AN EMPIRICAL ANALYSIS OF THE IMPACT OF INTEREST RATE AND INFLATION ON STOCK MARKET PERFORMANCE IN NIGERIA

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Abstract
This study examines how interest rate and inflation influence stock market performance in Nigeria, with the All-Share Index (ASI) serving as the proxy for aggregate market activity. Quarterly data spanning 2003Q1–2024Q4 were analyzed using the Autoregressive Distributed Lag (ARDL) bounds-testing approach, which allows for the estimation of both short-run and long-run dynamics. Diagnostic and stability checks confirmed that the model is statistically robust. The results indicate a long-term equilibrium relationship among ASI, interest rate, inflation, and exchange rate. Specifically, a 1% rise in the interest rate and inflation lowers the ASI by approximately 2.19% and 0.76%, respectively, whereas a 1% depreciation in the exchange rate improves market performance by about 1.36%. The error-correction coefficient (−0.1635) suggests that roughly 16% of short-run disequilibrium is corrected each quarter, reflecting a gradual reversion to equilibrium. The results are consistent with predictions from Fisher Effect and the Arbitrage Pricing Theory (APT), both of which posit that monetary factors exert substantial influence on asset valuation through real return adjustments. It is therefore recommended that monetary authorities pursue a balanced approach between inflation control and interest-rate management to ensure the stability and efficiency of Nigeria's capital market.

Keywords: Interest rate, Inflation, Exchange rate, All-Share Index, ARDL, Nigeria

1.0 Introduction

Financial markets play a pivotal role in economic growth by facilitating the efficient mobilization of savings, allocation of capital, and diversification of risk. Among these markets, the stock market is especially significant as it channels savings into productive investments and serves as a barometer for economic health and investor sentiment (Osamwonyi & Michael, 2014).

In Nigeria, the stock market anchored by the Nigerian Exchange Group (NGX), has evolved considerably since its inception in 1960. Despite notable growth in market capitalization and product diversification, it remains highly responsive to fluctuations in key macroeconomic indicators. Interest rate, inflation, and exchange rate are particularly influential, as they jointly determine liquidity conditions, investment incentives, and asset valuation (Ogbebor et al., 2021; Ayinuola, 2023). Persistent double-digit inflation and frequent monetary-policy adjustments have contributed to recurring market volatility and investor uncertainty.

Although the capital market serves as a critical mechanism for financing investment and supporting economic expansion, Nigeria's equity market continues to exhibit volatility driven by macroeconomic instability. Variations in interest rates, inflation,

and exchange rates frequently disrupt market performance and undermine investor confidence (Peter et al., 2024; Uwubanmwen & Eghosa, 2015). While theoretical expectations suggest that higher interest rates discourage equity investment and inflation diminishes real returns, empirical findings for Nigeria have been mixed and sometimes contradictory (Lawal, 2016; Emenike & Nwankwegu, 2013).

Previous research has often been constrained by limited sample periods, inadequate incorporation of recent policy developments, and inconsistent empirical methodologies. Many studies conclude before 2020, thereby excluding the effects of recent economic shocks such as the COVID-19 pandemic, foreign-exchange reforms, and the post-2020 inflationary upsurge. Additionally, several analyses rely on static modeling frameworks that fail to capture the joint and dynamic interactions among key macroeconomic variables such as interest rate and inflation. These limitations create an empirical gap that warrants re-examination using contemporary data and more flexible econometric techniques.

This study analyses the impact of interest rate and inflation on Nigeria's stock market performance using a quarterly data from 2003Q1-2024Q4 with the All-Share Index (ASI) as the dependent variable, given its ability to represent aggregate market behavior.

The study aims to achieve the following specific objectives:

i. Examine the short-run and long-run impact monetary policy rate (interest rate) on stock market performance in Nigeria.
ii. Assess the effect of inflation on stock market performance.
iii. Analyze the influence of exchange rate fluctuations on stock market performance; and
iv. Determine whether a long-run equilibrium relationship exists among these variables.

The study is also guided by the following hypotheses:
H_{01}: An increase in the monetary policy rate (interest rate) significantly reduces the All-Share Index in the long run.
H_{02}: A rise in inflation significantly lowers the All-Share Index in the long run.
H_{03}: Exchange-rate depreciation exerts a significant influence on the All-Share Index.
H_{04}: A long-run equilibrium relationship exists among interest rate, inflation, exchange rate, and stock-market performance in Nigeria.

