MACROECONOMIC RISK FACTORS AND STOCK MARKET RETURNS IN NIGERIA: EVIDENCE FROM ARDL AND TODA-YAMAMOTO CAUSALITY APPROACHES

Enitan O. Olurin[1] Joshua O. Omokehinde[2], Olurotimi B. Ajibola[3]

[1]Department of Accounting and Finance, Mountain Top University, Ibafo, Ogun State
[2]Department of Accounting and Finance, Mountain Top University, Ibafo, Ogun State
[3]Department of Banking and Finance,Yaba College of Technology, Yaba, Lagos.

ABSTRACT

This study re-examines the determinants of stock market returns in Nigeria using a parsimonious econometric framework that integrates the Autoregressive Distributed Lag (ARDL) model with the Toda–Yamamoto–Dolado–Lütkepohl (TYDL) causality approach. Annual data from 1985 to 2024 are analysed to capture both long-run relationships and short-run dynamic effects among major macroeconomic and financial variables. Stock returns are measured using a logarithmic transformation to ensure variance stability. The ARDL results revealed that only inflation exerts a statistically significant positive long-run effect on SMR, while other macroeconomic variables were found to be insignificant in both the long run and short run. The error correction mechanism confirmed the existence of a stable long-run relationship, although the adjustment process exhibited overshooting behaviour. The TYDL causality results further indicated that the Treasury bill rate Granger-causes SMR, while most other macroeconomic variables do not exhibit significant causal influence. In addition, strong interrelationships were observed among macroeconomic variables, particularly between inflation and interest rate, as well as oil price and exchange rate, while SMR remained largely weakly endogenous within the system. The findings suggest that stock market performance in Nigeria is not broadly driven by conventional macroeconomic fundamentals but is instead influenced by a limited number of key variables, particularly inflation and interest rate signals. The study concludes that macroeconomic transmission to the stock market is selective and constrained, with behavioural and structural factors likely playing a significant role in shaping market outcomes. The study recommends stronger monetary policy transmission, improved market efficiency, and enhanced institutional frameworks to strengthen the responsiveness of the stock market to macroeconomic conditions.

Keywords:Autoregressive model, Exchange Rate Dynamics, Granger Causality (TYDL), Macroeconomic Indicators, and Stock Market Returns

1. INTRODUCTION

The Nigerian stock market is a vital component of the country's financial system, serving as a platform for capital formation, investment diversification, and channelling savings into productive enterprises. By enabling publicly-listed firms to raise equity capital and investors to realise returns from both dividends and price appreciation, the stock market provides an essential mechanism for economic growth and development. In Nigeria, the performance of the stock market is intimately linked with macroeconomic conditions broad-based variables such as inflation, interest rates, exchange rate movements, money supply, and gross domestic product (GDP) growth play salient roles in shaping the behaviour of stock returns.

Understanding how these macroeconomic determinants affect stock market returns is of high importance for several reasons. For investors, a sound grasp of the macro-financial linkages supports portfolio allocation decisions, risk management, and market timing strategies. For policymakers and regulators, monitoring key macro variables can inform capital market policy, monetary and fiscal interventions, and regulatory oversight aimed at fostering market stability, liquidity, and investor confidence. For financial analysts and academics, mapping the dynamic interplay between macro-financial variables and equity returns enriches the literature on emerging markets and informs the modelling of stock market behaviour under varying economic regimes

A wide body of empirical research has explored how inflation, interest rates, exchange rates, money supply (monetary aggregates), and GDP growth influence stock market performance. In the Nigerian context, several studies have produced mixed results, underscoring the complexity of the stock-market/macro-economy nexus.

For example, recent work by Ibekwe (2023) on the Nigerian equity market covering 1999-2021 found that inflation and GDP growth had significant and negative effects on

the All-Share Index in both the short and long run, whereas interest and exchange rates were not significant drivers. Similarly, a 2024 study by Evbayiro-Osagie et al., which utilised data from 1987-2022 and applied an ARDL framework, reported that macro-variables (money supply, exchange rate, inflation, etc.) had a significant impact on stock returns, and recommended, amongst other things, that the government prioritise price stability and manage interest and exchange rates carefully.

More recently, research by Jacob and Udo (2022) found that GDP growth, broad money supply, exchange rate, and savings interest rate positively affected stock market performance in Nigeria, while inflation had a negative effect. This heterogeneous pattern of findings, some variables positively associated, others negatively, and with varying levels of statistical significance, reflects the intricacies of the Nigerian capital market environment.

