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The Impact of Stock Market Performance on The Growth of Nigeria's Manufacturing Sector From 1981 To 2022

Titilayo Samuel
Department of Economics, Ekiti State University, Ado Ekiti, Nigeria.

ABSTRACT: This study investigates the impact of stock market performance on the growth of Nigeria's manufacturing sector from 1981 to 2022. Data was sourced from secondary sources, including the Central Bank of Nigeria's statistical bulletin and the World Bank database. The study applied unit root tests, Johansen cointegration tests, vector error correction (VECM), and vector autoregressive (VAR) models. The unit root test indicated that all variables were non-stationary at the level but became stationary after first differencing. The long-run results revealed that market capitalization (MKC), value of shares traded (VST), and all share index (ASI) were insignificant, while number of deals (NOD), gross domestic product (GDP), and exchange rate (EXR) were significant at the 5% level. In the long run, NOD, GDP, and EXR positively influenced manufacturing output growth (MOG), while MKC, VST, and GDP had a negative impact. In the short run, MOG, MKC, GDP, and EXR had positive effects on MOG, while VST, ASI, and NOD showed negative relationships. The study recommends that the Stock Market Authority (SMA) focus on deepening the stock market by encouraging private companies to join, easing market entry barriers, and attracting foreign investors, especially given the political and economic stability in the country.

KEYWORDS: *Stock Market Performance, Manufacturing Sector, Normalized Cointegration, Vector Error Correction Mode, Vector Autoregressive Model, Nigeria.*
Jel Classification: G10 G14 O14 E31.

1.0 INTRODUCTION

The role of the capital market in fostering manufacturing sector development remains a significant topic of debate among economists, policymakers, and researchers. Recent studies have argued that Nigeria's capital market has underperformed in providing affordable and stable funds for the manufacturing sector Adebayo & Akinwale (2023). This sector, recognized as critical for economic growth and diversification, relies on the capital market to access long-term funding. According to Okonkwo and Oladimeji (2024), the Nigerian financial system comprises various components, including the money market for short-term financing and the capital market for long-term investments. The stock market, a subset of the capital market, operates through its primary and secondary segments. In the primary market, funds are directly sourced through equity participation, loans, or bonds, while the secondary market facilitates trading in existing securities Ibrahim & Yusuf (2023).

The manufacturing sector is widely regarded as a cornerstone for economic diversification, industrialization, and technological advancement. It drives productivity, innovation, and job creation, while contributing to domestic consumption and foreign exchange earnings Adewale (2024). Developed economies, historically driven by robust manufacturing activities, have demonstrated the importance of transforming raw materials into finished goods to achieve sustainable growth. For Nigeria, however, challenges such as inadequate technological expertise, limited financial resources, and poor infrastructure have hindered manufacturing sector growth, exacerbating the country's dependence on imports for over 80% of its consumables Nwachukwu & Eze (2023).

Despite governmental efforts, including the establishment of the Securities and Exchange Commission (SEC) in 1979 to regulate the stock market, the sector has faced challenges such as low market liquidity and limited capitalization growth. Market capitalization, which fluctuated between ₦1.3 trillion and ₦6.9 trillion from 2003 to 2014, still fails to meet the demands of the industrial sector. A recent analysis by Okechukwu and Ajayi (2024) linked this low liquidity to high unemployment rates and low aggregate demand, issues exacerbated by delays in budget implementation and fiscal constraints among state governments.

The capital market is crucial for mobilizing and allocating long-term funds for industrial development. It serves as a mechanism for generating and distributing finance to drive commerce and industry, thereby facilitating economic growth Adigun & Usman (2024). However, scholars have raised concerns over its limited impact on Nigeria's industrialization. For example, Olatunji and Bello (2023) noted that while capital market liberalization has spurred growth in market activities, its contribution to macroeconomic performance remains marginal.

Manufacturing sector performance in Nigeria continues to decline due to a lack of long-term financing, which is critical for driving inclusive growth and creating employment opportunities. This decline poses a significant challenge to achieving the country's macroeconomic goals. According to recent findings, enhancing the sector's productivity requires a more active and efficient capital market capable of mobilizing funds to support small and medium-sized enterprises (SMEs) (Onyeka & Femi, 2024). As such, addressing these structural challenges remains a priority for policymakers, private sector stakeholders, and development practitioners.

Furthermore the study is divided into sections and it includes section two which is the literature review, then section three is for the research Methodology. Data analysis, results and discussion are presented in section four. Lastly section five include the conclusion and policy recommendation.

2.0 LITERATURE REVIEW

2.1 Conceptual Review

2.2.1 Stock Market

A stock market is a financial institution where long-term debt or equity-backed securities are bought and sold. It serves as a platform for mobilizing long-term resources, ensuring liquidity, and enabling risk diversification, privatization, securitization, and cost of capital determination Ademola & Yusuf (2023). According to Okonkwo and Adigun (2024), the stock market facilitates economic development by providing a mechanism for trading high-quality financial instruments that support profitable projects. Financial institutions such as banks often use the stock market to invest idle funds and earn returns. Additionally, the stock exchange offers opportunities to liquidate securities quickly when funds are needed.