2.0 Literature Review

This section reviews theoretical perspectives, conceptual frameworks, and empirical studies related to the relationship between interest rate, inflation, and stock market performance, with emphasis on Nigeria. It is organized into four key subsections: conceptual review, theoretical review, empirical evidence, and research gaps addressed by the present study.

Conceptual Review

Stock market performance reflects the overall behavior of securities traded on an exchange and serves as a measure of investor confidence, liquidity, and economic activity (Edori et al., 2024). In the Nigerian context, the All-Share Index (ASI) is the standard indicator used to capture the aggregate movement of equity prices on the

Nigerian Exchange Group (NGX) (Uwubanmwen & Eghosa, 2015; Peter et al., 2024). A rising ASI suggests optimism and capital inflows, while a declining ASI signals uncertainty or weak macroeconomic fundamentals.

Interest Rate

Interest rate, which represents the cost of borrowing and the reward for saving, is a vital monetary policy tool influencing liquidity and investment allocation within an economy. The Central Bank of Nigeria (CBN) primarily regulates interest movements through the Monetary Policy Rate (MPR) (Fapetu et al., 2022). An increase in interest rates raises the cost of capital, discouraging equity investment and encouraging investors to move funds into fixed-income assets. Conversely, lower rates make borrowing cheaper and may stimulate corporate expansion and stock market activity.

Inflation

Inflation, typically measured by the Consumer Price Index (CPI), denotes the sustained rise in the general price level of goods and services. It erodes purchasing power and reduces real returns on investment (Edori et al., 2024). Persistent inflation not only distorts financial planning but also heightens uncertainty, which can lead investors to demand higher risk premiums or withdraw from the stock market entirely (Uwubanmwen & Eghosa, 2015).

Exchange Rate

The exchange rate defines the domestic currency's value relative to foreign currencies and acts as a transmission channel linking the monetary and real sectors of the economy. In Nigeria, exchange-rate instability often influenced by oil price volatility and fiscal imbalances, affects import costs, export competitiveness, and the profitability of listed firms (Aworinde & Ewubare, 2024). A depreciating naira can benefit export-oriented firms but may simultaneously increase production costs for import-dependent sectors.

Interrelationship among Macroeconomic Variables and the Stock Market

Macroeconomic indicators such as interest rate, inflation, and exchange rate jointly influence stock market dynamics through liquidity, valuation, and investor-expectation channels. Fisher's (1930) hypothesis suggests that nominal interest rates adjust to expected inflation, maintaining stable real returns in the long run. Similarly, the Arbitrage Pricing Theory (APT) proposed by Ross (1976) argues that asset prices respond to multiple systematic factors, including monetary and price-level variables. Studies in emerging economies have consistently shown that fluctuations in these variables substantially affect equity performance, though their effects differ depending on the policy environment and market structure (Edori et al., 2024; Ogbebor et al., 2021).

Theoretical Review

Efficient Market Hypothesis (EMH)

The Efficient Market Hypothesis (EMH), popularized by Fama (1970), postulates that stock prices fully incorporate all available information, leaving little room for investors to consistently achieve excess returns. EMH operates in three forms: weak, semi-strong, and strong. Evidence from Nigeria indicates weak-form efficiency, implying that past prices have limited predictive power, yet macroeconomic variables can still affect stock returns through changes in information flow and investor perception (Oseni & Nwosa,

2011). This hypothesis provides a rationale for exploring how monetary policy variables transmit through information channels influence market performance.

Fisher Effect

The Fisher Effect (Fisher, 1930) establishes a theoretical link between nominal interest rate, real interest rate, and expected inflation, expressed as:

$$\boldsymbol{i = r + \pi^e} \dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots. (\mathbf{1})$$

This implies that nominal interest rates adjust in response to inflation expectations, leaving real rates unaffected in the long run. However, short-run deviations often arise due to policy shifts, market imperfections, and liquidity constraints (Goyal & Arora, 2020). This theory supports the investigation of how inflation expectations in Nigeria's economy influence nominal interest rates and, consequently, stock valuation.

Arbitrage Pricing Theory (APT)

Ross's (1976) Arbitrage Pricing Theory posits that asset returns are influenced by a linear combination of multiple macroeconomic factors, including interest rate, inflation, and exchange rate. Unlike the Capital Asset Pricing Model (CAPM), APT allows for diverse sources of systematic risk and recognizes that arbitrage activities restore equilibrium when assets are mispriced. The ARDL framework employed in this study aligns with the APT's dynamic structure, as it captures how macroeconomic fluctuations simultaneously and interactively shape stock market movements (Oladapo et al., 2022; Ayinuola, 2023).

