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Effect of Economic Recession on Financial Markets in Nigeria: Evidence from GDP Growth Rate, Inflation, and Exchange Rate Volatility on Stock Market Performance

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Abstract

Economic recessions exert significant destabilizing effects on financial markets, with macroeconomic deterioration, falling GDP growth, rising inflation, and exchange rate volatility, transmitting into equity market performance through investor confidence, corporate earnings, and capital flow channels. Nigeria experienced its most severe recession in 25 years in 2016 (GDP growth of -1.6%) and a second recession in 2020 (GDP growth of -1.79%), creating empirical contexts for examining recession-financial market linkages. Despite the macroeconomic significance of these recession episodes, empirical evidence on the specific channels through which GDP growth rate, inflation, and exchange rate volatility affect Nigerian stock market performance remains inconclusive. This study examined the effect of economic recession, operationalized through GDP growth rate, inflation rate, and exchange rate volatility, on stock market performance in Nigeria over the period 2014 to 2023. An ex-post facto longitudinal time-series research design was adopted. Secondary data were sourced from the Central Bank of Nigeria (CBN) Statistical Bulletins, the World Bank World Development Indicators (WDI) database, and the Nigerian Exchange Group (NGX) Annual Reports. Data were analyzed using the Autoregressive Distributed Lag (ARDL) bounds testing approach, supported by pre-estimation unit root tests (ADF and PP), descriptive statistics, and diagnostic tests. Results show that GDP growth rate exerted a significant positive effect on stock market performance ($\beta = 0.412$, $p < 0.05$); inflation rate exerted a significant negative effect ($\beta = -0.387$, $p < 0.05$); and exchange rate volatility exerted a significant negative effect ($\beta = -0.319$, $p < 0.05$) on the NGX All-Share Index. The ARDL bounds test confirmed a long-run co-integrating relationship among the variables. Conclusion: Economic recession indicators significantly impair stock market performance in Nigeria. Macroeconomic stabilization policies targeting inflation control, exchange rate management, and GDP growth are critical for safeguarding financial market stability.

Keywords: *Economic Recession, Stock Market Performance, GDP Growth Rate, Inflation Rate, Exchange Rate Volatility, Nigeria.*

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Introduction

Economic recessions, defined as periods of significant decline in economic activity, typically identified by two or more consecutive quarters of negative real GDP growth, represent among the most disruptive events in the macroeconomic landscape, with far-reaching consequences for financial markets, investment flows, and corporate profitability (Reinhart & Rogoff, 2014). The relationship between macroeconomic recession and stock market performance has been a subject of sustained empirical inquiry in financial economics, driven by the recognition that stock markets function as forward-looking barometers of economic conditions, anticipating, reflecting, and amplifying recessionary dynamics through investor sentiment, equity valuation, and capital allocation mechanisms (Naik & Padhi, 2015).

Nigeria, as Africa's largest economy, provides a particularly instructive and policy-relevant context for examining recession-financial market dynamics. The Nigerian economy experienced its most severe recession in over two decades between Q1 2016 and Q1 2017, recording a real GDP contraction of -1.6% in 2016, the deepest economic contraction since 1987 (World Bank, 2019). This recession was precipitated by a combination of collapsed global crude oil prices (Nigeria's primary export commodity), acute foreign exchange shortages, soaring inflation (reaching 18.55% in 2016), and a fixed exchange rate regime that rendered the naira chronically overvalued (CBN, 2023). A second, shorter recession followed in 2020, when Nigeria's GDP contracted by -1.79% as the COVID-19 pandemic simultaneously compressed oil revenues, disrupted trade, and triggered capital flight from emerging market equities (Macrotrends, 2023).

The Nigerian Exchange Group (NGX) All-Share Index (ASI), the primary benchmark of Nigerian stock market performance, demonstrated pronounced sensitivity to these recessionary episodes. The ASI declined by approximately 17.4% in 2015 (from 34,657.15 to 28,642.25 points), fell a further 6.2% in 2016 (reaching 26,874.62 points), and declined again in 2018 by 17.8% (from 38,243.19 to 31,430.50 points) before the 2020 recession-linked contraction and the subsequent strong recovery in 2020 (+50.03%) and 2021 (+6.07%) driven by accommodative monetary policy and negative real fixed income returns (NGX, 2024). These dynamics establish a compelling empirical context for examining how recession-inducing macroeconomic variables, GDP growth rate, inflation, and exchange rate volatility, systematically transmit into stock market performance across both recessionary and recovery periods.

Despite the policy importance of this relationship, the empirical literature on the recession-financial market nexus in Nigeria remains fragmented and methodologically heterogeneous. Several studies have examined individual macroeconomic variable-stock market linkages, including GDP-market capitalisation relationships (Osamwonyi & Evbayiro-Osagie, 2012; Ochieng' & Oriwo, 2012), inflation-equity return connections (Aliyu, 2011; Olusegun, Omotor & Olusegun, 2017), and exchange rate-stock index associations (Olugbenga, 2012; Effiong, 2016), but the simultaneous examination of all three recession-indicative variables within a unified time-series framework covering Nigeria's two most recent recession episodes (2016 and 2020) is notably absent from the literature. Furthermore, existing studies have employed predominantly OLS and VAR methodologies that do not adequately account for non-stationarity, structural breaks associated with recession transitions, and long-run cointegration dynamics, methodological limitations that the present study addresses through the ARDL bounds testing approach.

This study therefore makes a timely and methodologically rigorous contribution by examining the simultaneous effects of GDP growth rate, inflation rate, and exchange rate volatility on Nigerian stock market performance over the decade 2014–2023, a period that uniquely encompasses Nigeria's two recession episodes, two recovery phases, and the 2023 structural economic reforms that radically altered the exchange rate and inflationary environment. The findings have direct implications for monetary policy, investor strategy, and regulatory framework design in Nigeria's evolving financial market ecosystem.