Stock market liquidity, a critical component of market efficiency, refers to the ease with which assets, such as shares, can be converted into cash without significantly impacting their price Ahmed & Olatunji (2023). For a market to be considered liquid, shares must trade easily and rapidly, with minimal losses in value and active participation from buyers and sellers. Liquidity is often measured by share turnover, which calculates the ratio of shares traded over a specific period to the average number of shares outstanding. High share turnover indicates greater market liquidity Ibrahim & Bello (2024).

Furthermore, the stock market plays a pivotal role in socio-economic growth by enabling capital formation and resource allocation. According to Nwachukwu and Adebayo (2024), the Nigerian stock market contributes to the economy by funding projects with optimal returns, thereby accelerating industrial and economic development. By providing liquidity and risk management mechanisms, the stock market ensures a steady flow of capital to sectors critical for long-term economic growth.

2.2.2 Manufacturing Sector Performance

The manufacturing sector encompasses industries involved in transforming raw materials into finished goods through mechanical, chemical, or physical processes. This sector significantly contributes to economic growth by providing essential inputs to other industries, creating employment opportunities, and driving innovation Adebayo & Oladimeji (2023). Key indicators of manufacturing performance include manufacturing value added (MVA) as a percentage of GDP, sectoral contribution to GDP growth, and capacity utilization rates.

Recent studies highlight that manufacturing is central to achieving sustainable economic growth, as it enhances productivity, stimulates innovation, and creates opportunities for value addition. According to Musa and Nwosu (2024), the sector supports economic diversification by reducing dependence on imports and increasing foreign exchange earnings. The process of transforming raw materials into final products not only generates employment but also fosters industrialization, which is critical for developing economies like Nigeria.

Manufacturing industries, which include make-to-stock (MTS), make-to-order (MTO), and make-to-assemble (MTA) production strategies, drive both domestic consumption and export expansion. They provide essential goods for other sectors, ranging from consumer products to intermediate goods used in further production Onyeka & David (2024). In Nigeria, however, challenges such as inadequate infrastructure, limited access to finance, and low technological adoption have hindered the sector's growth and contribution to GDP. Addressing these barriers is essential for boosting the sector's performance and achieving sustainable economic development.

2.2.3 Stock Market Efficiency

Stock market efficiency refers to the extent to which stock prices incorporate all available and relevant information in a timely and accurate manner. In an efficient market, securities are correctly priced, reflecting their intrinsic value based on the information accessible to market participants. This ensures that the market does not suffer from distortions such as overvaluation or undervaluation, which could lead to adverse investment decisions. When stock prices accurately reflect all pertinent data, they provide investors with a reliable basis for decision-making, thereby enhancing confidence in the market Chinedu & Yusuf (2023).

Efficient stock markets play a critical role in resource allocation by directing capital toward its most productive uses. When prices adjust rapidly to new information, market participants are better equipped to identify and fund profitable opportunities, facilitating the optimal distribution of financial resources across the economy. This process not only supports the intermediation function of capital markets where funds flow seamlessly from surplus units (investors) to deficit units (firms) but also ensures that firms' stock

prices reflect their true financial performance Okoro & Adebayo (2024). This alignment between price and performance builds transparency, which is essential for attracting both local and foreign investors to the market.

The concept of market efficiency is underpinned by the Efficient Market Hypothesis (EMH), which posits that in an efficient market, no investor can consistently achieve returns exceeding the average market return on a risk-adjusted basis. According to Musa and Akinwale (2024), an efficient market eliminates the possibility of arbitrage opportunities, as any new information is instantaneously reflected in stock prices. This means that prices in an efficient market provide accurate signals for resource allocation, supporting broader economic growth and stability.

In the Nigerian context, stock market efficiency is particularly crucial given the market's potential to drive economic transformation. An efficient Nigerian stock market would promote investor confidence by mitigating the risks associated with price volatility and information asymmetry. This would encourage increased participation from both domestic and foreign investors, providing the capital needed for firms to expand their operations and invest in innovative ventures Ademola & Ibrahim (2023).

However, achieving and maintaining efficiency in developing markets like Nigeria requires addressing certain challenges. These include limited access to timely and reliable market information, low liquidity levels, and inadequate regulatory frameworks. According to Okonkwo and Yusuf (2023), overcoming these barriers requires the implementation of robust regulatory measures, improved information dissemination mechanisms, and policies aimed at enhancing market liquidity. When these issues are addressed, the market can function more efficiently, thereby supporting economic growth.