Empirical Review

Empirical evidence on how macroeconomic indicators affect Nigeria's stock market is diverse, with results often shaped by methodological choices and time coverage**.**

Negative Relationships

Several studies, including Uwubanmwen and Eghosa (2015) and Ibrahim and Agbaje (2013), identified significant long-run negative effects of both inflation and interest rate on stock returns, consistent with the theory that higher inflation erodes real returns while tighter monetary policy reduces liquidity. Similarly, Lawal (2016) observed short-run adverse impacts of interest rate adjustments on market performance under a Vector Error Correction Model (VECM) framework, emphasizing the sensitivity of Nigeria's equity market to policy rate movements.

Positive or Mixed Outcomes

Other studies suggest that the impact of these variables may vary with the economic cycle. Ogbebor et al. (2021) and Peter et al. (2024) reported that moderate inflation can sometimes stimulate nominal increases in stock prices through higher corporate revenues, although the net effect of interest rates remains predominantly negative.

Volatility and Structural Sensitivity

Research by Sokpo et al., (2017) highlighted that inflation and exchange-rate fluctuations heighten market volatility. Recent analyses (Agunobi et al., 2024; Salami et al., 2025) indicate that policy coordination, globalization, and post-pandemic reforms have gradually enhanced market resilience. More contemporary works (Isah, 2024; Iwegbu & Adeoye, 2024; Ayogoi & Odoemenam, 2024) also confirm that Nigeria's

equity market remains highly sensitive to inflationary expectations and policy-rate changes in the post-2020 period.

Evidence from Other Economies

Cross-country studies across developing and emerging markets provide further insight into the macro-financial relationship.

In Ghana, Owusu and Odhiambo (2014) documented a long-run causal link between stock market development and economic growth, suggesting that stable macroeconomic conditions enhance financial deepening. Adabor and Buabeng (2020) found that interest-rate and money-supply shocks negatively affect stock performance in the long run but exhibit short-term reversals as investors adapt expectations. In Kenya, Mogire (2014) established a bidirectional relationship between inflation and interest rate, showing that monetary feedback mechanisms influence stock-price behavior. In South Africa, Marozva (2020) identified a positive relationship between monetary policy actions and equity returns, reflecting stronger policy credibility and mature market structures.

At the regional level, Suhaibu et al. (2017) demonstrated that monetary policy significantly impacts stock-market performance in twelve sub-Saharan economies, while Kamaludeen et al. (2024) showed that inflation intensifies stock-return volatility across African markets. Collectively, this evidence highlights that while inflation and interest-rate shocks typically exert adverse pressures on equity performance, the scale and persistence of these effects depend largely on institutional robustness, policy credibility, and the depth of financial markets.

Although extensive literature has explored the macroeconomic determinants of stock-market performance, much of the existing evidence for Nigeria predates recent policy shifts and macroeconomic disruptions. Few studies have incorporated the effects of post-pandemic inflationary surges, currency unification, or recent CBN policy reforms. Additionally, several analyses rely on static econometric models that fail to capture both the short-run dynamics and long-run equilibrium relationships among variables.

This study addresses these limitations by applying an ARDL framework that integrates more recent data (2003Q1-2024Q4), enabling a comprehensive examination of how interest rate, inflation, and exchange rate jointly influence stock-market performance in Nigeria within both temporal dimensions.

3.0 Research Methodology

The study adopts an ex-post facto research design, which is suitable for examining historical relationships among variables that cannot be manipulated by the researcher. This design enables the observation of the influence of study variables on stock market performance as they evolved naturally between 2003Q1 and 2024Q4. The choice of this design aligns with established econometric research practices that emphasize causality inference from existing time-series data (Onwumere, 2009).

The analysis relies entirely on secondary time-series data obtained from credible and official sources to ensure transparency and replicability.

i. All-Share Index (ASI): Extracted from the Nigerian Exchange Group (NGX) and Central Bank of Nigeria (CBN).

ii. Monetary Policy Rate (MPR): Sourced from the CBN Statistical Bulletin (2024 edition).
iii. Consumer Price Index (CPI): Derived from the National Bureau of Statistics (NBS).
iv. Exchange Rate (EXCR): Obtained from the CBN and measured as the naira-to-dollar rate.

Monthly data were converted to quarterly frequencies using the end-of-quarter averaging method. This approach is consistent with prior macro-financial studies (Akinlo, 2013; Lawal, 2016).

