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Impact of Capital Market Fundamentals on Industrial Sector Growth in Nigeria: 1986-2024

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ABSTRACT

This study examined the impact of capital market fundamentals on industrial sector growth in Nigeria, using the All-Share Index (ASI), Equities, and Corporate Bonds as key indicators. The study utilized secondary time series data covering the period from 1986 to 2024, sourced from the Central Bank of Nigeria (CBN), Securities and Exchange Commission (SEC), and World Development Indicators (WDI). An ex-post facto research design was adopted, and the data were analysed using unit root testing, Engle and Granger cointegration analysis, and the Dynamic Ordinary Least Squares (DOLS) technique. The result showed that the All-Share Index had a positive and statistically significant impact on industrial sector growth, suggesting that strong overall market performance contributed to increased investment in the industrial sector. In contrast, Equities had a negative but marginally significant impact, indicating structural inefficiencies in how equity capital was mobilized and allocated within the industrial sector. Corporate Bonds had a strong positive and significant effect, highlighting their growing importance as a stable, long-term financing source for capital-intensive industrial activities. Based on these findings, the study recommended that the Securities and Exchange Commission (SEC) and Nigerian Exchange Group (NGX) strengthen investor protection, enforce transparency, and promote broader industrial participation in the stock market to sustain ASI growth. The Nigerian Investment Promotion Commission (NIPC) and CBN were advised to develop sector-specific incentives and policies that attract equity investment into industrial enterprises. Furthermore, the Debt Management Office (DMO) and SEC were encouraged to streamline corporate bond issuance processes and support credit enhancements to attract more institutional investors. These recommendations aimed to ensure that each segment of the capital market contributes effectively to financing sustainable industrial development in Nigeria. The study concluded that optimizing capital market performance is essential for accelerating the growth of Nigeria's industrial sector.

Keywords: Capital Market, Industrial Sector Growth, All Share Index, Equities, Corporate Bonds

JEL Codes: G10, O14, E44, G23, L60

INTRODUCTION

Capital markets serve as crucial pillars of any modern economy, functioning as essential mechanisms for mobilizing and allocating financial resources efficiently across various sectors of the economy. World over, capital markets have evolved significantly over the past few decades, becoming increasingly integrated and sophisticated. The global capital market capitalization reached approximately \$125 trillion in 2023, representing nearly 140% of global GDP (World Federation of Exchanges [WFE], 2024). This remarkable growth has been driven by technological advancements, financial innovations, regulatory reforms, and increasing cross-border investment flows. Advanced economies like the United States, United Kingdom, Japan, and Germany have welldeveloped capital markets characterized by high liquidity, diversified financial instruments, robust regulatory frameworks, and sophisticated market infrastructure. These markets not only support domestic economic activities but also serve as important hubs for international capital flows (Yadav et al., 2024)

In contrast, capital markets in Sub-Saharan Africa (SSA) have historically lagged behind their global counterparts in terms of depth, breadth, and sophistication. Despite significant improvements in recent years,





most SSA capital markets remain relatively small, with limited liquidity and a narrow range of financial instruments. As of 2023, the total market capitalization of all stock exchanges in SSA was approximately \$1.2 trillion, representing just about 1% of global market capitalization (African Securities Exchanges Association [ASEA], 2024). South Africa dominates the region's capital market scope, with the Johannesburg Stock Exchange (JSE) accounting for over 60% of the region's total market capitalization. Other relatively developed markets in the region include those in Nigeria, Kenya, Egypt, and Morocco. The underdevelopment of capital markets in most SSA countries is attributed to various factors including weak institutional frameworks, limited

investor base, macroeconomic instability, and inadequate market infrastructure. (Obialor et al., 2022).

Nigeria, as one of Africa's largest economies, has one of the continent's more developed capital markets, though it still faces significant challenges. The Nigerian capital market is primarily anchored by the Nigerian Exchange Group (NGX), formerly known as the Nigerian Stock Exchange. The Nigerian capital market has experienced significant volatility over the years, influenced by various factors including oil price fluctuations, currency dynamics, regulatory changes, and broader macroeconomic conditions. Examining the provided data, we can observe significant growth and fluctuations in Nigeria's capital market indicators over time. The All-Share Index (ASI) has grown remarkably from 163.80 points in 1986 to 97,912.90 points in 2024, representing a compounded annual growth rate of approximately 17.5%. This growth, however, has not been linear, with notable periods of boom and bust. For instance, the ASI peaked at 57,990.20 in 2007 before crashing to 20,827.17 in 2009 following the global financial crisis. More recently, the ASI has shown strong recovery, growing from 26,874.62 in 2016 to 97,912.90 in 2024, indicating renewed investor confidence and market dynamism.

The Nigerian equities market has also demonstrated substantial growth over the decades, expanding from a mere ₹7.09 billion in 1986 to ₹54,684.90 billion in 2024. This exponential growth reflects increased market participation, improved regulatory frameworks, and growing investor confidence. Similarly, the corporate bond market has witnessed remarkable expansion, particularly in the last decade. From a negligible ₹0.40 billion in 1986, the corporate bond market grew to ₹2,756.30 billion in 2024. Notably, the most significant growth occurred between 2010 and 2024, with the market expanding from ₹56.37 billion to ₹2,756.30 billion. This surge in corporate bond issuance suggests increasing corporate appetite for debt financing and growing investor interest in fixed-income securities (CBN, 2023; SEC, 2025)

The industrial sector globally has historically been a major driver of economic development, technological advancement, and structural transformation. In developed economies, the industrial sector typically accounts for 20-30% of GDP, while in emerging and developing economies, this proportion can be significantly higher due to the ongoing process of industrialization. According to the World Bank (2023), the global industrial sector contributed approximately 25% to global GDP in 2022, employing about 23% of the global workforce. However, the structure and composition of the industrial sector vary widely across countries, reflecting differences in natural resource endowments, technological capabilities, policy frameworks, and stages of economic development.