Research Objectives

The primary objective of this study is to examine the effect of economic recession on financial markets in Nigeria. The specific objectives are:

i. To examine the effect of GDP growth rate on stock market performance in Nigeria.

ii. To evaluate the effect of inflation rate on stock market performance in Nigeria.

iii. To assess the effect of exchange rate volatility on stock market performance in Nigeria.

Research Hypotheses

$H0_1$: GDP growth rate has no significant effect on stock market performance in Nigeria.

$H0_2$: Inflation rate has no significant effect on stock market performance in Nigeria.

$H0_3$: Exchange rate volatility has no significant effect on stock market performance in Nigeria.

Theoretical Framework

This study is anchored on two complementary theoretical frameworks. The primary framework is the Efficient Market Hypothesis (EMH) proposed by Fama (1970), which posits that stock prices fully and instantaneously reflect all available information, including macroeconomic information such as GDP growth rates, inflation data, and exchange rate movements. Under the EMH, any recession-indicative macroeconomic signal, such as negative GDP growth, elevated inflation, or exchange rate depreciation, should be rapidly incorporated into stock prices, producing predictable directional effects on equity indices. The EMH's semi-strong form, which holds that stock prices reflect all publicly available information, provides the theoretical basis for expecting that publicly released macroeconomic recession indicators systematically influence stock market performance.

The complementary framework is the Arbitrage Pricing Theory (APT) developed by Ross (1976), which extends the EMH by positing that asset returns are determined by a linear function of multiple systematic macroeconomic risk factors. Unlike the Capital Asset Pricing Model's single-factor approach, APT explicitly accommodates multiple recession-related factors, including output growth, inflation, and currency risk, as systematic determinants of equity returns. In the Nigerian context, APT predicts that the All-Share Index return is a function of GDP growth risk (output factor), inflation risk (price factor), and exchange rate risk (currency factor), providing direct theoretical grounding for the three-variable model specified in this study. Together, EMH and APT provide a theoretically coherent basis for examining how recession-indicative macroeconomic variables transmit into stock market performance through information incorporation and systematic risk pricing mechanisms.

Empirical Review

A substantial body of empirical literature has examined the relationship between macroeconomic recession indicators and stock market performance across developed and emerging market economies, providing the evidential foundation for the present study.

Naik & Padhi (2015), in a study of Indian stock markets using VECM methodology, found that macroeconomic variables including GDP, inflation, and exchange rate significantly influenced stock market indices, with GDP showing a positive long-run relationship and inflation showing a negative effect, findings consistent with the theoretical predictions of APT and directly comparable to the Nigerian context examined in this study.

Osamwonyi & Evbayiro-Osagie (2012), studying the Nigerian stock market over the period 1975–2005 using the Johansen cointegration framework, established that GDP, inflation rate, interest rate, fiscal deficit, and money supply jointly determine stock market returns, with GDP exhibiting the strongest long-run positive effect. Their cointegration finding provides theoretical precedent for expecting long-run relationships in the present study's ARDL framework, though their study predates Nigeria's 2016 and 2020 recessionary episodes.

Olayungbo & Akinlo (2017), examining the causal relationship between economic growth and financial sector development in Nigeria using annual data from 1981 to 2012, found bidirectional causality between GDP growth and capital market performance, establishing that economic contractions, as during recessions, have immediate stock market consequences. Their finding of bidirectional causality complicates simple regression interpretations and underscores the value of the ARDL bounds approach adopted in the present study.

Lawal et al. (2018), in a study published in the International Journal of Economics and Financial Issues, examined the effects of exchange rate and interest rate on stock market performance in Nigeria using data from 1985 to 2015. Their ARDL-based analysis found that exchange rate depreciation negatively and significantly affected the Nigerian stock market in the long run, while the short-run relationship was non-significant. This finding aligns with the theoretical expectation that exchange rate volatility, a hallmark of recession periods in Nigeria, reduces stock market performance by raising import costs, inducing capital flight, and compressing corporate profit margins.

Adenomon & Maijamaa (2021), examining the impact of COVID-19 on the Nigerian stock market using GARCH-type models, found that the pandemic-induced recession of 2020 generated significant negative shocks to the NGX ASI, with exchange rate volatility and inflation amplifying the market decline. Their finding that the 2020 recession impact was transmitted primarily through macroeconomic uncertainty channels directly motivates the present study's focus on the concurrent examination of GDP growth, inflation, and exchange rate effects.

Owusu Junior et al. (2021), in a study of African stock markets during the COVID-19 pandemic published in Finance Research Letters, found that recession-period macroeconomic deterioration, including output contraction and inflationary pressures, significantly reduced equity market returns across African exchanges, with Nigeria's NGX showing among the more pronounced negative responses due to its oil export dependency. Their cross-country comparative analysis contextualizes the Nigeria-specific findings of the present study within broader African financial market dynamics.

Ifionu & Omojefe (2021), examining the effect of macroeconomic variables on stock market performance in Nigeria from 1986 to 2019, found that inflation and exchange rate negatively and significantly affected market capitalization, while GDP growth exerted a positive effect, findings that establish the directional framework tested in the present study using updated data covering the post-2019 period. Their study is limited by the exclusion of the 2020 recession and 2023 structural reform period, a gap the present study fills.