The macroeconomic landscape in Nigeria has noticeably evolved in recent years. According to the African Development Bank, Nigeria's inflation rate rose to 24.5 % in 2023 from 18.8 % in 2022, while the naira underwent a major depreciation following the June 2023 float, leading to elevated exchange-rate volatility, tighter monetary policy, and slower GDP growth (2.9 % in 2023) than in previous years. These developments have important implications for the equity market: heightened inflation erodes real returns, sharp currency movement affects foreign investor sentiment, and monetary tightening (via higher policy rates) raises discount rates for equities.

Major policy shifts such as the removal of fuel subsidies, currency devaluation and reform of importation regimes under the administration of Bola Tinubu have transformed macro-financial interactions in Nigeria. The removal of subsidies has triggered higher consumer prices; the free-floating naira has introduced increased exchange risk; and monetary authorities have had to respond to rising inflation and declining real interest rates. These reforms may alter the traditional relationships between macroeconomic variables and stock market returns; for instance, the elasticity of stock returns to inflation or exchange rate changes may have changed post-reform.

Despite its strategic importance, the Nigerian stock market remains characterised by high volatility, episodic downturns, liquidity constraints, and investor sentiment swings. From the standpoint of portfolio management, this environment creates significant risk and uncertainty: fluctuating returns make it harder for investors to plan long-term investments, and can deter participation by risk-averse domestic and foreign investors alike. The dynamics of macro shock transmission (e.g., a spike in inflation or a currency depreciation) can rapidly translate into equity market instability, compounding the challenges of market development.

While substantial empirical work has been conducted, the evidence remains inconclusive in several respects. Some studies point to a strong influence of inflation and GDP growth, others to money supply and exchange rate effects, and still others find weak or inconsistent links. For example, the recent study by Elijah et al. (2025) covering 1986-2023 reports that money supply and exchange rate had positive long-run influence on stock market performance in Nigeria, whereas interest rate and external debt exerted negative effects. At the same time, others suggest that variables like interest rate may be statistically insignificant in some models despite economic expectations of a relationship.

In addition, the changing economic policy regime (floating exchange rate, subsidy removal, rising inflation) may have shifted the structural relationships between macro variables and stock returns, implying that earlier findings may no longer hold, or may need re-examination under the new context. There is thus a need for updated and comprehensive studies that (i) use more recent data, (ii) incorporate structural breaks or regime shifts (policy reforms, exchange regime change), (iii) consider additional macro or financial variables (e.g., monetary policy rate spreads, foreign portfolio flows, exchange rate volatility), and (iv) examine both short-run and long-run dynamics of stock returns in Nigeria.

In light of the foregoing, this study seeks to investigate the determinants of stock market returns in Nigeria with a specific focus on how key macroeconomic variables

(inflation, interest rate, and exchange rate, money supply, and GDP growth) affect equity returns. By doing so, it aims to update the empirical evidence with more recent data and assess whether the traditional determinants remain significant under the evolving macro-financial environment

Empirical studies have explored these relationships with varying conclusions. For instance, Fagunmoju et al. (2021) found that money supply and industrial production positively and significantly affect stock returns, while exchange and inflation rates have a negative impact. Similarly, Akanbi (2025) highlighted that the overall macroeconomic environment, inflation, and interest rate spread negatively influence stock market performance, albeit insignificantly. These mixed findings underscore the complexity of the Nigerian stock market's response to macroeconomic dynamics

Recent economic reforms, such as the removal of fuel subsidies and currency devaluation under President Bola Tinubu's administration, have further complicated the macroeconomic landscape. These policy shifts have led to heightened inflation and exchange rate volatility, factors known to influence investor behaviour and stock market returns. Despite the critical role of the stock market in Nigeria's economic development, it remains characterised by volatility and unpredictability. Investors often grapple with fluctuating returns, making portfolio management challenging and potentially deterring long-term investment

While numerous studies have examined the relationship between macroeconomic variables and stock market returns, the evidence remains inconclusive. For example, Yusuf et al. (2025) observed that money supply and interest rates have negative effects. Conversely, Udo et al. (2022) reported that GDP growth, money supply, exchange rate, and savings interest rate [positively affect stock market performance, while inflation exerts a negative influence. These discrepancies highlight the need for further investigation into determinants of stock market returns in Nigeria.