In many developed economies, there has been a gradual shift from labor-intensive manufacturing to more technology-intensive and service-oriented industries, resulting in a relative decline in the manufacturing component of the industrial sector. Conversely, in many emerging and developing economies, manufacturing remains a crucial component of the industrial sector and an important engine of growth. Countries like China, South Korea, and Thailand have achieved impressive economic growth largely driven by the rapid expansion of their manufacturing sectors, supported by robust capital markets. For instance, China's industrial sector contributed about 37.8% to its GDP in 2022, while its capital market capitalization exceeded \$12 trillion, highlighting the potential synergy between capital market development and industrial growth (World Bank, 2023).

In Sub-Saharan Africa, the industrial sector's contribution to GDP varies significantly across countries but generally remains below the global average. According to the African Development Bank (2023), the industrial sector contributed approximately 23% to the region's GDP in 2022, with significant variations across countries. Countries with substantial natural resource endowments like Nigeria, Angola, and South Africa tend to have larger industrial sectors, primarily driven by extractive industries. However, manufacturing, which is often



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considered the core of industrialization, remains relatively underdeveloped in most SSA countries, accounting for only about 10% of GDP on average, compared to over 20% in East Asian economies (Obode, 2024).

In Nigeria, the industrial sector has historically been a significant component of the economy, though its relative importance has fluctuated over time. Based on the provided data, the industrial sector's contribution to Nigeria's GDP has experienced notable variations, ranging from a high of 38.08% in 1992 to a low of 18.37% in 2016. Analysing the trend reveals three distinct phases: a period of relatively high contribution (33–38%) from 1986 to 1996, followed by a general decline reaching its lowest point in 2016, and then a recovery phase from 2017 to 2024, with the contribution rising to 33.24% by 2024. The initial high contribution phase (1986–1996) coincided with various industrial development policies implemented during this period, including import substitution strategies and efforts to boost non-oil manufacturing. The subsequent decline phase (1997–2016) reflects various challenges faced by the industrial sector, including infrastructure deficiencies, policy inconsistencies, and increasing competition from cheaper imports following trade liberalization. The recovery phase (2017–2024) suggests a resurgence of industrial activities, possibly driven by government initiatives such as the Economic Recovery and Growth Plan (ERGP) and various sectoral policies aimed at boosting manufacturing and value addition (Obode, 2024).

However, Nigeria's industrial sector has not performed considerably well when compared with other African economies such as Ghana and South Africa. According to the World Development Indicators (World Bank, 2024), Ghana's industrial sector contributed approximately 39.5% to its GDP in 2023, reflecting a stable trend supported by investments in manufacturing and energy infrastructure. South Africa, with its more advanced industrial base, reported an industrial sector contribution of around 48.9% in 2023, supported by mining, automobile manufacturing, and heavy industries.

While Nigeria has recently shown signs of recovery, its industrial sector's performance still lacks the resilience and structural efficiency seen in neighbouring countries, suggesting that more holistic reforms are needed to sustain and deepen industrial growth. Therefore, it is in the interest of this study to conduct an analysis of how the components of the capital market, have impacted the industrial sector growth over the period 1986 to 2024.

The paper addressed the following questions:

- 1. To what extent does All-Share Index (ASI) impact on Industrial sector growth in Nigeria?
- 2. How does Equities influence Industrial sector growth in Nigeria?
- 3. What impact does Corporate Bonds have on Industrial sector growth in Nigeria?

Inline with the research questions, these hypotheses were raised:

 \mathbf{H}_{01} : The All-Share Index (ASI) has no significant impact on industrial sector growth in Nigeria.

 \mathbf{H}_{02} : Equities have no significant influence on industrial sector growth in Nigeria.

 H_{03} : Corporate Bonds have no significant impact on industrial sector growth in Nigeria.

LITERATURE REVIEW

Conceptual Review

Capital Market Indicators

Capital market fundamentals refer to the core indicators and mechanisms that reflect the performance, depth, and efficiency of a country's capital market. These fundamentals provide insights into the level of investor confidence, financial market development, and availability of long-term funding for economic sectors. Among the most widely used proxies for capital market fundamentals are the All-Share Index (ASI), Equities, and Corporate Bonds, each offering unique perspectives on the health and functionality of capital markets.





The All-Share Index (ASI) serves as a comprehensive indicator that tracks the overall performance of all listed stocks on a securities exchange. It represents the weighted average of share prices of all traded equities, adjusted for changes in market capitalization. According to Okonkwo and Adegbite (2023), the ASI is a crucial barometer for assessing investor sentiment and the general route of the stock market. It provides a snapshot of the market's performance over time and signals the attractiveness of the equity market to both domestic and foreign investors. A rising ASI is often interpreted as an indication of robust investor confidence and potentially increasing economic activity, while a declining ASI may suggest waning confidence or economic instability.

Equities, another key component of capital market fundamentals, represent ownership shares in publicly listed companies. They are essential instruments through which companies raise long-term capital to finance operations, expand production, or enter new markets. Equities are traded on stock exchanges and are influenced by a range of factors including corporate earnings, macroeconomic indicators, and market expectations. Nwosu and Ibhagui (2022) noted that equities form the backbone of capital markets, and their depth and liquidity are often used to evaluate the efficiency of financial intermediation in an economy. In economies with well-developed equity markets, firms have better access to long-term financing, which supports investment and industrial growth. The equity market also offers investors the opportunity to diversify portfolios and benefit from capital gains and dividends.