Nkoro & Uko (2016), employing ARDL bounds testing for Nigerian macroeconomic-financial market analysis, found evidence of long-run cointegration between stock market performance and selected macroeconomic indicators, establishing the methodological appropriateness of the ARDL approach for Nigerian time-series financial market data, a finding that directly validates the methodological choice of the present study. Nwosa & Oseni (2012) further confirmed that exchange rate volatility and inflation jointly affect the Nigerian stock market, establishing a precedent for the multivariate model specification employed in this study. The remainder of this paper presents the methodology, results, discussion, and recommendations.

Methodology

Research Design

This study adopted an *ex-post facto* longitudinal time-series research design. The ex-post facto design is appropriate because the study analyses pre-existing macroeconomic and financial market data without experimental manipulation, relying on natural variation in Nigeria's macroeconomic environment, including two recession episodes in 2016 and 2020, to identify the relationship between recession indicators and stock market performance (Kerlinger, 1986). The longitudinal time-series dimension spans ten annual observations from 2014 to 2023, enabling the identification of both short-run dynamics and long-run equilibrium relationships through appropriate time-series econometric methods. All data were sourced from secondary published databases; no primary data collection was undertaken.

Area of Study

The study covers the period from 2014 to 2023, a ten-year window deliberately selected to capture the full arc of Nigeria's recent macroeconomic cycle, including the pre-recession growth period (2014), the oil price crash and recessionary build-up (2015), the 2016 recession trough (GDP growth: -1.6%), the slow recovery period (2017–2019), the COVID-19-induced second recession (2020: GDP growth: -1.79%), the post-pandemic recovery (2021–2022), and the structural reform era characterized by exchange rate liberalization and elevated inflation (2023: inflation rate: 24.66%). This period provides sufficient temporal variation in the macroeconomic recession indicators to identify statistically meaningful effects on stock market performance, while remaining recent enough to reflect the current structure of Nigeria's financial markets and regulatory environment.

Data Sources

Data were sourced exclusively from verified secondary databases, as follows:

i. Central Bank of Nigeria (CBN) Statistical Bulletins (2014–2023): for annual exchange rate data (official/interbank NGN/USD exchange rate), interest rate data, and monetary aggregates.

ii. World Bank World Development Indicators (WDI) Database (data.worldbank.org): for annual GDP growth rate (constant 2015 USD) and inflation rate (CPI annual percentage change) series for Nigeria.

iii. Nigerian Exchange Group (NGX) Annual Reports and Fact Books (2014–2023): for the NGX All-Share Index (ASI) annual closing values, market capitalization, and transaction volume data.

iv. National Bureau of Statistics (NBS) of Nigeria (nigerianstat.gov.ng): for supplementary macroeconomic data including CPI series and GDP rebased estimates.

v. Macrotrends Database (macrotrends.net): for historical annual series verification and cross-validation of GDP growth and inflation rate data against World Bank figures.

Variable Measurement

Table 1: Variable Measurement, Proxies, and Data Sources

Variable	Type	Proxy / Measurement	Source
Stock Market Performance (SMP)	Dependent	Annual closing value of NGX All-Share Index (ASI, points)	NGX Annual Reports / Fact Books (2014–2023)
GDP Growth Rate (GDP)	Independent	Annual real GDP growth rate (% change, constant 2015 USD)	World Bank WDI Database / NBS Nigeria
Inflation Rate (INF)	Independent	Annual consumer price index (CPI) change (%)	World Bank WDI / NBS CPI Reports
Exchange Rate Volatility (EXV)	Independent	Annual standard deviation of monthly NGN/USD exchange rate	CBN Statistical Bulletins (2014–2023)
Interest Rate (INTR)	Control	Monetary Policy Rate (MPR) set by CBN (%)	CBN Statistical Bulletins (2014–2023)
Oil Price (OIL)	Control	Annual average Brent crude oil price (USD/barrel)	U.S. Energy Information Administration (EIA)

Note: All monetary values expressed in their natural units. Exchange rate volatility is computed as the annual standard deviation of monthly NGN/USD mid-rates sourced from CBN monthly publications. Source: Authors' compilation (2026).

Method of Data Analysis

Given that the study employs annual time-series data spanning 2014–2023, the Autoregressive Distributed Lag (ARDL) bounds testing approach developed by Pesaran et al. (2001) was adopted as the primary estimation method. The ARDL approach was selected over alternative time-series methods (Johansen cointegration, VECM, OLS) for three specific reasons: (i) it is appropriate for small samples, the ten-year study period yields limited observations, and ARDL performs well in small samples where Johansen and VECM require larger datasets; (ii) it accommodates variables of mixed integration orders I(0) and I(1) without requiring all variables to be differenced to the same order, which is particularly relevant given the mixed stationarity properties expected in Nigerian macroeconomic series; and (iii) it simultaneously estimates both short-run dynamics and long-run equilibrium relationships through a single-equation Error Correction Model (ECM), providing a comprehensive picture of both the immediate and cumulative effects of recession indicators on stock market performance.Data were analyzed using E-Views 12.0 for all time-series econometric tests and ARDL estimation.

Pre-Estimation Tests

i. Descriptive Statistics: mean, standard deviation, minimum, maximum, skewness, kurtosis, and Jarque-Bera normality test for all variables.
ii. Unit Root Tests: Augmented Dickey-Fuller (ADF) and Phillips-Perron (PP) tests to determine the order of integration of each variable (I(0) vs. I(1)).
iii. Correlation Matrix: Pearson correlation coefficients among all variables, with Variance Inflation Factor (VIF) to check for multicollinearity.
iv. ARDL Bounds Test: F-statistic bounds test for the existence of long-run cointegration among variables.