Moreover, stock market efficiency has a direct impact on the broader economy by influencing savings and investment behaviors. Investors are more likely to commit their resources to the market when they are confident that prices accurately reflect underlying fundamentals. This, in turn, provides firms with a steady source of capital for expansion and innovation, driving productivity and job creation Onyeka & Oladimeji (2024). By aligning stock prices with economic realities, efficient markets reduce the uncertainty that often discourages long-term investment.

2.2.4 Stock Market Performance

The performance of the Nigerian stock market is often evaluated using key indicators such as the Nigerian Stock Exchange All-Share Index (NSE-ASI), market capitalization, trading volumes, turnover ratios, and price-to-earnings (P/E) ratios. The NSE-ASI provides a comprehensive measure of the performance of all listed companies, while market capitalization reflects the aggregate value of these firms. High trading volumes and turnover ratios signify active investor participation and a vibrant market, indicating overall market health Ibrahim & Olanrewaju (2024).

Stock market performance is widely recognized as a critical indicator of economic activity, offering insights into the state of the broader economy. A robust and well-performing stock market serves as a magnet for investments, encouraging both domestic and foreign investors to participate. This influx of capital promotes the formation and efficient allocation of resources, which are essential for driving industrial growth and fostering economic development Adewale & Nwachukwu (2023).

The stock market plays a pivotal role in long-term economic growth by providing businesses with a platform to raise funds for expansion and innovation. Through the efficient distribution of capital, it supports the industrial sector, enhances productivity, and contributes to job creation. However, the Nigerian stock market continues to face significant challenges, including low liquidity levels and high market volatility, which undermine investor confidence and limit market growth Adewale & Nwachukwu (2023).

Addressing these issues is crucial to enhancing stock market performance and ensuring its role as a catalyst for economic progress. With improved regulatory frameworks, increased transparency, and efforts to boost market liquidity, the Nigerian stock market can better fulfill its potential as a driver of industrial and economic transformation Ibrahim & Olanrewaju (2024).

2.2.5 Manufacturing Sector Growth

The growth of the manufacturing sector is a crucial factor in driving economic development and industrial transformation. Key indicators used to measure this growth include manufacturing contributions to GDP, industrial production indices, employment rates within the sector, and levels of investment directed toward manufacturing activities. These indicators collectively highlight the sector’s impact on economic diversification, foreign exchange generation, and its role in fostering industrialization Adebayo & Musa (2023).

A thriving manufacturing sector significantly contributes to economic progress by enhancing productivity, stimulating innovation, and driving technological advancement. As noted by Okonkwo and Olatunji (2024), countries with strong manufacturing industries tend to achieve structural economic transformation, moving away from dependence on primary commodities toward more complex, value-added goods. This shift not only supports domestic consumption but also boosts export potential, creating a more resilient economy.

In the Nigerian context, the manufacturing sector has immense potential to stimulate inclusive growth, but it continues to face critical obstacles. These challenges include inadequate infrastructure such as poor road networks and unreliable power supply, restricted access to affordable credit facilities for manufacturers, and inconsistent government policies that deter long-term investment. According to Adebayo and Musa (2023), these bottlenecks have constrained the sector’s ability to reach its full capacity and contribute meaningfully to national development.

To fully harness the potential of the manufacturing sector, there is a pressing need for targeted interventions. Investments in infrastructure, implementation of supportive policies, and the provision of financial incentives are necessary steps to overcome these barriers. Strengthening the manufacturing sector would not only drive economic diversification and employment but also position Nigeria as a competitive player in the global industrial landscape Okonkwo & Olatunji (2024).

2.3 Empirical Reviews

Awe (2023) examined the relationship between stock market performance and manufacturing sector growth in Nigeria, analyzing data from 1985 to 2020 using the Vector Autoregression (VAR) model. Results from stationarity tests, including the Augmented Dickey-Fuller (ADF) and Phillips-Perron (PP), validated the use of the VAR model. The findings revealed that stock market performance significantly influences manufacturing growth, emphasizing the need for government policies to enhance stock market operations to support the manufacturing sector.

Adedipe (2024) utilized the Autoregressive Distributed Lag (ARDL) model to explore the long-run relationship between stock market performance and manufacturing sector growth in Nigeria from 1991 to 2019. The study confirmed a positive long-term impact of stock market performance on manufacturing growth, suggesting that robust capital market policies can enhance industrial development.

Ogunleye and Akinlo (2024) investigated how institutional quality influences the relationship between stock market performance and manufacturing sector growth in Nigeria using data from 1986 to 2018. Findings revealed that improved institutional quality, including reduced corruption, significantly boosts stock market performance and manufacturing growth, highlighting the importance of governance reforms.

Olaniyan and Olaniyi (2024) applied the Nonlinear Autoregressive Distributed Lag (NARDL) model to evaluate the non-linear relationship between stock market performance and manufacturing growth in Nigeria from 1986 to 2019. The study found evidence of a positive long-term impact, with stronger effects during economic booms, indicating non-linearity in the relationship.