Corporate Bonds, on the other hand, are fixed-income securities issued by corporations to borrow money from investors for a defined period at a fixed interest rate. These instruments provide an alternative means of financing outside the banking system and are typically used to fund large capital-intensive projects. According to Chukwuma and Hassan (2024), corporate bonds play a vital role in promoting financial market stability by offering a less volatile investment option compared to equities. They also contribute to deepening capital markets by attracting risk-averse investors who prefer regular income streams and lower risk exposure. The presence of a vibrant corporate bond market indicates a diversified financial system capable of supporting various sectors, including manufacturing, infrastructure, and energy.

Industrial sector growth

Industrial sector growth refers to the expansion in output, productivity, and overall contribution of the industrial sector to a nation's gross domestic product (GDP). The industrial sector typically comprises manufacturing, mining and quarrying, construction, and utilities such as electricity and water supply. It is widely regarded as a critical driver of economic transformation, employment generation, and technological advancement. Various scholars have conceptualized industrial growth as not just a measure of increased production but as an indicator of structural change in an economy, whereby the share of industrial activities in national output expands relative to agriculture and services. According to Osei and Boateng (2023), industrial sector growth reflects the extent to which an economy moves up the value chain, producing higher-value-added goods and services.

Industrial sector growth is often quantified as the percentage contribution of the industrial sector to GDP. This measure helps to evaluate how pivotal the sector is to the overall economy and provides a benchmark for comparing performance over time and across countries. As noted by Kamau and Moyo (2022), a growing industrial sector is generally associated with increased capital formation, higher labour productivity, and improved trade balances due to greater export diversification. The authors further emphasize that a sustained rise in industrial GDP share typically signals industrial deepening, innovation, and enhanced domestic value addition, all of which are crucial for long-term economic resilience.

In Nigeria, the industrial sector has shown both resilience and vulnerability over the decades. As observed by Lawal and Yusuf (2023), the sector's fluctuating contribution to GDP, from highs in the early 1990s to significant lows in the mid-2010s, reflects the combined effects of inconsistent policy direction, economic shocks, and structural weaknesses. However, recent years have witnessed a modest revival, suggesting that targeted interventions such as the Economic Recovery and Growth Plan (ERGP), increased investment in local manufacturing, and infrastructure development may be yielding positive outcomes. This trend aligns with broader theories of industrialization which posit that proactive industrial policies and effective capital mobilization are prerequisites for sustained industrial sector growth.



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THEORETICAL REVIEW

The theoretical foundation for this study is the McKinnon-Shaw Financial Liberalization Theory, developed independently by Ronald McKinnon and Edward Shaw in 1973. This theory posits that financial repression, manifested through interest rate ceilings, high reserve requirements, and directed credit programs, hinders economic growth by distorting financial markets and reducing the efficiency of capital allocation. McKinnon and Shaw argued that removing these distortions through financial liberalization would lead to increased savings, more efficient investment, and ultimately, higher economic growth. Central to this theory is the belief that liberalized financial markets, characterized by market-determined interest rates, availability of bonds and reduced government intervention, enhance capital accumulation and foster productivity in sectors such as industry by providing better access to credit and investment capital.

The significance of this theory in the context of the present study lies in its relevance to capital market fundamentals, namely the All-Share Index, Equities, and Corporate Bonds, and their role in influencing industrial sector growth. According to the theory, liberalization facilitates the development of capital markets by attracting domestic and foreign investment, improving financial intermediation, and enabling more accurate pricing of financial assets. As capital markets deepen, they provide a broader range of financing instruments and more efficient mechanisms for mobilizing long-term capital. This financial expansion is particularly crucial for industrial development, which often requires substantial capital investment. In line with McKinnon-Shaw's propositions, the improved performance of Nigeria's capital market in recent years—including significant increases in equity capitalization and corporate bond issuance, can be interpreted as a positive outcome of financial sector reforms that align with liberalization principles.

Empirical Review

Understanding the dynamic relationship between capital market fundamentals and industrial sector growth has attracted scholarly interest across various economic contexts. Several empirical studies have been conducted to investigate this relationship, utilizing diverse methodological approaches, temporal scopes, and variables.

Ramirez and Oliveira (2024) assessed the role of financial market structures in influencing industrial development in Latin America, using data from Brazil, Argentina, and Colombia from 1990 to 2022. Using panel ARDL and causality tests, the study found that equity markets had a strong causative relationship with industrial GDP, particularly in Brazil, where the capital market is relatively mature. Corporate bonds also showed a significant effect but were more impactful in Argentina due to recent policy reforms encouraging private-sector bond issuance. The study offered a comprehensive regional analysis but did not include institutional quality variables that might moderate the effects of capital markets on industrial growth.

Adeoye and Salisu (2024) focused on Nigeria's post-COVID economic scope, analysing the responsiveness of the industrial sector to capital market fluctuations between 2010 and 2023. The researchers employed the Nonlinear Autoregressive Distributed Lag (NARDL) model to capture asymmetries in the relationship. Their findings showed that positive changes in equity market capitalization and corporate bonds led to substantial increases in industrial sector output, while negative shocks had disproportionately larger adverse effects. The All Share Index was found to influence industrial growth only during periods of overall economic stability. Although the study introduced methodological innovation through non-linear modeling, it narrowly defined industrial sector growth and omitted key moderating variables such as exchange rate movements and inflation volatility.

Bello and Ibrahim (2024) analyzed the relationship between capital market indicators and industrial growth in Nigeria post-2010, focusing particularly on the effects of corporate bond issuances and equity inflows. Using a structural vector autoregressive (SVAR) approach, the study found that corporate bonds began to exert a more pronounced influence on industrial sector growth after 2015, coinciding with policy reforms in the Nigerian capital market. The equity market also maintained a positive effect, while the ASI had a weaker and more volatile relationship with industrial performance. However, the study's limited time frame (2010–2022) may have restricted its ability to capture long-term structural shifts, and it lacked cross-sectoral industrial comparisons that could further enrich its analysis.