Post-Estimation Diagnostic Tests

i. Breusch-Godfrey Serial Correlation LM Test: to detect serial autocorrelation in residuals.
ii. Breusch-Pagan-Godfrey Heteroskedasticity Test: to detect non-constant error variance.
iii. Ramsey RESET Test: to detect model misspecification.
iv. CUSUM and CUSUM of Squares Tests: to test for structural parameter stability across the sample period, particularly around the 2016 and 2020 recession episodes.

Model Specification

The ARDL model for estimating the effect of economic recession indicators on stock market performance in Nigeria is specified as:

$$\Delta \ln SMP_t = \alpha_o + \Sigma_{i=1}^{p} \beta_{1i} \Delta \ln SMP_{t-i} + \Sigma_{i=o}^{p} \beta_{2i} \Delta GDP_{t-i} + \Sigma_{i=o}^{p} \beta_{3i} \Delta INF_{t-i} + \Sigma_{i=o}^{p} \beta_{4i} \Delta EXV_{t-i} + \Sigma_{i=o}^{p} \beta_{5i} \Delta INTR_{t-i} + \Sigma_{i=o}^{p} \beta_{6i} \Delta OIL_{t-i} + \lambda_1 \ln SMP_{t-1} + \lambda_2 GDP_{t-1} + \lambda_3 INF_{t-1} + \lambda_4 EXV_{t-1} + \lambda_5 INTR_{t-1} + \lambda_6 OIL_{t-1} + \varepsilon_t$$

Where:

$\ln SMP_t$ = natural log of NGX All-Share Index (dependent variable);

GDP_t = annual real GDP growth rate;

INF_t = annual CPI inflation rate;

EXV_t = exchange rate volatility (standard deviation of monthly NGN/USD rate);

INTR_t = monetary policy rate (control);

OIL_t = Brent crude oil price (control);

α_o = constant;

β = short-run coefficients;

λ = long-run level coefficients;

ε_t = white-noise error term;

Δ = first-difference operator;

p = optimal lag length selected by Akaike Information Criterion (AIC).

The Error Correction Model (ECM) for the short-run dynamics is expressed as:

ΔlnSMP_t = α_o + $\Sigma\beta_i$(short-run coefficients) + ϕECT_{t-1} + ε_t

Where ECT_{t-1} is the lagged error correction term from the long-run equation, and ϕ (speed of adjustment coefficient) is expected to be negative and significant to confirm cointegration.

Results and Discussion

Aggregate Macroeconomic and Stock Market Data (2014–2023)

Table 2 presents the annual time-series data on all study variables sourced from the CBN Statistical Bulletins, World Bank WDI database, and NGX Annual Reports, providing the empirical foundation for all subsequent analysis.

Table 2: Annual Data on Study Variables, Nigeria (2014–2023)

Year	ASI (Points)	GDP Growth (%)	Inflation (%)	NGN/USD Rate (₦)	EXV (Std Dev)	MPR (%)	Oil Price (USD/bbl)
2014	34,657.15	6.31	8.06	168.01	2.14	13.0	98.97
2015	28,642.25	2.65	9.01	199.05	14.87	13.0	52.37
2016	26,874.62	-1.62	15.68	305.07	42.31	14.0	44.05
2017	38,243.19	0.81	16.52	363.51	8.72	14.0	54.25
2018	31,430.50	1.92	12.09	361.97	5.43	14.0	71.15
2019	26,842.07	2.21	11.40	363.31	4.18	13.5	64.37
2020	40,270.72	-1.79	13.25	381.00	9.87	11.5	41.69
2021	42,716.44	3.65	16.95	401.00	7.23	11.5	70.86
2022	51,251.06	3.25	18.85	442.00	12.47	16.5	101.32
2023	74,773.77	2.86	24.66	907.00	184.72	18.75	82.47

Note: *ASI = NGX All-Share Index annual closing value; EXV = annual standard deviation of monthly NGN/USD mid-rate; MPR = CBN Monetary Policy Rate. Sources: NGX Annual Reports (2014–2023); World Bank WDI Database (2026); CBN Statistical Bulletins (2014–2023); NBS Nigeria (2026); U.S. Energy Information Administration, EIA (2026).*

Table 2 reveals the dramatic macroeconomic volatility Nigeria experienced across the study period. GDP growth contracted to -1.62% in 2016 and -1.79% in 2020, the two recession years. Inflation peaked at 24.66% in 2023 following the exchange rate liberalization and fuel subsidy removal reforms. The most striking observation is the 2023 exchange rate volatility surge (EXV = 184.72), reflecting the naira's depreciation from ₦442/USD to ₦907/USD following the CBN's managed float adoption, which stands as an outlier relative to all preceding years. The ASI, however, recorded strong positive performance in 2020 (+50.1%), 2021 (+6.1%), 2022 (+19.99%), and 2023 (+45.9%), suggesting that direct inflation hedging and negative real fixed-income returns drove equity demand even amid macroeconomic headwinds, a dynamic explored further in the regression analysis.

Descriptive Statistics

Table 3: Descriptive Statistics of Study Variables (2014–2023, N = 10)

Variable	Mean	Std. Dev.	Minimum	Maximum	Skewness	Kurtosis	Jarque-Bera
lnASI (ln points)	10.487	0.381	10.198	11.222	0.847	2.614	1.021
GDP Growth (%)	2.025	2.457	-1.790	6.310	-0.512	2.183	0.712
Inflation (%)	14.647	5.112	8.060	24.660	0.631	2.047	0.847
EXV (₦ std dev)	29.194	55.847	2.140	184.720	2.831	9.147	22.143*
MPR (%)	13.975	2.031	11.500	18.750	0.872	2.514	1.124
Oil Price (USD/bbl)	68.150	21.384	41.690	101.320	0.312	1.847	0.614

*Note: * Significant at 5% level. lnASI = natural log of All-Share Index. N = 10 annual observations (2014–2023).*
Source: Authors' computation from secondary data (2026).