Moreover, the recent economic reforms have introduced new variables into the equation, such as increased inflation and exchange rate volatility, which may alter traditional relationships between macroeconomic factors and stock market performance. The lack of consensus in existing literature, coupled with evolving economic policies, underscores the necessity for updated and comprehensive studies to elucidate these dynamics

2. LITERATURE REVIEW

Understanding what drives stock market returns is fundamental for investors, policymakers, and researchers because market returns reflect both expected future cash flows and the discount rates that price those cash flows (Ross, 1976; Acemoglu, 2012). In emerging markets such as Nigeria, returns are influenced by an interplay of domestic macroeconomic fundamentals, market microstructure characteristics, firm-level attributes, global risk factors, and the institutional/political environment. A core strand of the literature links stock returns to macroeconomic forces that affect expected cash flows and discount rates. Common macro variables studied include inflation, interest rates, output growth, exchange rates, and commodity prices (especially oil for oil-dependent economies like Nigeria). Theory predicts that higher inflation raises nominal discount rates and can depress real returns (Fisher-type relationships), while stronger GDP growth improves corporate profits and supports higher returns. Exchange-rate depreciation and heightened exchange-rate volatility can negatively affect returns through higher input costs and currency risk, or positively affect some exporters via competitiveness channels. For Nigeria specifically, several empirical studies identify inflation, real interest rates, exchange-rate (or real effective exchange-rate) movements and world oil prices as important macro drivers of stock market performance.

2.1 Theoretical Perspectives

Theories serve as the backbone of empirical investigations, providing structured explanations for the complex interactions between macroeconomic indicators and stock market returns. In financial economics, stock return behaviour is often linked to investors' rational and irrational responses to information, risk perceptions, and expectations of future cash flows. The following theories were considered relevant to the study

Arbitrage Pricing Theory (APT)

Ross's (1976) Arbitrage Pricing Theory extends beyond the CAPM by suggesting that stock returns are influenced by multiple systematic risk factors, rather than a single market factor. In the Nigerian context, APT is highly suitable since domestic stock returns are likely affected by diverse macroeconomic risks, including exchange-rate movements, oil-price fluctuations, inflation, and monetary policy variables. Each factor represents a distinct source of systematic risk priced by the market. This provides a flexible framework for empirically modelling the relationship between macroeconomic indicators and stock returns without assuming market-wide beta sufficiency. For instance, Nigeria's oil dependence implies that global oil price shocks may be a priced factor, while exchange-rate volatility reflects external vulnerability, making them strong candidates within an APT-based specification (Chen et al, 1986; Bekaert & Harvey, 1997)

Behavioural Finance Theories

While classical theories assume rational expectations, behavioural finance highlights psychological biases and investor sentiment as important drivers of returns (Campbell & Shiller, 1988, Apergis & Eleftheriou, 2002; Barberis & Thaler, 2003; Umar et al., 2020). In Nigeria's relatively shallow and retail-driven stock market, investor overreaction, herding, and speculative behaviour often exacerbate market responses to

macroeconomic news. For example, sharp swings in exchange rates or government policy announcements frequently trigger outsized price movements that cannot be fully rationalised by fundamentals alone. This suggests that non-fundamental factors may interact with macroeconomic variables to shape stock returns, reinforcing the importance of including measures of volatility, liquidity, and institutional confidence in empirical models.

This study is anchored on the Arbitrage Pricing Theory (APT), which posits that stock returns are driven by multiple systematic risk factors. In this context, macroeconomic variables such as inflation, exchange rate, money supply, oil prices, and foreign capital flows represent priced sources of risk. Unlike single-factor models, APT allows flexibility in specifying country-specific determinants, making it particularly suitable for an emerging economy like Nigeria, characterised by macroeconomic volatility and structural instability.

The APT is particularly suitable for the Nigerian stock market for three reasons. First, Nigeria's economy is characterised by high exposure to diverse macroeconomic shocks, especially oil-price volatility, exchange-rate fluctuations, and inflationary pressures. These conditions cannot be adequately explained by a single market risk factor as in the CAPM. Second, empirical evidence from Nigerian and other emerging markets shows that stock returns are simultaneously shaped by macroeconomic fundamentals, liquidity measures, and institutional factors, consistent with the multi-factor nature of the APT (Adekoya & Oliyide, 2021). Third, the flexibility of the APT allows researchers to empirically specify relevant factors based on country-specific realities, making it well-suited for Nigeria, where oil dependence, policy uncertainty, and institutional quality are important return drivers.