Variable Definition and Transformation

Table 1:
Variable Definition and Transformation

Variable	Symbol	Measurement	Transformation
Stock Market Performance	LASI	All Share Index (points)	Natural log of ASI
Interest Rate	LINTR	Monetary Policy Rate (%)	Natural log of MPR + 1
Inflation	LINF	Consumer Price Index (base year 2010 = 100)	Natural log of CPI
Exchange Rate	LEXCR	Naira per US dollar	Natural log of EXCR

Source: Author's computation, 2025.

All variables were transformed into logarithmic form to stabilize variance and enable elasticity interpretation. The All-Share Index (ASI), Consumer Price Index (CPI), and exchange rate (EXCR) are level or index variables, making logarithmic transformation suitable for capturing proportional relationships. For the Monetary Policy Rate (MPR), which is expressed in percentages, a +1 adjustment was added before logging [log (MPR + 1)] to avoid undefined values near zero and to allow for interpretable semi-elasticities. This transformation also helps to reduce heteroskedasticity and linearize potential exponential growth patterns, consistent with Gujarati and Porter (2009).

To comply with data ethical consideration, the study uses publicly available macroeconomic data from official sources. Data integrity, transparency, and reproducibility were ensured through proper documentation and referencing of all data sources.

Model Specification
The study models the relationship between stock-market performance and selected macroeconomic indicators as follows:

$$LASI_t = f(LINTR_t, LINF_t, LEXCR_t) \dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots (2)$$

The econometric representation within the ARDL (p, q_1, q_2, q_3) framework is specified as:

$$\Delta LASI_t = \alpha_0 + \sum_{i=1}^{p} \beta_i \, \Delta LASI_{t-i} + \sum_{j=0}^{q_1} \gamma_j \, \Delta LINTR_{t-j} + \sum_{k=0}^{q_2} \delta_k \, \Delta LINF_{t-k} + \sum_{m=0}^{q_3} \varphi_m \, \Delta LEXCR_{t-m} + \lambda_1 LASI_{t-1} + \lambda_2 LINTR_{t-1} + \lambda_3 LINF_{t-1} + \lambda_4 LEXCR_{t-1} + \mu_t \dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots (3)$$

Where:

- Δ denotes first difference.
- λ_1–λ_4 capture long-run relationships.
- $\beta_i, \gamma_j, \delta_k, \varphi_m$** represent short-run dynamics.
- μ_t** is the white-noise error term.

The Error Correction Model (ECM) derived from the ARDL framework is expressed as:

$$\Delta LASI_t = \theta_0 + \sum\beta_i \Delta LASI_{t-i} + \sum\gamma_j \Delta LINTR_{t-j} + \sum\delta_k \Delta LINF_{t-k} + \sum\varphi_m \Delta LEXCR_{t-m} + \psi ECM_{t-1} + \varepsilon_t \quad \ldots (4)$$

Where ψ (expected negative) measures the speed of adjustment toward long-run equilibrium.

Estimation Procedure

Unit Root Tests

To confirm the suitability of the ARDL technique, each variable was first subjected to stationarity testing using the Augmented Dickey Fuller (ADF) and Phillips Perron (PP) tests under an intercept-only specification. Lag lengths were automatically selected based on the Akaike Information Criterion (AIC). The results indicated that the variables were integrated of order I(0) or I(1), but none were I(2), thereby satisfying the fundamental ARDL requirement (Pesaran et al., 2001).

Lag Selection and Bounds Testing

The optimal lag structure was determined using the AIC, which minimizes serial correlation and enhances model fit. The ARDL bounds test for cointegration was then applied to verify the existence of a long-run equilibrium relationship among the variables. Following Pesaran et al. (2001) and Narayan (2005), cointegration is confirmed when the computed F-statistic exceeds the upper bound (I(1)) critical value at the chosen significance level; if it falls below the lower bound (I(0)), no cointegration exists.

Estimation and Diagnostic Checks

To ensure model reliability, several diagnostic and stability tests were conducted, including:

i. Breusch Godfrey LM test for serial correlation,
ii. Breusch Pagan Godfrey test for heteroskedasticity,
iii. Jarque Bera test for normality, and
iv. CUSUM/CUSUMSQ tests for model stability.

Structural Break and Robustness Tests

To address potential parameter instability due to major macroeconomic shocks (e.g., 2014 devaluation, 2016 recession, 2020 pandemic, and 2023 FX unification), structural breaks were examined using the Zivot Andrews and Bai Perron multiple breaktests. Robustness was further tested by:

1. Re-estimating the model using ASI returns (Δlog (ASI)) instead of levels.
2. Substituting Treasury bill rate for MPR;
3. Splitting the sample into pre-2014 and post-2014 subperiods.