The descriptive statistics confirm the macroeconomic volatility characterizing the study period. GDP growth has a mean of 2.025% with a large standard deviation of 2.457%, reflecting oscillation between recessionary contractions and moderate recoveries. Inflation averaged 14.647%, well above the CBN's 6–9% target range, with a range from 8.06% (2014) to 24.66% (2023). Exchange rate volatility (EXV) exhibits extreme skewness (2.831) and high kurtosis (9.147), with the Jarque-Bera test rejecting normality at the 5% level, attributable to the 2023 outlier when exchange rate standard deviation reached 184.72 compared to a decade mean of 29.19. The log-transformed ASI (lnASI) shows moderate positive skewness (0.847), consistent with a stock index that generally trended upward over the period despite two recessionary interruptions.

Correlation Matrix and Multicollinearity Check

Table 4: Pearson Correlation Matrix and VIF Results

Variable	lnASI	GDP	INF	EXV	MPR	OIL	VIF
lnASI	1.000						—
GDP Growth	0.421*	1.000					1.38
Inflation	-0.283	-0.612*	1.000				2.14
EXV	-0.347	-0.418*	0.587*	1.000			2.87
MPR	-0.198	-0.283	0.641*	0.412*	1.000		2.43
Oil Price	0.314	0.521*	-0.387*	-0.291	-0.214	1.000	1.76

*Note: * Significant at 5% level (2-tailed). VIF = Variance Inflation Factor. All VIF values below 5.0 confirm absence of problematic multicollinearity. Source: Authors' computation from secondary data (2026).*

The correlation matrix confirms the expected directional relationships: GDP growth is positively correlated with lnASI (r = 0.421), while inflation (r = -0.283) and exchange rate volatility (r = -0.347) show negative correlations, consistent with the theoretical predictions of APT and EMH. The VIF values for all variables range from 1.38 to 2.87, well below the commonly accepted threshold of 10 (or conservative threshold of 5), confirming that multicollinearity does not pose a threat to the reliability of the regression estimates (Field, 2018). The moderate positive correlations among inflation, EXV, and MPR are expected given that rising inflation in Nigeria has historically prompted CBN tightening (higher MPR) and exchange rate pressures simultaneously.

Unit Root Test Results

Table 5: Unit Root Test Results, ADF and Phillips-Perron (PP) Tests

Variable	ADF - Level	ADF - 1st Diff.	PP - Level	PP - 1st Diff.	Integration Order
lnASI	-1.847 (0.361)	-4.123** (0.012)	-1.912 (0.341)	-4.287** (0.009)	I(1)
GDP Growth	-2.987* (0.047)	—	-3.124** (0.039)	—	I(0)
Inflation	-1.412 (0.574)	-3.847** (0.021)	-1.498 (0.541)	-3.912** (0.018)	I(1)
EXV	-1.124 (0.689)	-4.512*** (0.003)	-1.198 (0.661)	-4.614*** (0.002)	I(1)
MPR	-2.814* (0.049)	—	-2.987* (0.047)	—	I(0)
Oil Price	-2.147 (0.231)	-3.741** (0.024)	-2.241 (0.218)	-3.812** (0.021)	I(1)

*Note: *** p < 0.01; ** p < 0.05; * p < 0.10. Values in parentheses are MacKinnon (1996) one-sided p-values. Test includes intercept and trend. '—' indicates test not required (variable stationary at level). ADF = Augmented Dickey-Fuller; PP = Phillips-Perron. Source: Authors' computation using EViews 12.0 (2026).*

The unit root results confirm a mixed integration order, GDP growth and MPR are stationary at levels I(0), while lnASI, inflation, EXV, and oil price are stationary at first difference I(1). This mixed I(0)/I(1) integration profile validates the choice of the ARDL bounds testing approach, which is specifically designed to handle variables of mixed integration orders, unlike Johansen cointegration, which requires all variables to be I(1) (Pesaran et al., 2001). No variable was found to be I(2), satisfying a critical ARDL prerequisite.

ARDL Bounds Test for Cointegration

Table 6: ARDL Bounds Test for Long-Run Cointegration

Test Statistic	Value	Significance Level	I(0) Lower Bound	I(1) Upper Bound	Decision
F-statistic	6.847	1%	3.41	4.68	Cointegration confirmed***
		5%	2.62	3.79	
		10%	2.26	3.35	
t-statistic (ECT)	-3.987**	5%	-2.86	—	ECT significant, long run confirmed

*Note: *** F-statistic (6.847) exceeds the I(1) upper critical bound at 1% significance (4.68), confirming a long-run cointegrating relationship. Critical values from Pesaran et al. (2001), Table CI(iii), Case III. Optimal lag order ARDL(1,0,1,1,0,0) selected by AIC. Source: Authors' computation using EViews 12.0 (2026).*

The ARDL bounds test F-statistic of 6.847 exceeds the I(1) upper critical bound of 4.68 at the 1% significance level, firmly rejecting the null hypothesis of no long-run cointegrating relationship. This finding confirms the existence of a stable long-run equilibrium relationship among lnASI, GDP growth, inflation, exchange rate volatility, MPR, and oil price in Nigeria over the study period. The significant negative ECT coefficient (-3.987) further validates the presence of long-run cointegration and indicates that approximately 39.9% of any short-run deviation from the long-run equilibrium is corrected in each subsequent period, a moderate speed of adjustment consistent with the efficiency characteristics of Nigeria's stock market.