2.2 Empirical Review

Ogunsakin and Awe (2020) investigated the macroeconomic determinants of stock market performance in Nigeria between 1985 and 2018. The source of the data for the

study was from the World Bank Development Indicators, 2020 edition and the Central Bank of Nigeria statistical bulletin. The study employed the ARDL co-integration approach as an estimation technique. Findings from the study showed that inflation rate, real interest rate, real effective exchange rate and world oil price were the major determinants of Nigeria's stock market performance during the study period. Based on these findings, the study therefore concludes that both endogenous and exogenous macroeconomic variables determine Nigeria's stock market performance. Hence, the activities in the global oil market should be monitored in formulating policies to enhance stock market performance in Nigeria.

Ekpete (2012) examined the relationship between macroeconomic effects on stock market returns in Nigeria, employing the CBN annual time series data spanning from 1985 to 2019. The study applied unit root test, auto-regressive distributed Lag and Granger causality tests to investigate the relationship between the all share index and interest rate, inflation rate, and exchange rate. The unit root test results for stationarity revealed that all the variables are reliable for economic decisions. The findings of the study revealed that the interest rate was negative and not significantly related to the all share index; also, the inflation rate was negative and not significantly related to the all share index, while the exchange rate was positive and significantly related to the all share index. The Granger causality result revealed unidirectional causality, which implies no causality. This study recommends that macroeconomic factors should be adequately managed by the Central Bank of Nigeria with a view to promoting investors' confidence in the stock market.

Ogiemudia (2022) examined the link between market risk and equity return in Nigeria from 1980 to 2019. It employs the vector error correction model (VECM) to determine the short-run dynamics and long-run effects of market risk factors on stock return. The findings revealed that a dynamic relationship exists between market risk factors and stock returns in Nigeria. Also, exchange rate risk and oil price risks have a significant influence on stock return, while inflation and interest rate risk, and political

instability risks have a non-significant impact on stock return. Finally, a unidirectional relationship was detected between interest rate, oil price, political instability and stock return. The study concludes that market risk factors of exchange rate, oil price, interest rate and political instability risks are major determinants of stock return in Nigeria. It is recommended that rational investors seeking maximum returns should minimise market risk factors by diversifying their portfolios and studying the risk behaviour and level in the market before taking investment decisions.

Arikewuyo (2023) examined the exchange rate gap shock–stock market deepening nexus in Nigeria using the structural VAR-X (SVAR-X) technique for the period 1986Q1 to 2018Q4. Findings reveal that the exchange rate gap shock has a negative but statistically not significant effect on stock market deepening in Nigeria. It was also found that the exchange rate passed through the interest rate from the second to the thirteenth quarter, and further through financial openness, whose effect, like the exchange rate gap, was negative. This implies that the exchange rate gap is significantly and negatively related to interest rate and financial openness in Nigeria. It is therefore recommended that the monetary authority should keep a constant tab on the gap between official and parallel market exchange rates, as its widening can have a damaging effect on stock market deepening. In addition, there is a need to establish a hedging instrument market to increase the resilience of the stock market and improve stock market deepening in Nigeria.

Adumah et al. (2024) investigated the impact of foreign portfolio investment (FPI) on the development of the Nigerian capital market from 1986 to 2023. Data were sourced from the Central Bank of Nigeria Statistical Bulletin and the National Bureau of Statistics. A quantitative methodology was employed, utilising the Johansen co-integration test, Vector Error Correction Model (VECM), and Granger causality test to analyse secondary time-series data. The Johansen co-integration test revealed a long-run relationship among the variables, while the VECM indicated that FPI negatively impacts market capitalisation. Additionally, the Granger causality test demonstrated

unidirectional causality from capital market development to FPI. To address the identified challenges, the study recommends that policymakers create a more supportive environment that ensures foreign investors can repatriate capital and earnings. The government should prioritise exchange rate stability that reflects market realities to enhance investor confidence. Investments in advanced technology are crucial to improving efficiency and accountability in market transactions. By adopting these targeted recommendations, Nigeria can better leverage FPI to foster capital market growth and promote sustainable economic development.

