchanged demand in the long run. The theory challenges the concept of project finance, which is at the core of contemporary debt financing. Project-driven financing entails calculated borrowing, ensuring that the returns or cash flow generated from a project are sufficient to repay the loan, including interest. This approach promotes production, spurs business activities, fosters competitiveness, and enhances overall economic efficiency. The stimulation of economic activities under this model is expected to boost demand. However, in developing nations where infrastructure is still underdeveloped, there is the potential for mismanagement of funds and incorrect allocation. This may lead to distortions in economic indicators and make it challenging to empirically establish whether government borrowing enhances demand. The interdependence between bond market capitalization growth and real output growth remains a complex issue worth investigating.

2.4 Empirical Review

Various empirical studies have explored the impact of fixed income securities on Nigeria's economic performance. For instance, Owoeye et al. (2023) investigated the influence of fixed-income securities on Nigeria's capital market performance from 1990 to 2019, employing the ARDL model. Their findings indicate a positive impact of bonds on capital market performance, although not statistically significant. Furthermore, the study suggests that fixed-income securities do not have a long-term effect on capital market performance. The authors recommend revitalizing the fixed security market by issuing more bonds and admitting additional corporate organizations seeking long-term capital to finance their operations in the market.

Enoruwa, et al. (2019) examined the relationship between long-term debt instruments in financial markets and economic growth in developing nations, focusing on Nigeria. The study assessed the impact of federal, state, and corporate bonds on economic growth from 2003 to 2020. Their empirical analysis, conducted using regression and

correlation analysis with SPSS, revealed that FGN bonds have a strong positive impact on Nigeria's economic growth. In contrast, there is a weak positive effect of state bonds on economic growth, suggesting that the expected growth from state bond financing has not been fully realized. Similarly, corporate bonds have a weak positive impact on economic growth, indicating that the anticipated economic growth from corporate bonds has not been adequately harnessed.

Oke et al. (2021) evaluated the influence of bond market development on the growth of the Nigerian economy from 1986 to 2018. Their analysis, using the co-integration bounds test approach, found an insignificant positive relationship with government bonds, while corporate bonds and the value of bonds traded exhibited a positive and statistically significant relationship. Bond yields, on the other hand, displayed a negative association with the growth of the Nigerian economy. Chidi-Okeke, et al. (2020) explored the impact of bond market development on economic development in Nigeria. They conducted a time series analysis spanning 33 years, utilizing data from the CBN statistical bulletin, Debt Management Office (DMO), and the World Bank's online economic development indicators. Their findings suggested that the bond market did not significantly contribute to economic development in Nigeria.

Olaniyan and Ekundayo (2019) explored the effects of government bonds on the growth of the Nigerian capital market. Their study utilized time-series data from the Nigeria Stock Exchange (NSE) annual reports spanning from 2010 to 2017. Employing the Generalized Method of Moments (GMM) regression estimator, they found that the value and the number of listed government bonds positively and significantly affected capital market growth in Nigeria. Low capitalization of government bonds, however, had a negative impact on market growth. The study concluded that government bonds had a positive and significant impact on the growth of the Nigerian capital market. Abdelmonem and Mohamed (2018) examined the joint impact of interest rates and Treasury bill rates on stock market returns on the Egyptian Stock Exchange. The study found a negative relationship between Treasury bill rates, interest rates, and Egyptian Stock Market returns. The econometric analysis revealed co-integration among these variables, indicating a long-term relationship. The study concluded that both interest rates and Treasury bill rates jointly impacted Egyptian stock market returns in the long run.

Chukwuemeka (2018) investigated the impact of the capital market on economic growth in Nigeria. The study utilized annual time series data obtained from the Central Bank of Nigeria Statistical Bulletin and the Securities and Exchange Commission for the period from 1981 to 2016. Unit root tests and co-integration tests showed that the variables in the model were stationary and had a long-run relationship. The short-run regression analysis revealed that market capitalization and the number of deals had a positive impact on economic growth in Nigeria, while total listed equity and the volume of transactions had a negative impact. In the long run, total listed equity had a positive and significant impact on economic growth, while the number of deals had a negative and non-significant impact. Yener, et al. (2017) used ARDL Markov Switching Regression and Kalman Filter models to explore the relationship between the development level of capital market sub-components, including mutual/pension funds, corporate bonds, stock, and government bond markets, and economic growth in Turkey from 2006 to 2016. The study found a long-term co-integrating relationship between capital market development and economic growth and a unidirectional causality running from capital market development to economic growth.