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utilities, and construction.

In a cross-country analysis, Patel and Singh (2024) investigated how capital market development influenced industrial growth in ten South and Southeast Asian countries over the period 2000 to 2023. The study used panel cointegration and fully modified ordinary least squares (FMOLS) techniques to analyze the long-run relationship between market capitalization, bond issuance, and ASI equivalents with industrial value added. Results indicated that all three capital market indicators had strong positive impacts on industrial output, particularly in economies with more stable institutional and macroeconomic frameworks. However, while the study provided robust long-run insights, it lacked sector-specific industrial data that could explain differential impacts across manufacturing,

Okeke and Nwachukwu (2023) explored the long-run and short-run dynamics between capital market indicators and industrial sector growth in Nigeria, covering the period from 1990 to 2022. Using the ARDL bounds testing approach, the study considered the All Share Index, equity market capitalization, and corporate bond issuance as explanatory variables. The findings demonstrated that while equity market capitalization and corporate bonds had a statistically significant positive effect on industrial GDP both in the short and long run, the All Share Index showed a positive but statistically insignificant effect. The study contributed to the literature by integrating short-and long-run perspectives but fell short by not accounting for external shocks such as global commodity price fluctuations, which could influence capital market behavior in Nigeria's oil-dependent economy.

Similarly, Afolabi and Osabohien (2023) examined the role of capital market performance in driving industrial growth in Nigeria, covering the years 1990 to 2021. Using the vector error correction model (VECM), the researchers investigated the effect of the All Share Index, equity market capitalization, and corporate bond issuance on industrial output. Their results indicated that the All Share Index and equity market capitalization had a significant long-run positive impact on industrial sector growth, while corporate bonds exhibited a weak and statistically insignificant influence. The study offered robust findings; however, it relied heavily on secondary data from limited institutional sources, which may have constrained the reliability of the bond market analysis due to data inconsistency and gaps in reporting standards.

Another contribution came from Zhang and Lee (2023), who investigated the impact of financial market performance on manufacturing sector growth in emerging Asian economies. The study covered the period from 2000 to 2022 and employed dynamic panel data analysis using the system GMM estimator. The findings showed that both equity market depth and bond market expansion significantly enhanced manufacturing output in countries like India and Vietnam. Notably, the All Share Index also exhibited a positive and statistically significant effect. Although the study was methodologically rigorous, it measured industrial growth solely through manufacturing output, which might not comprehensively represent the entire industrial sector, including construction and utilities.

Also in 2023, Ahmed and Bashir carried out a study focused on North African economies, specifically Egypt, Tunisia, and Morocco, to assess the role of capital market deepening in industrial transformation. Spanning the years 1995 to 2021, the study adopted the panel vector error correction model (VECM) to identify both short-and long-term effects. The findings suggested that corporate bond markets had a delayed but significant positive effect on industrial sector contribution to GDP, while equity markets had immediate but volatile impacts. Interestingly, the ASI equivalents were found to be responsive to short-term market trends but less predictive of long-term industrial output. One limitation of the study was its reliance on aggregate capital market indicators without accounting for capital market segmentation, which might have yielded deeper insights.

In a broader African context, Kamau and Otieno (2022) conducted a panel study across Kenya, South Africa, and Nigeria, examining the link between capital market indicators and industrial development over a 30-year period (1991–2020). Employing fixed-effects panel regression techniques, the study revealed that equity market development consistently promoted industrial GDP contributions across the three countries, whereas the role of corporate bonds was only significant in South Africa. The All Share Index had a positive association with industrial growth, but its effect varied by country. While the study offered comparative insights, it did not control for key macroeconomic variables such as exchange rate fluctuations and inflation, which could have potentially influenced the robustness of the results.

Mensah and Adusei (2022), the authors explored the influence of capital market development on industrial performance in Ghana over the period 1995 to 2020. Utilizing an autoregressive distributed lag (ARDL) model,



the study assessed the impact of market capitalization, stock market liquidity, and bond market activity on the industrial sector's output. The findings revealed that stock market capitalization had a statistically significant positive effect on industrial growth, while bond market activity did not show any significant relationship. The study provided valuable insights into how equities stimulate industrial development, but its exclusion of broader proxies such as the ASI limited the generalizability of its conclusions. Additionally, the study focused only on capital market aggregates without considering industrial sectoral disaggregation, which could have provided more detailed understanding of the relationship.

RESEARCH METHODOLOGY

This study adopted an ex-post facto research design, which is appropriate for examining relationships between variables based on already existing data. Given that the study explores the impact of capital market fundamentals, measured through All Share Index, Equities, and Corporate Bonds, on industrial sector growth in Nigeria over a historical period, the design allows for the analysis of trends and patterns without manipulating any variables. This design was suitable because it enabled the researcher to investigate cause-effect relationships retrospectively, providing empirical insights into how fluctuations in capital market indicators have influenced industrial output over time.

The nature of data used in this study is quantitative and secondary, covering time-series data from 1986 to 2024. The data focused on key capital market fundamentals, All Share Index, Equities, and Corporate Bonds, and industrial sector growth measured by its percentage contribution to Nigeria's GDP. Reliable sources were utilized, including the Central Bank of Nigeria (CBN, 2023), Securities and Exchange Commission Annual Reports (SEC, 2025), and the World Development Indicators (WDI, 2024).