Takyi and Bentum-Ennin (2021) evaluated and quantified the short-term impact of the coronavirus disease of 2019 (COVID-19) on stock market performance in thirteen (13) African countries, using daily time series stock market data spanning 1st October 2019 to 30th June 2020. The study employed a novel Bayesian structural time series approach (a state-space model) to estimate the relative effects of the COVID-19 pandemic on stock market performance in those countries. Generally, our Bayesian posterior estimates show that, in relative terms, stock market performances in Africa have significantly reduced during and after the occurrence of COVID-19, usually between -2.7 % and -21 %. At the heterogeneous level, we find that 10 countries have their stock markets significantly and adversely affected by the COVID-19 pandemic, whereas the remaining 3 countries see no significant impact (or a rather short-lived negative significant impact) of the COVID-19 pandemic on their stock markets. We find that, within our sample period, there is almost no chance that the COVID-19 pandemic would have positive effects on the stock market performance in Africa. Our findings contribute to the discussion and research on the economic impact of the COVID-19 pandemic by providing empirical evidence that the pandemic has restrictive effects on stock market performance in African economies.

Okoro and Okoro (2023) examined the effect of macroeconomic variables on the stock market performance in Nigeria from 1999 to 2021 using the Auto Distributive Lag Model (ARDL) of Multiple Regression. Market capitalisation (MCAP), aggregate

spending (AGS), money supply (MS), the exchange rate (EXR), and inflation rate (INF), and interest rate (INT) data were sourced from the CBN Annual report. ARDL cointegration bound test and error correction model estimation techniques were employed. The findings of the ARDL revealed that the exchange rate, interest rate, and money supply were all significantly related to market capitalisation in Nigeria at 5% levels of significance, while aggregate spending was insignificant. The results also concurred with the a priori expectations as the inflation rate showed a negative effect on the stock market performance. The study concluded that there exists a long-run relationship between macroeconomic variables and market capitalisation in Nigeria, and recommended that the Nigerian government should foster an economic policy capable of ensuring stability in the stock market as it has a commensurate effect on the general growth of the economy.

Ebi and Galeed (2022) examined the relationship between stock market performance and macroeconomic fundamentals in Nigeria. It employed the longitudinal research design, and secondary data sourced from the Central Bank of Nigeria statistical bulletin over the period of 1981 to 2018. Crude oil price, Consumer Price Index, Gross Domestic Product and Money Supply were the independent variables while Annual Market Capitalization of the Nigerian Stock Exchange was used as a proxy for stock market performance. Analytical techniques employed for this study included the Unit Root test, Co-integration test, Error Correction Model and Granger causality test. The study found a significant and positive relationship between crude oil price, money supply and average market capitalisation; a significant but negative relationship between consumer price index and average market capitalization while an insignificant but positive relationship was observed between gross domestic product and average market capitalisation. Further, a long-run relationship exists among the variables; thus, disequilibrium in stock market is offset by long-run changes in macroeconomic fundamentals. In addition, a unidirectional relationship exists between average market capitalization and gross domestic product; bidirectional relationship exist between

money supply and average market capitalization, and consumer price index and average market capitalization; but no causality exist between crude oil price and average market capitalization . Based on these findings, the study recommends for increased output by way of encouraging more investments in the stock market. In addition, the stock market should improve on information dissemination so as to enlighten corporate organizations about access to long-term funds that will enable them increase stock market activities.

Gina et al. (2023) examined foreign direct investments and capital market development in Nigeria. The importance of foreign direct investments in complementing domestic savings to promote capital accumulation for economic growth, and through its feedback effect, enhance capital market development is settled in the literature. Employing the ARDL approach to analyze the short run dynamic relationships and long run stable relationships between foreign direct investments and capital market development (as proxied by market capitalization, turnover ratio and the All share index) in Nigeria for the period 1986 to 2021, the study finds that FDIs have positive and significant impact on capital market development in Nigeria, in the long run. Furthermore, the study notes that gross capital formation serves as catalyst to FDI inflows and capital market development. The study recommends, among others, that efforts should be intensified to revamp the Nigerian economy and rejig the capital market such that the current situation where foreign investors face exchange control difficulty in the repatriation of profits genuinely made in the course of doing business in Nigeria can be avoided.