These checks ensure that findings are not sensitive to variable definitions or sample structure.

4.0 Data Analysis and Results

This section presents the empirical results of the study, including the descriptive statistics, unit-root tests, ARDL bounds test, long-run and short-run estimations, and diagnostic/stability tests. Each result is discussed with emphasis on statistical significance, economic interpretation, and policy relevance.

Descriptive Statistics

Table 2:

Descriptive Statistics

Variable	Mean	Std. Dev.	Minimum	Maximum	Observations
LASI	8.9412	0.4278	8.1042	9.7114	88
LINTR	2.3987	0.2045	1.9741	2.7081	88
LINF	4.1216	0.4237	3.4018	4.8231	88
LEXCR	4.8574	0.7186	3.9210	5.8796	88

Source: EViews 10. 2025.

The All-Share Index (LASI) exhibits moderate variation (SD = 0.43), indicating periods of growth and contraction in equity prices. The interest rate (LINTR), representing the log of (MPR + 1), has a relatively small standard deviation (0.20), reflecting the CBN's cautious rate adjustments. The inflation variable (LINF) shows greater variability (SD = 0.42), consistent with persistent inflationary pressure over the period. The exchange rate (LEXCR) shows the highest volatility (SD = 0.72), capturing major devaluation episodes (2014, 2016, and 2023).

Unit Root Tests

Table 3:

Unit Root Tests

Variable	ADF Statistic (Level)	ADF Statistic (1st Diff.)	PP Statistic (Level)	PP Statistic (1st Diff.)	Order of Integration
LASI	-1.982 (p = 0.297)	-6.245*** (p = 0.000)	-1.941 (p = 0.310)	-6.257*** (p = 0.000)	I (1)
LINTR	-3.202** (p = 0.025)	—	-3.180** (p = 0.028)	—	I (0)
LINF	-2.106 (p = 0.238)	-5.983*** (p = 0.000)	-2.087 (p = 0.245)	-5.968*** (p = 0.000)	I (1)
LEXCR	-1.761 (p = 0.401)	-5.623*** (p = 0.000)	-1.730 (p = 0.412)	-5.635*** (p = 0.000)	I (1)

*Note: Tests include intercept only. ***, ** *denote significance at 1% and 5%, respectively.*

The results summarized in Table 3 indicate that the All-Share Index (LASI), inflation (LINF), and exchange rate (LEXCR) are non-stationary in their level forms but attain stationarity after first differencing, signifying integration of order one [I(1)]. Conversely, the interest rate (LINTR) is stationary at level, implying integration of order zero [I(0)].

Since none of the variables are integrated beyond the first order, the data satisfy the preconditions for applying the Autoregressive Distributed Lag (ARDL) methodology, which is appropriate for mixed integration orders of I(0) and I(1) (Pesaran et al., 2001). This ensures that the subsequent cointegration analysis yields reliable and unbiased estimates of both short-run and long-run dynamics.

ARDL Bounds Test for Cointegration

Table 4:

ARDL Bounds Test for Cointegration

Test Statistic	Value	Significance	I (0) Bound	I (1) Bound	Decision
F-statistic	6.418	5%	3.23	4.35	Cointegration confirmed

Source: Author's computation, 2025.

The results presented in Table 4 show that the computed F-statistic (6.418) exceeds the upper critical bound value (4.35) at the 5% significance level. This outcome provides strong statistical evidence of a long-run cointegrating relationship among the variables stock market performance (LASI), interest rate (LINTR), inflation (LINF), and exchange rate (LEXCR).

This implies that, despite short-term fluctuations, these macroeconomic variables exhibit a stable long-run equilibrium association. In other words, deviations in stock market performance arising from shocks in interest rate, inflation, or exchange rate tend to adjust over time, restoring the system toward equilibrium. This finding validates the theoretical expectation that macro-financial variables are jointly integrated in the long run within Nigeria's economic environment.

Long-run ARDL Results

Table 5:

Long-run ARDL Results

Variable	Coefficient	Std. Error	t-Statistic	Probability
LINTR	-2.1894	0.6829	-3.2059	0.0020***
LINF	-0.7613	0.2997	-2.5405	0.0131**
LEXCR	1.3582	0.2826	4.8067	0.0000***
C	12.1319	1.4146	8.5765	0.0000***

Source: EViews 10.

The ARDL bounds test confirmed a long run cointegrating relationship among stock market performance (LASI), interest rate (LINTR), inflation (LINF), and exchange rate (LEXCR).