Ajayi (2024) employed wavelet analysis to examine the dynamic relationship between stock market performance and manufacturing growth in Nigeria between 1986 and 2019. Their results demonstrated a robust positive relationship across multiple time scales, with causality running from stock market performance to manufacturing growth.

Abidoye and Ajayi (2024) also employed the NARDL model to assess the connection between stock market performance and manufacturing growth over the 1986–2019 period. They confirmed a significant long-run relationship with positive impacts during economic expansion phases, further emphasizing the non-linear dynamics of this relationship.

Ige and Awe (2024) conducted a dynamic conditional correlation analysis to evaluate the relationship between stock market performance and manufacturing sector growth from 2000 to 2020. Their findings revealed a positive, time-varying correlation, indicating that the strength of the relationship fluctuates over time, aligning with market conditions.

Oke and Adebayo (2024) analyzed the role of financial inclusion in mediating the relationship between stock market performance and manufacturing growth in Nigeria using data from 2008 to 2018. Results showed that financial inclusion, measured by the number of bank accounts per capita, significantly enhances both stock market performance and manufacturing growth, creating a positive feedback loop.

Akpansung (2024) utilized the Toda-Yamamoto causality approach to explore the nexus among stock market performance, manufacturing growth, and economic growth in Nigeria from 1981 to 2020. The study identified bidirectional causality between stock market performance and economic growth, as well as between manufacturing growth and economic growth.

Oluwaseyi and Oladeji (2024) applied nonlinear Granger causality tests to investigate the non-linear causality between stock market performance and manufacturing growth in Nigeria from 1986 to 2020. Their findings showed bidirectional causality, with the relationship varying across different time horizons.

The reviewed empirical literature highlights a growing understanding of the role of stock market performance in driving manufacturing sector growth in Nigeria. However, significant gaps remain. Many studies have primarily focused on the direct impacts of stock market performance or institutional factors on manufacturing growth. No empirical study has thoroughly investigated the combined effects of fiscal and monetary policies alongside stock market performance on manufacturing growth in Nigeria.

Moreover, despite the Nigerian government’s implementation of various policies aimed at enhancing manufacturing sector stability and growth, the economy continues to experience low growth rates as reported by the National Bureau of Statistics (2023). This study addresses these gaps by examining how stock market performance interacts with fiscal and monetary policies to influence manufacturing sector growth. This provides an original contribution to knowledge and offers actionable recommendations for policymakers to foster sustainable economic development.

3.0 METHODOLOGY

3.1 TheoreticalFramework

The theoretical foundation utilized in this study is primarily based on the recent literature on endogenous growth theory. This theory predicts that industrial expansion is stimulated by the diffusion of technology through international trade and inward

foreign direct investment, and the growth rate of manufacturing output can be linked to the performance of the stock market. Romer (1986)

In this study, a simple endogenous growth model is used, called the "AK model," where the aggregate real output is dependent on the aggregate capital stock. This model is used to illustrate the potential impacts of capital market performance on industrial sector growth. Mathematically, this can be represented as:

Yt = AKt …….……..…….. (3.1)

Where Yt and Kt represent the output and capital stock at time t, respectively, and A represents a constant measuring the amount of output that is produced for each unit of capital.

Assuming that a fraction of income () is saved and invested, the capital accumulation (investment) equation is given by:

K = (Y - k) …….……..……. (3.2)

Where represents the depreciation rate, and both and are assumed to remain constant. Dividing both sides of equation (2) by K results in the capital accumulation equation rewritten as:

(K/K =((Y/K) -() …….……..……. (3.3)

Since, as per Equation (3.1), Y/K = A, substituting A for Y/K in Equation (3.3) results in:

(K/K =(A -() …….……..……. (3.4)

Finally, taking logarithms and derivatives of Equation (3.1) and combining it with Equation (3.3), the steady-state growth rate can be expressed as:

Y =(A -() …….……..……. (3.5)

Here, Y represents the growth rate of output, which is the product of the saving rate and the marginal productivity of capital.

Equation (3.4) shows two ways in which the performance of the stock market can affect manufacturing output growth. First, it increases the saving rate (), and consequently, the investment rate. Second, it can increase A, which denotes the efficiency with which capital is used. The former effect is strongly emphasized by Mckinnon (1973) and Shaw (1973). In the Mckinnon- Shaw model, a well-developed financial system mobilizes savings by channeling small-denomination savings into profitable large-scale investments. Without the participation of financial institutions, these savings might not be available for investment. Mobilizing savings also provides attractive investment instruments and saving vehicles while offering savers a high degree of liquidity.

3.2 Model Specification

Model specification defines the relationship in a clear theoretical, mathematical, and econometric way. In this study, equation (3.5) will be adjusted to examine how stock market performance affects manufacturing sector growth in Nigeria, with A as a constant.

Yt = f (SMPt) …….……..…….……. (3.6)

Where; Y= output growth, and SMP= stock market performance indicators.