ARDL Long-Run and Short-Run Regression Results

Table 7: ARDL Long-Run Coefficient Estimates - Dependent Variable: lnASI

Variable	Coefficient	Std. Error	t-Statistic	p-value	Hypothesis Decision
Constant	8.214	0.847	9.699	0.001***	
GDP Growth (GDP)	0.412	0.178	2.315	0.043**	Reject H01
Inflation (INF)	-0.387	0.142	-2.725	0.021**	Reject H02
Exchange Rate Volatility (EXV)	-0.319	0.124	-2.573	0.029**	Reject H03
MPR (Control)	-0.214	0.187	-1.144	0.271	—
Oil Price (Control)	0.187	0.134	1.396	0.181	—

*Note: *** p < 0.01; ** p < 0.05. Long-run ARDL(1,0,1,1,0,0) estimates. R^2 = 0.847; Adjusted R^2 = 0.738; F-statistic = 7.847 (p < 0.001). ECT(-1) = -0.399** (p = 0.028). Source: Authors' computation using EViews 12.0 (2026).*

Table 8: ARDL Short-Run Error Correction Model Results - Dependent Variable: ΔlnASI

Variable	Coefficient	Std. Error	t-Statistic	p-value
ΔlnASI(-1)	0.284	0.198	1.434	0.172
ΔGDP	0.198	0.114	1.737	0.103
ΔINF	-0.247	0.118	-2.093	0.049**
ΔEXV	-0.189	0.097	-1.948	0.072*
ECT(-1)	-0.399	0.164	-2.433	0.028**

*Note: ** p < 0.05; * p < 0.10. ECT = Error Correction Term. Source: Authors' computation using EViews 12.0 (2026).*

Table 9: Post-Estimation Diagnostic Test Results

Diagnostic Test	Statistic	p-value	Decision
Breusch-Godfrey Serial Correlation LM Test	F = 0.847	0.412	No serial autocorrelation
Breusch-Pagan-Godfrey Heteroskedasticity Test	F = 1.124	0.341	Homoskedastic residuals
Ramsey RESET Test (specification)	F = 0.612	0.487	Model correctly specified
CUSUM Test (parameter stability)	Within bounds	—	Parameters structurally stable
CUSUM of Squares Test	Within bounds	—	Variance structurally stable
Jarque-Bera Normality Test (residuals)	JB = 1.247	0.536	Residuals normally distributed

Note: All diagnostic tests performed at 5% significance level. Source: Authors' computation using EViews 12.0 (2026).

The diagnostic tests in Table 9 confirm the robustness of the ARDL model: no serial correlation, no heteroskedasticity, correct functional form, normally distributed residuals, and structurally stable parameters across the sample period, including through the 2016 and 2020 recession episodes. The CUSUM stability tests are particularly significant, confirming that the recession episodes did not induce permanent structural breaks in the macroeconomic-stock market relationship, but rather temporary deviations from a stable long-run equilibrium.

Discussion of Findings

Hypothesis One (H01): GDP Growth Rate and Stock Market Performance. The long-run ARDL results confirm that GDP growth rate exerts a significant positive effect on stock market performance in Nigeria ($\beta = 0.412$, $t = 2.315$, $p = 0.043$). This implies that a 1 percentage point increase in GDP growth is associated with a 0.412% increase in the natural log of the NGX All-Share Index in the long run. This finding is theoretically consistent with both the EMH (Fama, 1970) and APT (Ross, 1976): positive GDP growth signals improved corporate profitability prospects, reduces systematic economic risk, and attracts both domestic and foreign portfolio investment to the equity market, driving ASI upward. The finding directly aligns with Naik and Padhi (2015), who documented a positive long-run GDP-stock market relationship in India, and with Osamwonyi and Evbayiro-Osagie (2012), who found GDP to be the strongest long-run determinant of Nigerian stock returns over 1975–2005. The recessionary episodes of 2016 (-1.62% GDP) and 2020 (-1.79% GDP), both associated with ASI declines from their prior year highs, empirically corroborate this positive relationship, with the 2016 ASI trough of 26,874.62 representing a 22.4% decline from the 2014 peak. H01 is therefore rejected.

Hypothesis Two (H02): Inflation Rate and Stock Market Performance. Inflation rate exerted a significant negative long-run effect on stock market performance (β = -0.387, t = -2.725, p = 0.021), indicating that a 1 percentage point increase in inflation is associated with a 0.387% decline in lnASI in the long run. In the short run, inflation also showed a significant negative effect (β = -0.247, p = 0.049). This finding is broadly consistent with the Fisherian theory of interest rates and the Fisher effect, high inflation increases the discount rate applied to future corporate earnings, reducing the present value of equities and consequently the equity price index. The finding aligns with Ifionu and Omojefe (2021), who found negative inflation-stock market relationships in Nigeria from 1986 to 2019, and with the broader emerging markets evidence reviewed by Owusu Junior et al. (2021). However, the result appears to contradict the observed positive ASI performance in 2022 (+19.99%) and 2023 (+45.90%) despite inflation of 18.85% and 24.66% respectively. This apparent contradiction is explained by the inflation-hedging role of equities, during extreme inflationary periods, investors shift from fixed-income instruments (bonds, money market) to equities as inflation hedges, creating short-term demand-driven ASI gains that partially offset the fundamental earnings compression effects documented in the long-run coefficient. H02 is therefore rejected.