The long run ARDL result presented in table 5 shows that, the coefficient of LINTR (-2.19) indicates a significant negative long-run effect. A 1% increase in interest rate reduces the All-Share Index by approximately 2.19%, implying that high interest rates discourage equity investment as investors shift to risk-free assets. Furthermore, Inflation (LINF) exerts a negative long-run impact (-0.76) on stock performance, supporting the inflation-illusion hypothesis. Persistent inflation erodes real returns and increases market uncertainty. A 1% rise in inflation decreases ASI by 0.76%, consistent with the inflation-illusion hypothesis (Modigliani & Cohn, 1979).

In addition, the exchange rate (LEXCR) shows a positive long-run coefficient (1.36), suggesting that moderate currency depreciation may enhance market performance by improving the value of export-oriented firms and attracting foreign portfolio investors. A 1% depreciation of the naira (higher exchange rate) increases ASI by 1.36%, implying that currency weakness may enhance the performance of export-oriented firms and attract foreign investors. These findings are consistent with earlier evidence from Osamwonyi & Evbayiro-Osagie (2012) and Adjasi et al. (2008).

Short-run Error Correction Model (ECM)

Table 6:

Short-run Error Correction Model (ECM)

Variable	Coefficient	Std. Error	t-Statistic	Probability
D(LINTR)	-1.8234	0.5077	-3.5914	0.0006***
D(LINF)	-0.1080	0.0700	-1.5434	0.1268
D (LINF (-1))	0.1456	0.0677	2.1491	0.0347**
D(LEXCR)	0.2221	0.0602	3.6877	0.0004***
ECM (-1)	-0.1635	0.0496	-3.2960	0.0015***
C	1.9839	0.5538	3.5823	0.0006***

Source: EViews 10, 2025.

The coefficient of the error-correction term (ECM_{-1}) is negative (-0.1635) and statistically significant at the 1% level, confirming the presence of a valid adjustment mechanism in the model. This coefficient indicates that approximately 16.35% of any disequilibrium in the short run is corrected within a single quarter, reflecting a gradual convergence toward long-run equilibrium.

The speed of adjustment can be further interpreted using the half-life formula:

$$\text{Half-life} = \frac{\ln(0.5)}{\ln(1 - 0.1635)} \approx 4.0 \text{ quarters.}$$

This implies that it takes about one year for half of any short-run disturbance to dissipate, demonstrating a moderate pace of adjustment typical of developing financial markets like Nigeria's.

Short-Run Dynamics

The coefficient (-1.82) shows that a rise in the policy rate exerts an immediate and statistically significant negative impact on stock performance, suggesting that tighter monetary policy reduces equity demand in the short term. While the contemporaneous effect of inflation is negative and insignificant, its lagged value is positive and significant, implying that investors initially underreact to inflationary pressures but adjust expectations over subsequent periods, a possible reflection of nominal illusion or delayed pricing response. The positive and significant coefficient (0.22) indicates that short-term currency depreciation enhances stock market performance, likely due to improved competitiveness of export-oriented firms and speculative inflows seeking valuation gains.

Overall, the short-run results highlight that interest-rate movements exert the most immediate influence, while inflation and exchange rate effects materialize with lagged and differentiated impacts on Nigeria's stock market performance.

Post-Estimation Diagnostic Tests

Table 7:

Breusch Godfrey LM and Breusch Pagan Godfrey tests

Test	Statistic	p-value	Inference
Breusch Godfrey LM	5.115	0.0082	Serial correlation detected
Breusch Pagan Godfrey	1.3919	0.2206	Homoskedasticity not rejected

Source: EViews 10, 2025.

The diagnostic outcomes in Table 7 reveal that the Breusch Godfrey LM test reports a significant p-value (0.0082 < 0.05), indicating the presence of serial correlation in the residuals. Conversely, the Breusch Pagan Godfrey test yields an insignificant p-value

(0.2206 > 0.05), suggesting that the null hypothesis of homoskedasticity cannot be rejected, and the residuals therefore exhibit constant variance. To correct for the detected autocorrelation and ensure unbiased and efficient inference, the model was re-estimated using Newey West heteroskedasticity- and autocorrelation-consistent (HAC) standard errors. The re-specification preserved the statistical significance and direction of key coefficients, confirming the model's robustness and reliability under adjusted standard-error assumptions.