In line with the focus of this research, the study drew from McKinnon-Shaw financial liberalization theory and refined the empirical model developed by Afolabi and Osabohien (2023), who investigated the influence of capital market dynamics on manufacturing sector performance in Nigeria. The mathematical representation of the model in this study, which captures the impact of All Share Index, Equities, and Corporate Bonds on industrial sector growth, is presented as follows:

$$IND_{t} = \pi_{0} + \pi_{1}ASI_{t} + \pi_{2}EQU_{t} + \pi_{3}CB_{t} + u_{t}$$
(1)

Where:

IND = Industrial sector growth

ASI = All share index

EQU= Equity

CB = Corporate bonds

 $\pi_0 = \text{Intercept}$

 $\pi_1 - \pi_3 =$ Coefficients of All share index, Equities and Corporate Bonds

 $u_t = \text{Residual}$

The estimation procedure in this study began with the application of unit root tests to assess the stationarity of the time series data. This preliminary diagnostic step, grounded in the Dickey and Fuller (1979), methodology, was crucial for determining whether the variables, namely All Share Index, Equities, Corporate Bonds, and industrial sector growth, contained unit roots. Identifying the order of integration helped to avoid the risk of spurious regression results, which often arise when non-stationary variables are used in estimation without appropriate adjustments.



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The mathematical specification for the ADF test is as follows:

$$\Delta y_t = \alpha + \beta t + \phi y_{t-1} + \sum_{i=1}^p \partial_i \Delta y_{t-i} + \varepsilon_t$$
 (2)

Where:

y, represents the variable being tested

 Δy_t is the first difference of the variable.

 α is a constant (drift term).

 βt represents the trend component.

 ϕy_{t-1} captures the lagged level of the variable, where the coefficient ϕ determines whether a unit root is present.

 $\partial_i \Delta y_{t-i}$ accounts for lagged differences to correct for serial correlation.

 ε_t is the error term.

Upon establishing the stationarity characteristics of the variables, the study proceeded to examine the existence of a long-run relationship between capital market fundamentals and industrial sector growth using the Engle and Granger (1987) cointegration technique. This method was well-suited for detecting long-term equilibrium relationships among variables that may not be stationary in levels but are jointly integrated. Unlike differencing methods that can strip the data of essential long-run information, cointegration analysis preserved meaningful economic relationships, allowing for a clearer interpretation of sustained interactions between the capital market and industrial growth.

$$\Delta \hat{\xi}_t = \rho \hat{\xi}_{t-1} + \sum_{i=1}^k \varphi_i \Delta \hat{\xi}_{t-i} + u_t \tag{3}$$

Where:

 $\hat{\xi}_i$ is the residual from the fitted model.

 $\Delta \hat{\xi}_i$ is the first difference of the residual

 ρ is the coefficient to be tested

k is the number of lagged differences included to correct for autocorrelation

 u_{i} is the error term

 $\hat{\xi}_{t-1}$ is the lagged residual.

 $\sum_{i=1}^{k} \varphi_i \Delta \hat{\xi}_{t-i}$ are the lagged differences of the residuals to account for higher-order correlation.

Following evidence of cointegration, the study employed the Dynamic Ordinary Least Squares (DOLS) estimation technique. This method was selected for its effectiveness in addressing issues of endogeneity and serial correlation, which are common in time series involving integrated variables. DOLS incorporates leads and lags of the explanatory variables, thereby improving the robustness and efficiency of the coefficient estimates.





Given that the variables in this study were integrated of order one or a combination of I(0) and I(1), DOLS provided a reliable framework for quantifying the long-run impact of capital market performance indicators on the growth route of Nigeria's industrial sector.

The basic mathematical formulation underlying the Stock and Watson (1993) Dynamic Ordinary Least Squares (DOLS) model is expressed as follows:

$$y_{t} = \eta + \Im x_{t} + \sum_{i=+p}^{p} \phi_{i} \Delta x_{t+i} + \sum_{i=-p}^{p} \phi_{i} \Delta x_{t-i} + u_{t}$$
(4)

Where:

 y_t is the dependent variable

 x_t is the independent variable

 x_{t+i} represents the leads of the first differences of the regressors.

 x_{t-i} represents the lags of the first differences of the regressors.

 η is the intercept.

9 is the coefficient vector.

p is the number of leads and lags included.

 u_t is the error term.

By integrating equation (1) within the Dynamic Ordinary Least Squares (DOLS) framework, the formulated expression of equation (3) as applied in this study is presented as:

$$IND_{t} = \pi_{0} + \pi_{1}ASI + \pi_{2}EQU + \pi_{3}CB + \sum_{i=1}^{a} \pi_{4}\Delta ASI_{t} + \sum_{i=1}^{b} \pi_{5}\Delta ASI_{t+i} + \sum_{i=1}^{c} \pi_{6}\Delta ASI_{t-i} + \sum_{i=1}^{d} \pi_{7}\Delta EQU_{t} + \sum_{i=1}^{e} \pi_{8}\Delta EQU_{t+i} + \sum_{i=1}^{f} \pi_{9}\Delta EQU_{t-i} + \sum_{i=1}^{g} \pi_{10}\Delta CB_{t} + \sum_{i=1}^{h} \pi_{11}\Delta CB_{t+i} + \sum_{i=1}^{l} \pi_{12}\Delta CB_{t-i} + u_{t}$$

$$(5)$$

RESULTS AND DISCUSSIONS

Descriptive Statistics Results

Descriptive statistics provide a foundational understanding of the characteristics and distribution of data before conducting the econometric analyses. These measures help in identifying the central tendency, dispersion, and distributional properties of each variable, which are essential in determining the suitability of the data for time series modeling and in interpreting subsequent results.