Muharam, et al. (2017) examined the connection between bond market enlargement, fiscal progression, and overseas assets in several countries, focusing on sovereign bonds. Their study sampled data from various developing countries in Asia, America, Europe, and Africa from 2004 to 2015. The results indicated short-run and long-run co-integration in

each sample, with no causality found in all countries except for univariate correlation in Indonesia, Thailand, and Mexico. Olaniyan and Ekundayo (2017) surveyed the impact of government bonds on Nigeria's capital market growth from 2010 to 2017. Their study used the Generalized Method of Moments regression technique and found that government bonds had a significant and positive effect on Nigeria's capital market growth. The findings also indicated that a reduction in government bonds had a negative impact on the capital market.

Mohammed (2016) tested the hypothesis that treasury bills crowd out private investment in obtaining credit from the Egyptian capital market. Their study used the co-integration and Error Correction Model (ECM) methodology to test this hypothesis in both the short and long run. The analysis revealed that treasury bills crowded out private investment in the short run but integrated with it in the long run. The study concluded with recommendations for appropriate policies to stimulate domestic savings, develop the treasury bills market, and address the issue of "lazy banking" in Egypt. Please note that due to differences in countries, methodologies, and economic problems, these studies may produce inconsistent results with each other.

From the above empirical reviews, it is deduced that inconsistency in the significance and nature of the impact of fixed income securities on economic variables and limited exploration of specific factors influencing the effectiveness of fixed income securities warranted this study on Fixed Income Securities and Capital Market Growth Performance in Nigeria from 2003-2021.

3. Methodology

This study employed an ex-post-facto research design due to the availability of research data in secondary form, and there was no attempt to control or manipulate relevant independent variables, the research data were sourced from publications of authoritative institutions, including the Nigerian exchange group (NX), the National Bureau of Statistics (NBS), the Securities and Exchange Commission (SEC), and the Central Bank of Nigeria (CBN) Statistical Bulletin. Specifically, data related to Federal Government Bonds, interest rates, and Treasury bills were retrieved from the CBN Statistical Bulletin for the year 2022.

3.1 Model Specification

In line with the approach of Eleje, et al. (2020), this study utilized a multivariate linear regression model. The research model is specified as follows:

$$STK\ MKT\ CAP = f(FGB, INTR, TB) \dots\dots\dots(1)$$

Mathematically, the model is expressed as:

$$STK\ MKT\ CAP = \beta_0 + \beta_1FG\ bonds + \beta_2INT\ RATE + \beta_3Treasury\ bill + ET\dots\dots(2)$$

The econometric form of the model is presented as:

$$SMC = \beta_0 + \beta_1(FG\ bond) + \beta_2(IntRate) + \beta_3(Tbill) + \mu t\dots\dots\dots(3)$$

Where:

SMC = Stock Market Capitalization

FG bond = Federal Government of Nigeria Bond over the study period

IntRate = Prevailing Interest Rate during the study period

Tbill = Treasury bills in Nigeria over the study period.

β_0 = Constant of the regression equation.

$\beta_1, \beta_2, \beta_3$ = Coefficients of the explanatory variables over time.

μt = Error term

3.2 Data Analysis Technique

The study applied multiple linear regression analysis to assess the statistical significance of the various independent variables (Federal Government bonds, interest rates, and Treasury bills) on capital market growth in Nigeria. The Ordinary Least Square (OLS) method was