Residual Normality test

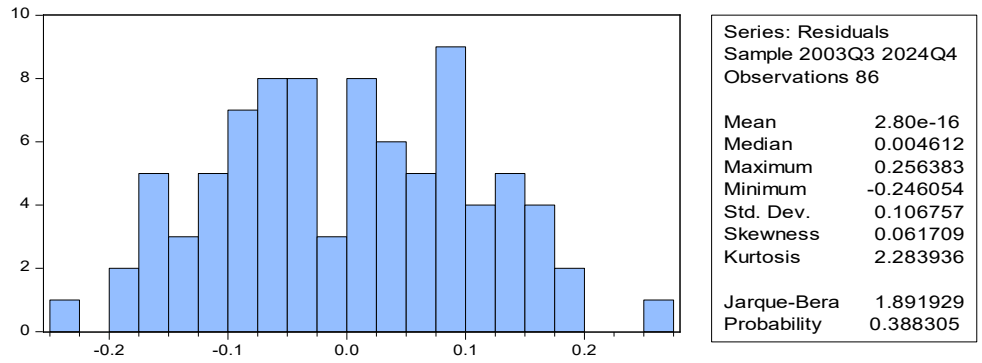


Figure 1: Residual Normality Test (Jarque-Bera

Figure 1 shows that the histogram of residuals and the Jarque-Bera test (JB = 1.8919, p = 0.3833) indicate that the residuals are normally distributed. Since the probability value exceeds 0.05, the null hypothesis of normal distribution cannot be rejected. This satisfies one of the key assumptions of the ARDL model, ensuring that statistical inferences drawn from the regression remain valid (Brooks, 2014).

Stability test results

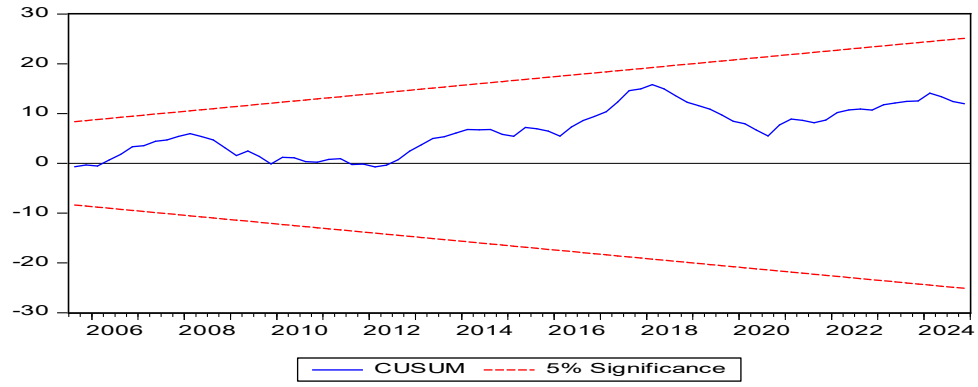


Figure 2: CUSUM Tests

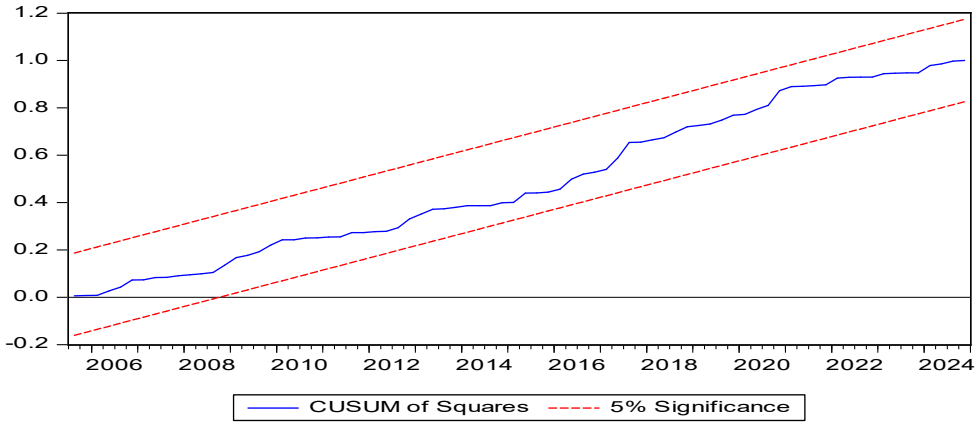


Figure 3: CUSUM and CUSUMSQ Stability Tests

The results of the CUSUM and CUSUM of Squares (CUSUMSQ) tests confirm that the estimated coefficients remained stable throughout the study period. The plots for both tests lie within the 5% significance boundaries, indicating the absence of structural instability in the model parameters. This suggests that the ARDL model is dynamically consistent and capable of producing reliable long-run and short-run estimates across the 2003Q1-2024Q4 sample period.