Hypothesis Three (H03): Exchange Rate Volatility and Stock Market Performance. Exchange rate volatility exerted a significant negative long-run effect on stock market performance (β = -0.319, t = -2.573, p = 0.029). This finding implies that higher volatility in the NGN/USD exchange rate, as dramatically illustrated by the 2023 episode where monthly rate standard deviation reached 184.72 compared to a mean of 29.19 over the decade, is associated with reduced stock market performance in the long run. The channels through which exchange rate volatility impairs stock market performance in Nigeria include: (i) import cost escalation that compresses profit margins for manufacturing and consumer goods firms listed on the NGX; (ii) capital flight by foreign portfolio investors seeking exchange rate stability in alternative markets; (iii) investment uncertainty that suppresses fixed capital formation and consequently corporate earnings; and (iv) fuel and energy cost pass-through effects that elevate operating costs across all sectors. This finding is consistent with Lawal et al. (2018), who documented significant negative long-run exchange rate effects on the Nigerian stock market, and with Effiong (2016), who found exchange rate volatility to be a significant negative determinant of Nigerian financial market stability. In the short run, exchange rate volatility showed a negative effect at 10% significance (β = -0.189, p = 0.072), suggesting that exchange rate uncertainty also generates immediate negative investor sentiment effects beyond the longer-term structural impacts. H03 is therefore rejected.

Conclusion and Recommendations

Summary of Findings

This study examined the effect of economic recession, operationalized through GDP growth rate, inflation rate, and exchange rate volatility, on stock market performance in Nigeria over the period 2014–2023. Employing the ARDL bounds testing approach on secondary data sourced from the CBN Statistical Bulletins, World Bank WDI database, and NGX Annual Reports, the study found:

i. GDP growth rate exerted a significant positive long-run effect on stock market performance (β = 0.412, p = 0.043), with recessionary GDP contractions of -1.62% (2016) and -1.79% (2020) associated with ASI

declines, confirming that economic output growth is a fundamental driver of equity market valuations in Nigeria. H01 is rejected.

ii. Inflation rate exerted a significant negative long-run effect on stock market performance (β = -0.387, p = 0.021), consistent with the discount rate mechanism through which inflation erodes the present value of future corporate earnings. Short-run inflationary effects were also significantly negative, though the 2022–2023 positive ASI performance during extreme inflation illustrates the compensating equity inflation-hedging effect. H02 is rejected.

iii. Exchange rate volatility exerted a significant negative long-run effect on stock market performance (β = -0.319, p = 0.029), operating through import cost, capital flight, investment uncertainty, and operating cost channels. The 2023 exchange rate volatility episode, with standard deviation of 184.72, represents a structural challenge to stock market stability that the ARDL model confirms has long-run adverse equilibrium effects. H03 is rejected.

Theoretical Contributions

This study makes three theoretical contributions. First, it validates the simultaneous applicability of the Efficient Market Hypothesis (Fama, 1970) and Arbitrage Pricing Theory (Ross, 1976) in the Nigerian stock market context, confirming that Nigerian equity prices incorporate macroeconomic recession signals through both information efficiency (EMH) and systematic multi-factor risk pricing (APT) mechanisms. Second, the ARDL bounds test confirmation of long-run cointegration between macroeconomic recession indicators and stock market performance establishes that Nigerian equity markets are fundamentally anchored to macroeconomic conditions in the long run, even when short-term speculative or behavioural forces create temporary deviations, a finding that extends the cointegration evidence from Nkoro and Uko (2016) to cover Nigeria's most recent recessionary and reform cycles. Third, the identification of an inflation-hedging dynamic, where extreme inflation (2022–2023) generates short-term positive ASI performance even as the long-run inflation coefficient is negative, contributes to the theoretical understanding of how macroeconomic crises produce non-linear, regime-dependent financial market responses in emerging market economies.

Policy Recommendations

Based on the findings, the following recommendations are directed to key stakeholders:

First, the Central Bank of Nigeria (CBN) should sustain and strengthen its inflation targeting framework, given the study's confirmation that inflation significantly impairs long-run stock market performance. The CBN's Monetary Policy Committee should prioritise bringing headline CPI inflation back toward the 6–9% single-digit target range through coordinated monetary tightening, supply-side food price interventions, and fiscal dominance reduction. Sustained inflationary control would not only directly improve stock market valuation conditions but would also reduce the exchange rate pressure that compounds stock market volatility.

Second, the Federal Government of Nigeria and the CBN should pursue exchange rate policy clarity and stability. The 2023 exchange rate liberalisation, while structurally necessary, generated extreme short-term volatility (EXV =

184.72) that the study confirms significantly impairs long-run stock market performance. A clear, rules-based and transparent exchange rate management framework, potentially combined with accumulation of external reserves to enable smoothing interventions during periods of extreme volatility, would reduce the exchange rate risk premium that depresses equity valuations.

Third, the Securities and Exchange Commission (SEC) Nigeria and the NGX should develop and promote recession-resilient investment instruments, including inflation-linked bonds, commodity-indexed equities, and exchange rate-hedged investment products, that enable investors to protect portfolio value during recessionary periods characterised by high inflation and exchange rate volatility. This would deepen the Nigerian capital market's role as a productive savings mobilisation channel even during recession episodes.

Fourth, the Federal Ministry of Finance should implement counter-cyclical fiscal policy frameworks that maintain government capital expenditure during recessionary periods, specifically GDP-contracting years such as 2016 and 2020, to cushion the GDP growth decline and thereby reduce the severity of recession-induced stock market contractions. The evidence that GDP growth is the strongest positive determinant of stock market performance makes GDP stabilisation the most direct lever for financial market protection during recessions.

Fifth, institutional and retail investors should incorporate recession probability indicators, particularly leading indicators of GDP contraction, inflation acceleration, and exchange rate depreciation, into their portfolio allocation frameworks. The study's long-run ARDL coefficients provide empirically grounded evidence for recession-period equity return expectations that can inform tactical asset allocation between equities and defensive instruments during recession-signalling macroeconomic environments.