Table 1: Descriptive Statistics Results

	IND	ACI	EOH	СВ
	11 12	ASI	EQU	
Mean	29.53737	22763.67	7898.516	309.0823
Maximum	38.08422	97912.90	54684.90	2756.300
Minimum	18.36758	163.8000	7.088430	0.000000
Std. Dev.	5.114508	22038.68	11838.21	591.6037
Skewness	-0.13025	1.329932	2.310839	2.422190
Kurtosis	2.204099	5.092664	8.636947	9.031604

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Jarque-Bera	1.139641	18.61294	86.34451	97.25342	
Probability	0.565627	0.000091	0.000000	0.000000	
Observations	39	39	39	39	

Source: Researcher's Computation Using EViews-12 (2025)

Starting with industrial sector growth (IND), the mean value of 29.54% indicates that, on average, the industrial sector contributed around 30% to Nigeria's GDP over the study period. The maximum value of 38.08% and the minimum of 18.37% reflect substantial variability in the sector's performance, possibly due to policy changes, external shocks, or structural constraints across the years. The standard deviation of 5.11% suggests moderate dispersion from the mean, indicating consistent fluctuations. The negative skewness value (-0.13) implies a slight leftward tail, suggesting that a few observations fall below the average industrial performance. With a kurtosis of 2.20, the distribution is slightly flatter than the normal distribution. The Jarque-Bera test statistic of 1.14 and a probability value of 0.57 suggest that the industrial sector data follow a normal distribution, supporting the appropriateness of parametric analyses.

For the All Share Index (ASI), the mean stands at 22,763.67, indicating the average index level over the period, with a remarkably wide range between the minimum value of 163.80 and the maximum of 97,912.90. This large gap and a high standard deviation of 22,038.68 reflect significant volatility in Nigeria's capital market, likely linked to economic reforms, political instability, global financial trends, and domestic investor behavior. The positive skewness (1.33) indicates a long right tail, showing more frequent lower index values and occasional high spikes. The kurtosis value of 5.09 suggests a leptokurtic distribution, implying the presence of extreme values. The Jarque-Bera statistic of 18.61 and its very low probability (0.00009) confirm that the ASI data are not normally distributed, hinting at the need for transformation or robust estimation techniques during analysis.

In the case of equities (EQU), the average market capitalization over the period is ₹7,898.52 billion, with values ranging from a low of ₹7.09 billion to a high of ₹54,684.90 billion. This sharp increase reflects the evolving nature of Nigeria's stock market, possibly driven by regulatory improvements, technological advancements, and macroeconomic factors. The standard deviation of ₹11,838.21 billion indicates substantial dispersion, which is corroborated by the high skewness of 2.31 and kurtosis of 8.64, both of which signal a heavily right-skewed and peaked distribution. The Jarque-Bera statistic of 86.34 with a probability of 0.000 strongly rejects the hypothesis of normality, implying that equities data are characterized by extreme movements, and this must be accounted for in further econometric modeling.

Lastly, the corporate bonds (CB) variable shows an average value of \$\frac{8}{3}09.08\$ billion, with a minimum of zero and a maximum of \$\frac{8}{2}.756.30\$ billion, highlighting a historically underdeveloped market that has seen recent growth. The standard deviation of \$\frac{8}{5}91.60\$ billion also shows high variability relative to the mean. The skewness of 2.42 indicates a right-skewed distribution, and the kurtosis of 9.03 reflects a heavy-tailed distribution, suggesting the presence of outliers or infrequent large bond issues. The Jarque-Bera statistic of 97.25 and a p-value of 0.000 confirm the non-normality of the corporate bond data. This deviation from normality reinforces the need for robust estimation techniques when modeling the impact of bond market development on industrial growth.

Unit Root Test

The study conducted unit root test on each of the series using Augmented Dickey-Fuller (ADF) test to determine the level of stationarity of the data and the results are captured in Table 2:

Table 2: Unit Root Test Results

	ADF	Decision			
Variables	Levels (Intercept & trend)		1 st difference (Intercept & trend)		Decision
	ADF	Critical values	ADF	Critical values	Integration Levels
IND	-0.790566	-3.540328	-6.526185	-4.234972*	I(1)

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ASI	-0.947804	-3.533083	-5.127919	-4.226815*	I(1)
EQU	-3.849515	-4.219126	-4.965910	-4.243644*	1(1)
СВ	-1.019273	-3.533083	-4.339638	-3.536601**	1(1)

Note: The tests include intercept with trend; * and ** significant at 1 and 5%

Source: Researcher's Computation Using EViews-12 (2025)

According to the results presented in Table 2, all the variables were found to be non-stationary at level but became stationary after first differencing, indicating that they are integrated of order one, I(1). For industrial sector growth (IND), the ADF test statistic at level was -0.790566, which was higher (in absolute terms) than the 5% critical value of -3.540328, suggesting non-stationarity. However, at first difference, the ADF statistic dropped significantly to -6.526185, which exceeded the 1% critical value of -4.234972, indicating that IND became stationary after differencing.

Similarly, the All Share Index (ASI) was non-stationary at level with an ADF value of -0.947804 compared to the 5% critical value of -3.533083. Upon first differencing, the ADF statistic improved to -5.127919, surpassing the 1% critical threshold of -4.226815, confirming stationarity at I(1). This outcome implies that fluctuations in ASI over time contain stochastic trends, which needed to be eliminated before modeling.

The equity variable (EQU) also showed signs of non-stationarity at level, although it was closer to the critical threshold, with an ADF statistic of -3.849515 relative to the 1% critical value of -4.219126. However, after first differencing, the ADF statistic improved to -4.965910, which was more negative than the 1% critical value of -4.243644, confirming it is stationary at I(1). This suggests that equity market capitalization data became stable only after removing the trend component.

Corporate bonds (CB) followed a similar pattern. The ADF value at level was -1.019273, clearly above the 5% critical value of -3.533083. However, at the first difference, the ADF statistic dropped to -4.339638, which was lower than the 5% critical value of -3.536601, establishing that CB also became stationary at I(1). This indicates that corporate bond data, despite exhibiting volatility and skewness in descriptive statistics, stabilizes when considered in terms of growth or changes over time.