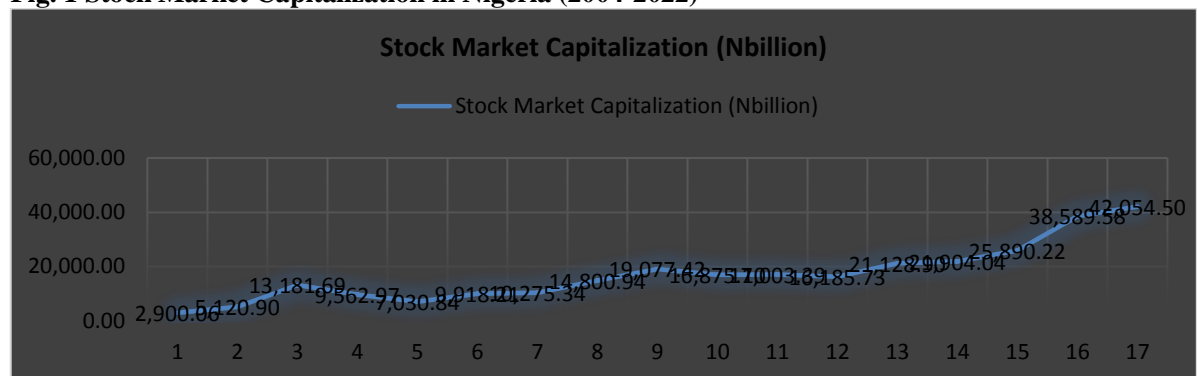
the chosen econometric technique, covering the time series from 2004 to 2022. Subsequently, multivariate inferential linear regression analysis was employed to determine the potential effect of the explanatory variables on the study's dependent variable. Reference was made to the works of Eleje et al. (2020) and Ubesie, Nwanekpe, & Ejilibe (2020), who also used Ordinary Least Square (OLS) as the analytical technique for their research to draw conclusions based on the stated hypotheses.

4. Data Analysis and Discussion of Finding

4.1 Descriptive Analysis

Figure 1 illustrates the stock market capitalization in Nigeria over the study period. The graph exhibits a moderate degree of consistency. Upon close examination, it becomes apparent that there was a gradual upward movement with occasional downward swings from the initial period in 2004 to the conclusion of the study in 2022. This trend suggests that the Nigerian stock market generally experienced growth over the course of this investigation.

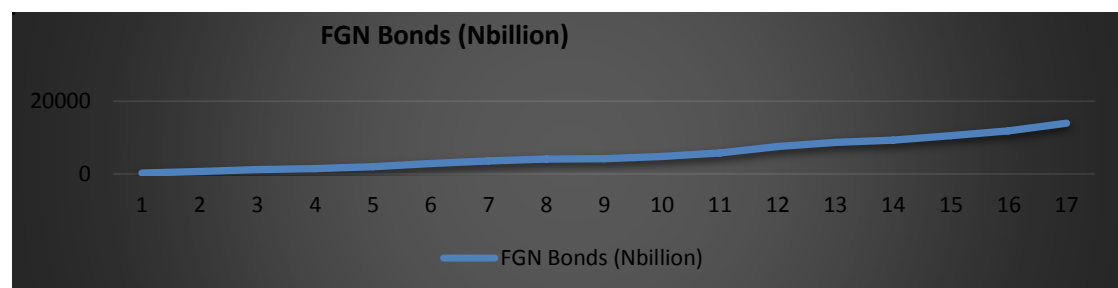
Fig. 1 Stock Market Capitalization in Nigeria (2004-2022)



Source: Authors' Computation (2023)

Clearly, the trajectory of Federal government bonds in Nigeria during the years 2004 to 2022 is depicted in Figure 2. The graph's pattern exhibited a higher level of consistency compared to market capitalization. It consistently showed a gradual upward trend from the outset to the conclusion of the period. This indicates a stable and continuous expansion of the bond market throughout the study period.

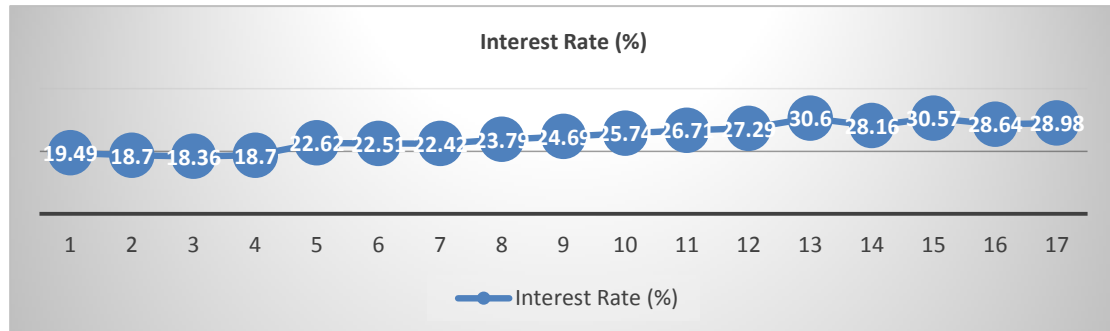
Fig. 2 Federal Government Bond in Nigeria (2004-2022)