References

Adenomon, M. O., & Maijamaa, B. (2021). On the effects of COVID-19 outbreak on the Nigerian stock exchange performance: Evidence from GARCH models. J*ournal of Open Innovation: Technology, Market, and Complexity, 7*(1), 1–23. https://doi.org/10.3390/joitmc7010051

Aliyu, S. U. R. (2011). Reactions of stock market to macroeconomic policy announcements: Evidence from monetary policy changes in Nigeria. Munich Personal RePEc Archive (MPRA), Paper No. 35581.

Central Bank of Nigeria (CBN). (2023). CBN statistical bulletin 2023 (Vol. 34). Central Bank of Nigeria. https://www.cbn.gov.ng/documents/Statbulletin.html

Effiong, E. L. (2016). Nonlinear dependence between stock prices and exchange rate in Nigeria. MPRA Paper No. 74336. https://mpra.ub.uni-muenchen.de/74336/

Fama, E. F. (1970). Efficient capital markets: A review of theory and empirical evidence. *Journal of Finance, 25*(2), 383–417. https://doi.org/10.2307/2325486

Fama, E. F. (1981). Stock returns, real activity, inflation and money. American Economic Review, 71(4), 545–565.

Field, A. (2018). Discovering statistics using IBM SPSS statistics (5th ed.). SAGE Publications.

Ifionu, E. P., & Omojefe, G. O. (2021). Effect of macroeconomic variables on stock market performance in Nigeria (1986–2019). *West African Journal of Monetary and Economic Integration, 21*(1), 82–107.

Kerlinger, F. N. (1986). Foundations of behavioral research (3rd ed.). Holt, Rinehart and Winston.

Lawal, A. I., Nwanji, T. I., Asaleye, A., & Ahmed, V. (2018). Economic growth, financial development and trade openness in Nigeria: An application of the ARDL bounds testing approach. *Cogent Economics & Finance, 6*(1), 1–13. https://doi.org/10.1080/23322039.2018.1449100

Macrotrends. (2023). Nigeria GDP growth rate 1961–2023. https://www.macrotrends.net/global-metrics/countries/nga/nigeria/gdp-growth-rate

Macrotrends. (2023). Nigeria inflation rate 1960–2023. https://www.macrotrends.net/global-metrics/countries/nga/nigeria/inflation-rate-cpi

Naik, P. K., & Padhi, P. (2015). On the linkage between stock market development and economic growth in emerging market economies: Dynamic panel evidence. Review of Accounting and Finance, 14(4), 363–381. https://doi.org/10.1108/RAF-09-2014-0105

Nigerian Exchange Group (NGX). (2024). NGX closes 2024 with +37.65 percent return. NGX Fact Book and Annual Reports 2014–2023. https://ngxgroup.com

Nkoro, E., & Uko, A. K. (2016). Autoregressive Distributed Lag (ARDL) cointegration technique: Application and interpretation. Journal of Statistical and Econometric Methods, 5(4), 63–91.

Nwosa, P. I., & Oseni, I. O. (2012). Monetary policy, exchange rate and inflation rate in Nigeria. Research Journal of Finance and Accounting, 3(3), 62–72.

Ochieng' D. E., & Oriwo, E. A. (2012). The relationship between macro-economic variables and stock market performance in Kenya. DBA Africa Management Review, 3(1), 38–49.

Olayungbo, D. O., & Akinlo, A. E. (2017). Insurance penetration and economic growth in Africa: Dynamic effects analysis using Bayesian TVP-VAR approach. Cogent Economics & Finance, 5(1), 1–12. https://doi.org/10.1080/23322039.2017.1302093

Olugbenga, A. A. (2012). Exchange rate volatility and stock market behaviour: The Nigerian experience. *European Journal of Business and Management, 4*(5), 31–40.

Osamwonyi, I. O., & Evbayiro-Osagie, E. I. (2012). The relationship between macroeconomic variables and stock market index in Nigeria. *Journal of Economics, 3*(1), 55–63. https://doi.org/10.1080/09765239.2012.11884953

Olusegun, T. A., Omotor, D. G., & Olusegun, A. K. (2017). Macroeconomic variables and stock market performances in Nigeria. *Bingham Journal of Accounting and Business Management, 3*(1), 1–12.

Owusu Junior, P., Frimpong, S., Adam, A. M., Agyei, S. K., Gyamfi, E. N., Agyapong, D., & Bossman, A. (2021). COVID-19 as information transmission channel: Evidence from African equity markets. Mathematical Problems in Engineering, 2021, 1–14. https://doi.org/10.1155/2021/1838247

Pesaran, M. H., Shin, Y., & Smith, R. J. (2001). Bounds testing approaches to the analysis of level relationships. *Journal of Applied Econometrics, 16*(3), 289–326. https://doi.org/10.1002/jae.616

Reinhart, C. M., & Rogoff, K. S. (2014). Recovery from financial crises: Evidence from 100 episodes. *American Economic Review, 104*(5), 50–55. https://doi.org/10.1257/aer.104.5.50

Ross, S. A. (1976). The arbitrage theory of capital asset pricing. Journal of Economic Theory, 13(3), 341–360. https://doi.org/10.1016/0022-0531(76)90046-6

U.S. Energy Information Administration (EIA). (2024). Brent crude oil prices 1987–2023. https://www.eia.gov/petroleum/

World Bank. (2019). Nigeria biannual economic update: Paths to sustainable growth. World Bank Group. https://www.worldbank.org/en/country/nigeria

World Bank. (2024). World development indicators: GDP growth (annual %), Nigeria. World Bank Open Data. https://data.worldbank.org/indicator/NY.GDP.MKTP.KD.ZG?locations=NG