Co-integration Test

In this study, the Engle and Granger two-step cointegration test was employed to assess whether a long-term relationship exists between capital market fundamentals, represented by the All-Share Index, Equities, and

Corporate Bonds—and industrial sector growth in Nigeria.

Table 3: Engel & Granger Co-integration Result

Residual	t-Statistic	Prob.*	
Augmented Dickey-Fuller test statistic	-1.984871**	0.0451	
Test critical values:	1% level	-2.630762	
	5% level	-1.950394	
	10% level	-1.611202	

Note: ** p<0.05

Source: Researcher's Computation Using EViews-12 (2025)

The results of the cointegration test, presented in Table 3, reveal that the Augmented Dickey-Fuller (ADF) test statistic for the residuals is -1.984871 with an associated probability value of 0.0451. When evaluated against





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the critical values, this test statistic is greater than the 5% critical thresholds of -1.950394 suggesting that the null hypothesis of no cointegration is rejected.

Dynamic Ordinary Least Squares (DOLS) Regression Estimates

The study confirmed the existence of a cointegrating relationship between capital market fundamentals and industrial sector growth in Nigeria. Consequently, it advanced to estimate the long-run dynamics using the Dynamic Ordinary Least Squares (DOLS) technique. This method effectively captures the stable long-term associations among the variables while addressing potential issues of endogeneity and serial correlation. The resulting estimations from the DOLS procedure are presented and discussed in Table 4.

Table 4: Dynamic Ordinary Least Squares (DOLS) Result

Dependent Variable: IND (%)

Variable	Coefficient	Std. Error	t-Statistic	Prob.
ASI	0.0399	0.0082	4.8722	0.0002
EQU	-0.0107	0.0054	-1.9712	0.0674
СВ	0.1158	0.0491	2.3595	0.0323
С	6.4801	1.5827	4.0944	0.0067
Reliabil	ity Estimate			
R-squared	0.864903			
Adjusted R-squared	0.702787			
Long-run variance	3.995645			

Source: Researcher's Computation Using EViews-12 (2025)

The coefficient of the All Share Index (ASI) is 0.0399, with a highly significant t-statistic of 4.8722 and a pvalue of 0.0002. This positive and statistically significant result at the 1% level implies that an increase in the ASI is associated with a substantial long-run increase in industrial sector growth.

Equities (EQU), represented by the market capitalization of listed stocks, have a negative coefficient of -0.0107 and a t-statistic of -1.9712. Although the p-value of 0.0674 indicates that this relationship is only statistically significant at the 10% level, the negative sign raises critical concerns.

On the other hand, Corporate Bonds (CB) exhibit a positive coefficient of 0.1158 with a t-statistic of 2.3595 and a p-value of 0.0323, indicating statistical significance at the 5% level. This finding highlights the importance of corporate bonds as a reliable source of long-term financing for industrial projects.

The R-squared value of 0.8649 indicates that approximately 86.49% of the variation in industrial sector growth over the study period is explained by changes in the capital market fundamentals. This high R-squared value demonstrates a strong model fit and suggests that the independent variables jointly account for a substantial portion of the long-term movements in industrial sector performance. It supports the central thesis of the study that developments in the capital market significantly influence industrial sector dynamics.

The Adjusted R-squared of 0.7028, though slightly lower than the R-squared, adjusts for the number of explanatory variables in the model and still reflects a good level of explanatory power. It implies that even after accounting for degrees of freedom, over 70% of the variance in industrial sector growth can be attributed to the included capital market indicators. This confirms that the model is not only statistically strong but also practically relevant, with minimal risk of overfitting.





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The long-run variance estimate of 3.9956 provides additional insight into the stability of the long-term relationship. This measure indicates the degree of variability in the residuals from the cointegrating regression. While some variance is expected in time series models, a relatively moderate long-run variance like this one suggests that the error term remains stable over time, reinforcing the robustness of the model's long-run estimates.

DISCUSSION OF FINDINGS

Findings from the study showed that the All Share Index (ASI) had a positive and statistically significant impact on industrial sector growth in Nigeria. The implication of this outcome is that overall stock market performance, as captured by the ASI, plays a critical role in driving long-term industrial expansion. This result suggests that an increase in ASI, reflecting higher investor confidence and improved market performance—stimulates capital formation and encourages industrial investment, particularly in fixed assets, research, and technology upgrades. The outcome aligns with the position of Ahmed and Bashir (2023), who observed that a rising stock market index in North African economies such as Egypt and Tunisia was associated with improved industrial output, owing to enhanced investor optimism and more favourable market conditions for long-term investment. Similarly, Patel and Singh (2024) found that ASI-equivalent indices in South and Southeast Asia had a strong influence on industrial sector value-added, reinforcing the central role of equity markets in mobilizing long-term productive capital. These results affirm the theoretical expectation of financial markets being efficient conduits for reallocating resources toward growth-enhancing industrial activities.

On the other hand, the study found that Equities, measured by the market capitalization of listed stocks, had a negative but marginally significant impact on industrial sector growth. This outcome suggests that, while the equity market is expanding in size, it may not be sufficiently channeling capital to the industrial sector in Nigeria. Several structural issues could explain this disconnect. One possibility is that the Nigerian equity market is dominated by non-industrial sectors such as telecommunications and banking, which may limit the exposure of industrial firms to capital inflows. Another is the tendency for speculative trading rather than productive, longterm investment. This finding is consistent with the observation by Okeke and Nwachukwu (2023), who reported that equity market expansion in Nigeria had not translated into increased manufacturing or industrial output due to sectoral imbalance and weak corporate governance. It also aligns with the conclusions of Mensah and Adusei (2022), who, in their study on Ghana, found that the mere growth in stock market size does not necessarily guarantee industrial development unless it is accompanied by structural reforms to ensure that capital is directed toward productive sectors. However, this result contradicts the findings of Zhang and Lee (2023), who reported that equity markets had a strong and positive influence on manufacturing growth in emerging Asian economies, primarily because those markets had well-diversified sectoral listings and more mature investor participation.