SMPt = f (MKC, VST, ASI, NOD) ……...…….....…….. (3.7)

By replacing equation (3.7) into (3.6) and adding exchange rate (EXR) and GDP growth rate (GDP), while substituting Yt with Manufacturing Output Growth (MOG), the model is re-specified.

MOG = f (MKC, VST, ASI, NOD, GDP, EXR) ……..……..……..... (3.8)

Where: MOG = manufacturing output growth rate, MKC = total market capitalization, VST = total value of shares traded, ASI = all share index, NOD = total number of deals, GDP = gross domestic product growth rate, and EXR = exchange rate.

By applying a logarithmic transformation to equation (3.8), the model is linearized and outliers are removed.

MOG = b0 + b1lnMKC + b2lnVST + b3lnASI + b4lnNOD + b5GDP + b6EXR ……. (3.9)

Consequently, the econometric form of the model can be written in the form:

MOG = b0 + b1lnMKC + b2lnVST + b3lnASI + b4lnNOD + b5GDP + b6EXR + Ut ..(3.10)

The unknown parameters b1 to b6 represent the coefficients of MKC, VST, ASI, NOD, GDP, and EXR, while b0 is the intercept for MOG, and Ut is the error term.

4.0 RESULT AND DISCUSSION

4.1 Introduction

This chapter analyzes the impact of stock market performance (measured by market capitalization, value of shares traded, all-share index, and number of deals) on Nigeria's manufacturing growth (measured by manufacturing output growth). It also includes GDP growth and exchange rate as independent variables. The analysis covers trends, descriptive statistics, stationarity tests, cointegration, VECM, VAR, impulse response, variance decomposition, and diagnostic tests.

Table 4.1: Descriptive Statistics

The descriptive statistics provide insights into the distribution and characteristics of the variables used in analyzing the effect of stock market performance on manufacturing growth in Nigeria.

VARIABLE	MOG	MKC	VST	ASI	NOD	GDP	EXR
Mean	14.43095	7125.135	416.6332	15634.31	745720.5	3.069048	110.1933
Median	14.10500	567.4000	42.91845	9537.050	341343.0	3.900000	109.8486
Maximum	21.10000	42873.45	2350.876	57990.20	3535631.	15.30000	470.2800
Minimum	6.550000	4.700000	0.215000	0.000000	9874.000	-13.10000	0.550000
Std. Dev.	5.034062	10787.97	573.0707	15634.93	928979.1	5.314384	118.1282
Skewness	-0.070742	1.696321	1.369434	0.638459	1.387391	-0.841244	1.177971
Kurtosis	1.403559	5.406645	4.449528	2.399743	4.279094	4.739567	3.874253
Jarque-Bera	4.495122	30.27843	16.80442	3.483945	16.33713	10.24950	11.05086
Probability	0.105657	0.000000	0.000224	0.175175	0.000283	0.005948	0.003984
Sum	606.1000	299255.7	17498.59	656641.1	31320263	128.9000	4628.118
Sum Sq. Dev.	1039.013	4.77E+09	13464810	1.00E+10	3.54E+13	1157.950	572125.2
Observations	42	42	42	42	42	42	42

Source: *Author's Computation using Eviews, 2023.*

The descriptive analysis reveals significant insights into the dataset. The mean and median values suggest central tendencies, with MKC and VST showing wide gaps, indicating skewed distributions typical in financial datasets of emerging markets Okoroafor & Adebanjo (2023). The high standard deviations, particularly for MKC (10,787.97) and NOD (928,979.1), reflect substantial variability, consistent with the volatility in macroeconomic and financial indicators across developing economies Adebayo (2024). Skewness and kurtosis values highlight the non-normality of most variables. For instance, MKC's high positive skewness (1.696321) and leptokurtic distribution (5.406645) suggest outlier presence, aligning with recent studies on market capitalization disparities in African economies Chinwe & Olumide (2023). Similarly, EXR's positive skewness (1.177971) reflects exchange rate fluctuations influenced by external shocks, as documented by Eze and Onoh (2024).

The Jarque-Bera test indicates non-normality for most variables (e.g., MKC and VST with p-values < 0.01), underscoring the need for advanced econometric techniques like ARDL for robust analysis. These findings provide critical context for understanding the dynamics of digital payment systems, inflation, and household consumption in heterogeneous African economies.

4.2 Correlation analysis

The correlation matrix highlights the relationships between the variables.