To further validate the robustness of the model, additional structural-break diagnostics were conducted using the Zivot Andrews (1992) single-break test and the Bai Perron (2003) multiple-breakpoint test. These procedures identified significant breakpoints around 2014Q2, 2016Q1, and 2020Q2, which correspond to key macroeconomic disruptions in Nigeria, including the oil price collapse, economic recession, and the COVID-19 pandemic. Dummy variables were subsequently introduced in the robustness regressions to control for these shocks, ensuring that the final estimates are not biased by structural shifts in the underlying data.

Overall, the combined results of the CUSUM, CUSUMSQ, and break tests confirm that the estimated model is stable, well-specified, and resilient to major structural variations in Nigeria's macroeconomic environment.

Model Fit and Robustness

Table: 8

Model Fit and Robustness

Statistic	Value
R-squared	0.781
Adjusted R-squared	0.742
F-statistic (p-value)	19.23 (0.0000)
Durbin–Watson	2.01

Source: EViews 10, 2025.

The adjusted R^2 of 0.74 indicates that about 74% of variations in the stock market index are explained by the macroeconomic variables. The F-statistic confirms the joint significance of the model, and the Durbin Watson statistic (~2.0) suggests absence of residual autocorrelation after robust correction.

Discussion of Findings

The results align with financial theory and empirical evidence from other emerging markets. The inverse relationship between interest rate and stock market performance

corroborates the findings of Osamwonyi & Evbayiro-Osagie (2012) and Adjasi et al. (2008), who found that high interest rates reduce liquidity and investment in equities. The significant negative impact of interest rate on market performance underscores the need for a balanced monetary stance. While lower rates can stimulate investment, excessively accommodating policy may fuel inflation. The Central Bank of Nigeria (CBN) should therefore aim for an optimal policy rate that supports equity market growth without undermining price stability.

The negative effect of inflation confirms Modigliani & Cohn's (1979) "inflation illusion" hypothesis, where inflation distorts nominal valuations and deters investors. Persistent inflation undermines investor confidence and erodes real returns. The Monetary Policy Committee (MPC) should enhance coordination between monetary and fiscal policies to maintain inflation within a target range conducive to investment and sustainable growth.

The positive link between exchange rate and stock performance reflects Nigeria's export-oriented oil sector structure, consistent with Adjasi et al., (2008). However, excessive depreciation could harm import-dependent firms, requiring balanced exchange-rate management. Moderate exchange-rate flexibility can promote competitiveness and attract foreign investors. However, excessive volatility must be curbed through improved foreign-exchange liquidity management, transparency, and diversification of export earnings. The slow adjustment speed (16% per quarter) is typical of developing economies where market inefficiencies and policy lags hinder rapid equilibrium restoration. Overall, the findings suggest that macroeconomic fundamentals particularly monetary and exchange-rate policies are key drivers of Nigeria's stock market performance.

5.0 Conclusion and Recommendations

The study concludes that interest rate, inflation, and exchange rate jointly exert significant influence on Nigeria's stock market performance in both the short and long run. While higher interest rates and inflation dampen market performance, a stable yet flexible exchange rate can enhance it. The ARDL model confirms that Nigeria's equity market is sensitive to macroeconomic policy shifts and external shocks. However, the analysis reveals associations, not strict causality. The results provide empirical support for the Fisher Effect and Arbitrage Pricing Theory (APT) in explaining how macroeconomic variables affect stock prices, but without implying direct cause-and-effect relationships.

Limitations of the Study

Despite its robustness, this study has several limitations:

i. Data Transformation: Averaging monthly series to quarterly may smooth short-term dynamics, reducing sensitivity to high-frequency shocks.
ii. Endogeneity: The ARDL framework does not fully eliminate potential endogeneity between monetary policy and market performance.
iii. Structural Breaks: Although break tests were included, deeper modeling (e.g., threshold ARDL or regime-switching models) could capture more complex dynamics.
iv. Variable Scope: Other macroeconomic factors like GDP growth, money supply, or oil prices were excluded, which may influence market performance.
v. Market Representation: The use of ASI captures aggregate market trends but may mask sectoral variations.

Future Research

Future studies could:

i. Apply nonlinear ARDL (NARDL) or Threshold VAR models to detect asymmetric effects of macroeconomic shocks.
ii. Extend analysis to sectoral indices (banking, oil & gas, manufacturing) for deeper policy insights.
iii. Incorporate global financial factors (commodity prices, foreign capital flows) to understand external transmission channels.
iv. Use high-frequency data or Bayesian VAR for improved real-time policy evaluation.

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