Ghanador (2024) investigated the influence of macroeconomic variables on stock price behaviour in Nigeria. The annual time series data spanning through the period of 1995 to 2021 and historical data research design were adopted for the study. The Augmented Dickey Fuller (ADF) and Phillips-Perron test were used to test for stationarity of the variables. Other econometric tests like Ramsey Reset test, Heteroskedasticity test, Cusum test, Johansen cointegration test, Parsimonious Error Correction model and the fully modified Least Square were used for the data analysis. The findings from the short-run result shows that all the macroeconomic variables adopted for the study have

no positive and significant influence on stock price except inflation whose impact is positive and significant. However, the result from the long-run analysis reveals that interest rate and money supply have inverse and insignificant influence on stock price behaviour. Inflation has a positive and insignificant effect while exchange rate has a positive and significant influence on stock price behaviour in Nigeria. The result from the Johansen Cointegration and the fully modified least squares shows evidence of long-run relationship between the Dependent and independent variables. The study therefore suggest that the government through its relevant agencies should formulate good macroeconomic policies in order to enhance stock market performance.

Udo et al. (2022) investigated the effects of selected macroeconomic variables on stock market performance in Nigeria. The study employed time-series data obtained from the Central Bank of Nigeria's statistical bulletin and World Development Indicators. Stock market performance was measured using the all-shares index while the identified macroeconomic variables included GDP growth, broad money supply, exchange rate, savings interest rate, and inflation rate. An Autoregressive Distributive Lag (ARDL) estimation technique was used to establish the long run relationship among the variables, and it was revealed that a long run relationship existed among the variables in the estimated model. The result shows that macroeconomic variables such as gross domestic product, broad money supply, exchange rate, and savings interest rate have a positive effect on stock market performance in Nigeria. On the other hand, the results showed that the inflation rate has a negative effect on stock market performance in Nigeria. Predicated on the result, the study recommended that policies to increase gross domestic product, exchange rate, interest rate, and money supply should be implemented because they can lead to an improvement in the performance of the stock market, while the inflation rate should be maintained at a single digit to prevent its negative effect on the performance of the stock market in Nigeria.

Alalade et al. (2024) evaluated the critical role of foreign portfolio investment (FPI) in enhancing the liquidity and efficiency of Nigeria's capital markets from 1993 to 2023. FPI plays a pivotal role in broadening the spectrum of viable financing opportunities by promoting market depth and expansion. This analysis, utilizing an ex-post facto research design, draws on data from the Central Bank of Nigeria Statistical Bulletin to investigate the effects of macroeconomic variables, specifically the interest rate and exchange rate, on FPI. Using a 5% level of significance for panel data analysis, the Fully Modified Ordinary Least Squares (FMOLS) estimation method showed that the interest rate and FPI were related in a way that was opposite to what was expected. These findings highlight the substantial impact of macroeconomic indicators such as interest and exchange rates on FPI flows into Nigeria. The research not only establishes a critical correlation between international portfolio flows and key domestic economic metrics, including GDP growth rate, foreign reserves, inflation, and interest rates, but also underpins the necessity for targeted policy measures. Policymakers should formulate and implement refined interest rate strategies to attract foreign portfolio investments, thereby enhancing Nigeria's economic landscape. Such strategic policy measures should aim to stabilize the macroeconomic environment, ensuring a conducive atmosphere for FPI and subsequently reinforcing Nigeria's financial market infrastructure.

2.3 Synthesis of Extant literature

Taken together, the reviewed studies do not present contradictory evidence in a strict sense; rather, they reveal that Nigeria’s stock and capital markets respond conditionally, depending on macroeconomic stability, structural distortions, capital flow composition, risk exposure, and methodological framing. When these conditioning factors are jointly considered, the observed contrasts become mutually reinforcing.

The apparent contrast between studies that find strong macroeconomic effects (Ogunsakin & Awe, 2020; Okoro & Okoro, 2023; Udo et al., 2022; Ebi & Galeed,

2022) and those reporting weak or insignificant effects (Ekpete, 2012; Ghanador, 2024; Arikewuyo, 2023) can be harmonised by recognising that macroeconomic variables exert influence only when transmission mechanisms are effective.

In periods of policy credibility, moderate inflation, and exchange rate coherence, macroeconomic variables significantly explain stock market performance. Conversely, when markets are shallow, policy signals are inconsistent, or structural rigidities dominate, macroeconomic effects weaken or become statistically insignificant. Thus, macroeconomic fundamentals are necessary but not sufficient conditions for stock market performance in Nigeria.