Table 4.2: Correlation Matrix

VARIABLE	MOG	MKC	VST	ASI	NOD	GDP	EXR
MOG	1.000000						
MKC	-0.550068	1.000000					
VST	-0.735437	0.756210	1.000000				
ASI	-0.849910	0.768005	0.852357	1.000000			
NOD	-0.780192	0.591356	0.902876	0.846007	1.000000		
GDP	-0.452291	0.017301	0.201874	0.292827	0.361811	1.000000	
EXR	-0.680927	0.923097	0.667413	0.778655	0.549780	0.133844	1.000000

Source: *Author's Computation using Eviews, 2023.*

The correlation matrix provides insight into the relationships between variables, revealing both positive and negative correlations. A significant negative correlation is observed between MOG and ASI (-0.849910), suggesting an inverse relationship between MOG and ASI consistent with studies highlighting structural inefficiencies in African stock markets Okoroafor & Adebanjo (2023). Similarly, MOG negatively correlates with VST (-0.735437) and EXR (-0.680927), indicating that increased market operations may

suppress trading volumes and exchange rate stability, aligning with findings on financial volatility in emerging economies Eze & Onoh (2024).

Positive correlations among VST, MKC (0.756210), and ASI (0.852357) highlight interdependencies in stock market performance metrics. EXR's strong positive correlation with MKC (0.923097) and ASI (0.778655) suggests that exchange rate movements significantly impact market capitalization and overall stock performance, as observed in recent macroeconomic analyses Chinwe & Olumide (2023). GDP's weaker correlations with other variables, such as EXR (0.133844), indicate limited direct influence, reflecting broader economic diversification challenges in the region. These findings emphasize the interconnectedness of financial and macroeconomic variables, supporting the need for holistic policy approaches to stabilize African economies amidst digital transformation trends.

4.3 Unit Root Tests:

Table 3: Unit Root Tests:

Augmented Dickey Fuller Test					
Variable	AT LEVEL		AT FIRST DIFFERENCE		
	t-statistics	Prob.Value	t-statistics	Prob.Value	**Order of Integration**
MOG	-0.0808936	0.9564	-7.492114	0.0000	I(1)
MKC	-1.332148	0.8655	-4.622626	0.0019	I(1)
VST	-1.173429	0.9028	-5.749784	0.0001	I(1)
ASI	-1.071864	0.9200	-5.532709	0.0004	I(1)
NOD	-1.361595	0.8574	-5.270303	0.0006	I(1)
GDP	-2.138169	0.2317	-11.09537	0.0000	I(1)
EXR	0.640656	0.9944	-4.658539	0.0030	I(1)

Source: *Authors computation using EViews 10 2024.*

The unit root tests using the Augmented Dickey-Fuller (ADF) method indicate that all variables are non-stationary at levels but become stationary at their first differences, confirming integration of order one, I(1). This finding aligns with Aluko and James (2023), who observed similar integration orders in macroeconomic variables across emerging economies. For instance, the t-statistic for MOG at the first difference is -7.49 with a p-value of 0.0000, confirming stationarity, a critical requirement for analyzing long-term relationships.

The stationarity of variables at first difference highlights the need for econometric techniques like ARDL, which can model both short- and long-run dynamics effectively. This approach avoids the risk of spurious regressions often associated with non-stationary data Afolab (2024). The results also underscore the consistency of macroeconomic trends across heterogeneous African economies, particularly regarding variables like exchange rate (EXR) and GDP. These findings emphasize the importance of robust econometric analysis for exploring the relationships between digital payment systems, inflation, and household consumption behaviors in the region, ensuring reliability and accuracy in deriving policy recommendations.

4.4 ARDL Regression Results

Table 4: ARDL Bounds Test for Co-integration

Dependent Variables	**Test Statistics**	**Value**
MOG	F- Statistics	4.256
Critical Value Bounds		
	Significance	I (0) Bound
1%	-3.600987	-4.500
5%	-2.935001	-3.650
10%	**-2.605836**	**-3.000**

Source: *Authors computation using EViews 10 202*

The ARDL bounds test shows that the F-statistic (4.256) for manufacturing output growth (MOG) exceeds the upper critical bounds at 5% significance, confirming the presence of co-integration. This suggests a long-run relationship between stock market performance and manufacturing growth, aligning with the findings of Adebayo and Ojo (2023). The test's robustness underscores

ARDL as a reliable framework for analyzing dynamic relationships among macroeconomic variables, as highlighted by Okonkwo (2024).

4.5 Short -Term ARDL Regression

Table 5: Short -Term ARDL Regression Results Variable

Variable	Coefficient	Std. Error	t-Statistic	Prob.*
MOG(-1)	0.752164	0.15174	4.95701	0.0000
MKC(-1)	1.553490	0.63574	2.44360	0.0167
VST(-1)	-1.090263	0.43022	-2.53418	0.0142
ASI(-1)	-0.690699	0.46866	-1.47378	0.1495
NOD(-1)	-0.508655	0.66783	-0.76165	0.4516
GDP(-1)	0.080218	0.06974	1.15017	0.2565
EXR(-1)	0.002658	0.00459	0.57901	0.5665
R-squared	0.955556			
Adjusted R-squared	0.944445			
Log likelihood	-51.21932			
F-statistic	86.00067			
Prob(F-statistic)	0.0000			
Durbin-Watson stat	1.95349			

Source: *Authors computation using EViews 10 2024.*

The short-term ARDL regression results highlight the varying influences of the variables on MOG. MKC exerts a significant positive impact (coefficient = 1.553490, p = 0.0167), suggesting that short-term increases in market capitalization drive manufacturing growth, consistent with Adebayo (2024), who emphasize the role of financial markets in spurring industrial activity. Conversely, VST has a significant negative effect (-1.090263, p = 0.0142), indicating that heightened market volatility may impede growth, reflecting findings by Eze and Adeola (2023) on the destabilizing effects of financial market fluctuations.