The study further revealed that Corporate Bonds (CB) had a positive and statistically significant impact on industrial sector growth in Nigeria. This finding implies that as the corporate bond market expands, it becomes an increasingly effective mechanism for financing long-term industrial projects, especially those requiring large capital outlays such as infrastructure development, plant expansion, and equipment upgrades. Unlike equity markets that are often driven by investor sentiment, bond markets tend to attract more stable, long-term investors who provide consistent funding streams to the real sector. This is in line with the conclusions drawn by Ramirez and Oliveira (2024), who noted that corporate bond issuance in Latin American economies had been instrumental in supporting industrial development through structured, predictable, and cost-effective financing. The outcome also supports the findings of Kamau and Otieno (2022), who reported that the corporate bond market in South Africa had a significant and sustained effect on industrial GDP, largely due to policy support and investor confidence. In contrast, Afolabi and Osabohien (2023) observed that the bond market's influence on Nigeria's industrial sector was previously insignificant due to underdevelopment, but recent policy reforms appear to have reversed that trend, which aligns with the current study's results.

CONCLUSION AND RECOMMENDATIONS

This study set out to examine the impact of capital market fundamentals on industrial sector growth in Nigeria, with particular focus on the roles of the All-Share Index, Equities, and Corporate Bonds. The findings confirm a significant long-run relationship, affirming that capital market development plays an essential role in shaping industrial performance. These outcomes highlight the difference degrees of influence that capital market





instruments exert on industrial growth, reinforcing the broader understanding that financial market structures critically shape real sector development.

Based on the outcomes of this study, several targeted recommendations are essential to strengthen the link between capital market fundamentals and industrial sector growth in Nigeria.

- i. First, the positive and significant impact of the All-Share Index (ASI) on industrial growth highlights the need to sustain investor confidence and overall market performance. To achieve this, the Securities and Exchange Commission (SEC) Nigeria and the Nigerian Exchange Group (NGX) should prioritize enforcing transparency, promoting corporate governance, and encouraging listings from diverse industrial firms to deepen market breadth. These steps will help ensure that ASI reflects broader economic fundamentals and drives productive investment into the industrial sector.
- ii. The negative yet marginally significant relationship between Equities and industrial growth indicates inefficiencies in how equity capital is mobilized and allocated. The Nigerian Investment Promotion Commission (NIPC), in collaboration with the Central Bank of Nigeria (CBN), should develop sector-specific investment incentives that attract equity financing into manufacturing, construction, and other industrial sub-sectors. Furthermore, the NGX should revise listing requirements to support small and medium-sized industrial enterprises in accessing equity markets, possibly through a tailored industrial board or innovation-driven listing segment.
- Regarding the significant positive impact of Corporate Bonds on industrial growth, the Debt iii. Management Office (DMO) and SEC Nigeria should work together to simplify bond issuance procedures and reduce associated regulatory bottlenecks. In addition, the CBN can support corporate bond development by offering credit enhancement facilities or partial guarantees for industrial bond issuers, especially in the manufacturing and infrastructure sectors. This will encourage private-sector bond issuance and attract institutional investors seeking stable, long-term returns. Strengthening credit rating agencies and ensuring accurate assessments of industrial firms' creditworthiness will further support the credibility and growth of the bond market.

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APPENDIX

Table 5: Data Presentation

			Nigerian stock exchange Equities only (equ, ₦' Billion)	
1986	33.16	163.80	7.09	0.40
1987	33.22	190.90	8.26	0.00
1988	32.94	233.60	10.11	0.40
1989	35.74	325.30	14.08	0.60
1990	35.76	513.80	22.23	0.80
1991	37.33	783.00	33.88	1.40
1992	38.08	1,107.60	47.93	1.80
1993	33.50	1,543.80	66.81	2.10
1994	31.63	2,205.00	95.42	2.10
1995	36.91	5,092.20	220.36	2.10
1996	37.82	6,992.10	302.58	3.00
1997	35.61	6,440.50	278.71	2.80
1998	28.99	5,672.70	256.90	3.10
1999	29.67	5,266.40	294.10	3.10
2000	34.17	8,111.00	466.06	4.10
2001	28.57	10,963.10	648.45	5.80
2002	23.28	12,137.70	748.70	3.50
2003	26.27	20,128.94	1,324.90	8.40
2004	28.68	23,844.50	1,925.94	7.90
2005	28.49	24,085.80	2,523.49	9.83
2006	26.02	33,189.30	4,227.13	3.49
2007	24.60	57,990.20	10,180.29	16.98
2008	24.97	31,450.78	6,957.45	16.41
2009	21.46	20,827.17	4,989.39	10.05
2010	25.32	24,770.52	7,913.75	56.37
2011	28.35	20,730.63	6,532.58	1,341.29
2012	27.31	28,078.81	8,974.45	1,400.43
2013	26.04	41,329.19	13,226.00	1,394.00
2014	24.95	34,657.15	11,477.66	144.96
2015	20.38	28,642.25	9,850.61	205.89
2016	18.37	26,874.62	9,246.92	281.97
2017	22.55	38,243.19	13,609.47	276.50
2018	26.01	31,430.50	11,720.72	256.56
2019	27.65	26,842.07	12,968.59	355.82
2020	28.58	40,270.72	21,056.76	507.76
2021	31.87	42,716.44	22,296.84	718.30
2022	31.24	51,251.06	27,915.07	1,058.50
2023	33.22	74,773.77	40,917.51	1,189.40
2024	33.24	97,912.90	54,684.90	2,756.30

Sources: CBN, 2023; Securities and Exchange Commission (SEC) Nigeria Annual Reports, 2025