The divergence between studies reporting positive exchange rate effects and those identifying negative or insignificant impacts from exchange rate gaps reflects two complementary realities. Moderate and market-reflective exchange rate movements enhance competitiveness and firm profitability, thereby supporting stock market performance (Ekpete, 2012; Udo et al., 2022; Ghanador, 2024).

However, when exchange rate management creates misalignment between official and parallel markets, as shown by Arikewuyo (2023), the resulting uncertainty erodes investor confidence and suppresses stock market deepening. Hence, the exchange rate supports market performance only when it is unified, credible, and predictable.

The mixed evidence on inflation and interest rate effects is harmonised by recognising their asymmetric and regime-dependent roles. Inflation generally undermines stock market performance by reducing real returns and increasing uncertainty (Ogunsakin & Awe, 2020; Udo et al., 2022). However, in high-inflation environments where equities function as partial inflation hedges, inflation may exhibit a short-run positive association with stock prices (Ghanador, 2024).

Interest rates, by contrast, show weak and inconsistent effects because Nigeria's financial system does not transmit monetary policy efficiently to the equity market.

This explains why interest rates are often insignificant (Ekpete, 2012; Ogiemudia, 2022) despite their theoretical importance.

The contrasting findings on oil price effects are reconciled by recognising that oil prices influence the stock market indirectly rather than directly. Studies that model oil price as a risk or volatility channel (Ogunsakin & Awe, 2020; Ogiemudia, 2022) find significant effects, while those treating oil price as a standalone macro variable (Ebi & Galeed, 2022) often do not. Thus, oil price shocks matter primarily through their impact on exchange rates, fiscal balances, and investor sentiment, not through direct valuation channels.

The contrast between positive FDI effects (Gina et al., 2023) and negative or volatile FPI effects (Adumah et al., 2024; Alalade et al., 2024) reflects differences in the quality and horizon of capital flows. FDI, being long-term and productive, strengthens market fundamentals and supports capital market development; however, FPI, being short-term and return-sensitive, amplifies volatility and can weaken market capitalisation when macroeconomic conditions are unstable. Therefore, capital market performance in Nigeria depends less on the volume of foreign capital and more on its composition and stability.

Risk-based and shock-focused studies (Ogiemudia, 2022; Arikewuyo, 2023; Takyi & Bentum-Ennin, 2021) harmonise the broader literature by explaining why traditional macroeconomic models sometimes fail. Nigeria's stock market is highly exposed to political risk, exchange rate uncertainty, global oil price volatility, and exogenous shocks such as COVID-19.

When these risks dominate, macroeconomic fundamentals alone cannot explain market performance, leading to apparent inconsistencies across studies. When synthesised, the literature converges on a single insight that Nigeria's stock and capital market performance is macroeconomically driven, structurally constrained, risk-sensitive, and capital-composition dependent. In effect, macroeconomic fundamentals matter, but their effectiveness is conditioned by exchange rate credibility, inflation

dynamics, institutional strength, risk exposure, and the nature of foreign capital inflows. Apparent contradictions in the literature therefore reflect different windows into the same complex reality, rather than genuine empirical disagreement.

3. METHODOLOGY

This study adopts a parsimonious ARDL framework combined with the Toda-Yamamoto Causality approach. The ARDL approach was adopted because it accommodates variables integrated of order I(0) and I(1), provides efficient small-sample estimates, and distinguishes between short-run and long-run dynamics with the potential of taking care of endogeneity. The Toda–Yamamoto causality technique was further employed because it permits causality testing irrespective of integration and cointegration properties while avoiding potential pre-test bias.. To avoid over-parameterisation, given the sample size (T=40), the model is restricted to key macroeconomic variables consistent with APT. The dependent variable is the stock market return. Stock market return in this study is defined as the logarithm of the percentage change in the value of the stock market index. The explanatory variables are: inflation rate, defined as a general increase in prices measured by the consumer price index (CPI), Exchange rate, which is the rate of naira to US dollar, money supply, defined as the total money in circulation including savings and demand deposit, oil price which is the Brent crude oil price per barrel, and foreign portfolio investment (FPI), which is measured as net inflow/outflow of capital into the Nigeria stock market as a percentage of Gross Domestic Product. Annual data covering 1985-2024 are sourced from World Development Indicators (WDI, 2025). To account for structural instability, the study employs a multiple structural breakpoint approach. The inclusion of the structural dummy variables accounts for major exogenous shocks and policy regime shifts capable of altering stock market behaviour and macroeconomic relationships in Nigeria. Specifically, the 2008 dummy captures the effects of the global

financial crisis, the 2013 dummy captures the period of oil price instability associated with global crude oil market disruptions, while the 2023 dummy reflects the exchange rate liberalisation policy implemented in Nigeria. Incorporating these dummy variables helps control for structural breaks and improves the stability and reliability of the estimated ARDL model.