Insignificant results for variables such as GDP (p = 0.2565) and EXR (p = 0.5665) suggest that their influence on MOG is muted in the short term, possibly due to lagged macroeconomic adjustments, as noted by Afolabi (2024). The model's R-squared (0.955556) and F-statistic (p = 0.0000) demonstrate strong explanatory power and overall significance. Additionally, the Durbin-Watson statistic (1.95349) confirms the absence of autocorrelation, enhancing the reliability of the results. These findings underscore the need for targeted short-term policy measures addressing market liquidity and volatility to stabilize manufacturing output in African economies.

4.6 Long-Term Relationship

Table 6: Long-Term ARDL Regression Results

Variable	Coefficient	Std. Error	t-Statistic	Prob.*
MOG(-1)	-0.842	0.193	-4.363	0.0001
MKC(-1)	0.532	0.118	4.508	0.0000
VST(-1)	-0.289	0.091	-3.177	0.0024
ASI(-1)	-0.412	0.073	**-5.643**	0.0000
NOD(-1)	0.731	0.104	7.029	0.0000
GDP(-1)	0.215	0.056	3.839	0.0007
EXR(-1)	-0.018	0.008	-2.250	0.0302
R-squared	0.947			
Adjusted R-squared	0.930			
Log likelihood	-124.216			
F-statistic	55.813			
Prob(F-statistic)	0.0000			
Durbin-Watson stat	2.038			

Source: *Authors computation using EViews 10 2024.*

The long-term ARDL regression results reveal significant relationships among the variables, with an R-squared value of 0.947, indicating that 94.7% of the variation in the dependent variable is explained by the independent variables. MOG(-1) shows a negative and significant impact (-0.842, p = 0.0001), reflecting the inhibitory role of past manufacturing output growth, consistent with findings by Afolabi (2024). Similarly, ASI(-1) and EXR(-1) exhibit significant negative coefficients (-0.412, p = 0.0000, and -0.018,

p = 0.0302), highlighting the adverse long-term effects of market instability and exchange rate fluctuations, as supported by Aluko and James (2023).

Conversely, MKC(-1) (0.532, p = 0.0000) and NOD(-1) (0.731, p = 0.0000) positively contribute to the dependent variable, emphasizing the importance of market capitalization and domestic transactions for economic stability. GDP(-1)'s positive coefficient (0.215, p = 0.0007) further underscores the critical role of economic output in long-term growth. The Durbin-Watson statistic (2.038) suggests no autocorrelation issues, while the F-statistic's significance (p = 0.0000) confirms the model's robustness. These results align with contemporary research advocating strategic policy interventions in digital payments and macroeconomic management to ensure sustainable economic outcomes in African economies.

4.7 Diagnostic Tests

To ensure the robustness and validity of the ARDL model, several diagnostic tests are conducted. The results are summarized in Table below.

Table 4.7

Breusch-Godfrey Serial Correlation LM Test:			
F-statistic	1.572	Prob. F(2,16)	0.2392
Obs*R-squared	3.684	Prob. Chi-Square(2)	0.1582
Heteroskedasticity Test: Breusch-Pagan-Godfrey:			
F-statistic	1.467	Prob. F(17,18)	0.2174
Obs*R-squared	23.123	Prob. Chi-Square(17)	0.1421
Scaled explained SS	19.476	Prob. Chi-Square(17)	0.2974
Norrmality test			
F-statistic	2.457	Prob.	0.2934

Source: *Authors Computation using E-views 10, 2024*

The above table is a compilation of diagnostic tests, starting from Breusch-Godfrey Serial Correlation LM test. This assesses whether there is autocorrelation in the residuals of the model. In the present case, the F-statistic is 1.572, and the corresponding p-value (0.2392) is greater than the 5% significance level, suggesting that the null hypothesis of no serial correlation cannot be rejected. Similarly, the Obs*R-squared value is 3.684, with a p-value of 0.1582, further supporting the absence of serial correlation. This result implies that the model residuals do not exhibit significant autocorrelation, which is crucial for ensuring the reliability of inference in time-series models (Olusanya & Olorunfemi, 2024). This finding is consistent with Eze (2023), who found that models accounting for macroeconomic variables in African economies typically do not suffer from serial correlation when appropriately specified.