Source: Authors' Computation (2023)

Figure 3 illustrates the trajectory of money market interest rates in Nigeria throughout the study period. Upon close examination of the graph, it reveals an initial gradual increase in the variable's movement, followed by a subsequent subtle ebb and flow.

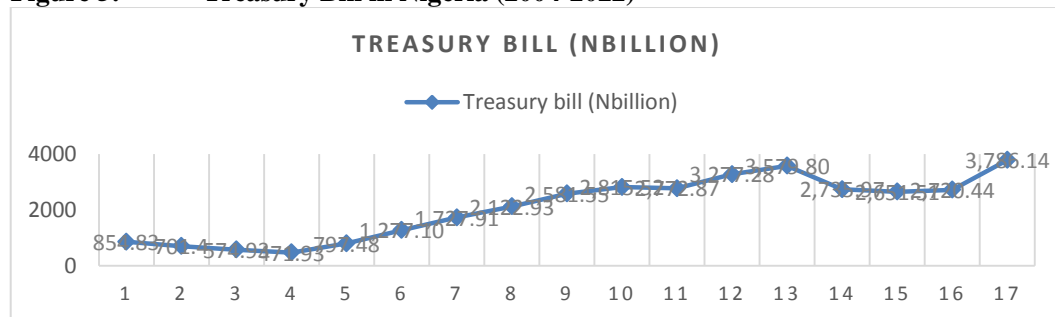
Fig. 4: Interest Rate in Nigeria (2004-2022)



Source: Authors' Computation (2023)

Figure 4 displayed below, depicts the trajectory of Treasury bills in Nigeria throughout the investigative period. An examination of the graph reveals an initial gradual decline, which then suddenly shifted and reversed into a subsequent gentle and consistent upward trend until the conclusion of the period. Toward the end, there was another period of fluctuation, with both downward and upward movements. This trend consequently highlights the unstable nature of Treasury bills in Nigeria.

Figure 5: Treasury Bill in Nigeria (2004-2022)



Source: Authors' Computation (2023)

4.2 Discussion of Findings

In determining the nature of the relationship between the variables, the Pearson correlation coefficient was applied. It revealed a strong positive correlation (93.6%) between SMC and FGbond, a strong positive association (76.9%) between SMC and IntRate, and a strong positive association (75.4%) between SMC and T-bill in Nigeria. The multiple correlation coefficient (R) describes the correlation between the predicted and observed values of the dependent variable. The values for R range from 0 to 1, with a larger value indicating a stronger relationship between the predicted and observed values of the dependent variable. From the model summary, the R-value is 0.959, signifying a strong, significant, and positive relationship between the predicted and observed values of the dependent variable. The R² statistics is 0.919, which means that 91.9% of the variations in the dependent variable can be explained by the independent variables in the regression model. The remaining 8.1% is attributed to other factors not accounted for in the model.

5. Conclusion and Recommendations

Given that federal government bonds had a positive and significant impact on stock market growth, it is advisable for the government to continue and possibly increase the issuance of bonds. This can provide a stable source of financing for various projects and positively contribute to the growth of the capital market. Monitoring and Management of Interest Rates: Since interest rates were found to have a negative impact on stock market growth, even though not statistically significant, policymakers should carefully monitor and manage interest rates. This may involve adopting measures that promote stability and predictability in interest rate movements to reduce uncertainty in the stock market. Further Investigation into Interest Rate Dynamics: While the study found a negative impact of interest rates on stock market growth, further research may be needed to delve deeper into the dynamics of this relationship; Understanding the nuances of how interest rates influence the stock market can inform more targeted policy interventions; Encourage Diversification: Investors and policymakers should consider the benefits of a diversified investment portfolio. While government bonds play a significant role, exploring diverse investment options can help mitigate risks associated with fluctuations in interest rates and other market variables.

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