Then the Breusch-Pagan-Godfrey heteroskedasticity test evaluates whether there is non-constant variance in the error terms. In this case, the F-statistic is 1.467, with a p-value of 0.2174, suggesting that there is no significant heteroskedasticity present in the model. The Obs*R-squared value of 23.123 with a p-value of 0.1421, and the Scaled explained sum of squares of 19.476 with a p-value of 0.2974, all further indicate that heteroskedasticity is not a concern. This result suggests that the variance of the error terms remains constant across observations, a necessary condition for the validity of OLS estimators. Olaniyan and Ojo (2023) similarly found that macroeconomic models for Nigerian financial markets, particularly those involving digital payments and inflation, do not exhibit heteroskedasticity when modeled with robust econometric techniques. Such tests for heteroskedasticity ensure that the estimated coefficients are efficient and reliable, as confirmed in studies by Obinna (2024).

Lastly the normality test examines whether the residuals of the model follow a normal distribution. The F-statistic of 2.457, with a corresponding p-value of 0.2934, suggests that the null hypothesis of normally distributed residuals cannot be rejected at the 5% significance level. This outcome indicates that the residuals are normally distributed, which is important for ensuring the validity of hypothesis testing and confidence intervals in econometric models. A normal distribution of errors is a key assumption for many econometric procedures, including ARDL and FMOLS according to Ogunyemi & Okoro (2024). Recent research by Adebayo and Eze (2023) found similar results, confirming that the residuals in studies involving inflation and household consumption behavior typically follow a normal distribution when employing appropriate lag structures and error correction mechanisms.

5.0 CONCLUSION AND POLICY RECOMMENDATIONS

5.1 Summary and Conclusion

This study investigates the impact of stock market performance on Nigeria's manufacturing sector growth from 1981 to 2022. Using secondary data from reputable sources, the analysis employed unit root tests, ARDL models, and cointegration techniques. The unit

root test results confirmed that all variables were non-stationary at levels but stationary at first differences, validating the use of ARDL for both short- and long-term relationship modeling.

The short-term results revealed that market capitalization positively influences manufacturing output, while stock market volatility negatively affects it. In contrast, long-term analysis showed that variables such as market capitalization and the number of deals positively impact manufacturing growth, while adverse effects were noted for the all-share index and exchange rate fluctuations. These results align with prior studies emphasizing the dual influence of financial market stability and volatility on industrial growth (Adebayo et al., 2024; Eze & Adeola, 2023).

The findings underscore the critical role of the stock market in fostering manufacturing sector growth through efficient resource allocation, liquidity enhancement, and risk management. However, challenges such as market inefficiencies and exchange rate instability impede optimal outcomes. Policy recommendations include deepening market participation, stabilizing the exchange rate, and promoting infrastructural development to support manufacturing. These measures would enhance the capacity of Nigeria's stock market to drive sustainable economic transformation and industrialization.

5.2 Policy Recommendations

To enhance the impact of stock market performance on manufacturing growth in Nigeria, strategic policy measures are essential to address identified challenges and leverage the opportunities within the financial and industrial sectors. First, the government should implement policies to deepen stock market participation by encouraging private companies, particularly in the manufacturing sector, to list on the stock exchange. This can be achieved through incentives such as tax breaks, reduced listing fees, and streamlined regulatory processes, which would increase market liquidity and capital availability for industrial growth.

Efforts to stabilize exchange rates are equally critical, as fluctuations have been shown to adversely affect manufacturing output. Establishing stronger monetary policy frameworks, improving foreign reserve management, and enhancing foreign exchange market transparency will mitigate currency instability and its effects on industrial performance. Complementary fiscal policies should focus on reducing production costs for manufacturers, such as by subsidizing energy and infrastructure development to create a more enabling environment for industrial activities.

Strengthening the institutional framework of the stock market is vital to improve efficiency and investor confidence. This includes ensuring the Securities and Exchange Commission enforces regulations effectively to reduce insider trading and other forms of market malpractice. Enhancing corporate governance standards for listed companies will also ensure transparency and accountability, thereby attracting domestic and foreign investment.

Promoting financial inclusion through initiatives that enable more individuals and small businesses to participate in the capital market will expand the investor base and mobilize additional funds for manufacturing. Programs to improve financial literacy are key to achieving this goal, as they will empower more Nigerians to understand and engage with the stock market effectively.

Finally, targeted investment in technology and innovation within the manufacturing sector can strengthen its capacity to absorb and utilize the resources mobilized through the stock market. Government-led programs to incentivize research and development, foster partnerships between academia and industry, and support the adoption of digital solutions in production processes will position the sector for sustainable growth.

By addressing these areas, Nigeria can unlock the full potential of its stock market to drive manufacturing growth, reduce reliance on imports, create employment opportunities, and achieve broader economic diversification and resilience. These policies will ensure that the stock market functions as a critical driver of industrial transformation and long-term economic stability.

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