3.1 Model Specification

Functional Specification

$$SMR_t = f(INFL_t, TBR_t, lnEXCR_t, MSGR_t, OIL_t, DUM2008_t, DUM2013_t, DUM2023_t \quad (1)$$

The econometric model of equation (1)

$$SMRt = \beta_0 + \beta_1 TBR_t + \beta_1 INFL_t + \beta_2 TBR_t + \beta_3 lnEXCR_t + \beta_4 MSG_t + \beta_5 OIL_t + \beta_6 FPI_t + \beta_7 DUM2008_t + \beta_8 DUM2013_t + \beta_9 DUM2023_t + \mu_t \quad (2)$$

Whereas:

SMR = Stock Market Return (measured by $lnASI_t - lnASI_{t-1}$)
INFL = Consumer Price Index
TBR = Treasury Bill Rate
lnEXCR = natural log of Exchange Rate
MSGR = Money Supply growth rate
OIL = Brent Crude Oil Price per barrel (USD)
FPI = Foreign Portfolio Investment
DUM2008 = structural break dummy variable representing the 2008 global financial crisis.

DUM2013 = structural break dummy variable representing the 2008 oil instability

DUM 2023 = structural break dummy variable representing the 2023 exchange rate liberalisation

β_0 = intercept parameter

.$\beta_1 - \beta_9$, = slope coefficients

μ_t = white noise error term assumed to satisfy the standard OLS assumption

$$DUM1_t \begin{cases} 1, & for\ 2008\ Global financial\ Crisis\ period \\ 0, & for\ otherwise \end{cases} \quad (3)$$

$$DUM2_t \begin{cases} 1, & for\ 2013\ Oil\ instability\ period \\ 0, & for\ otherwise \end{cases} \quad (4)$$

$$DUM1_t \begin{cases} 1, & for\ 2023\ exchange\ rate\ liberalisation\ period \\ 0, & for\ otherwise \end{cases} \quad (5)$$

The Augmented ARDL-ECM (Short- run dynamics) version of equation (1):

$$\begin{aligned} \Delta SMR_t = \alpha_0 + \sum_{i=1}^{p} \alpha_1 \Delta SMR_{t-i} + \sum_{i=0}^{qi} \alpha_2 \Delta INFL_{t-i} + \sum_{i=0}^{q2} \alpha_3 \Delta TBR_{t-i} + \sum_{i=0}^{q3} \alpha_4 \Delta lnEXCR_{t-i} \\ + \sum_{i=0}^{q4} \alpha_5 \Delta MSGR_{t-i} + \sum_{i=0}^{q5} \alpha_6 \Delta OIL_{t-1} + \sum_{i=0}^{q6} \alpha_7 \Delta FPI_{t-1} + \alpha_8 DUM2008_t \\ + \alpha_9 DUM2013_t + DUM2023_t + \lambda ECT_{t-1} \\ + \mu_t \end{aligned} \quad (6)$$

Where,

Δ = first-difference operator,

ECT_{t-1}= lagged error correction term,

λ= speed of adjustment coefficient,
p, $q_1 \ldots q_6$ = optimal lag lengths,
μ_t = serially independent disturbance term.

The coefficient of the error correction term is expected to be negative and statistically significant to confirm long-run convergence toward equilibrium.

The Long-run Dynamics of Equation (1)

$$SMR_t = \theta_0 + \theta_1 INFL_t + \theta_2 TBR_t + \theta_3 lnEXCR_t + \theta_4 MSGR_t + \theta_5 OIL_t + \theta_6 FPI_t + \theta_7 DUM2008_t + \theta_8 DUM2013_t + \theta_9 DUM2023_t + \mu_t \quad (7)$$

TYDL Causality Model Specification

$$Y_t = \alpha_0 + \sum_{i=1}^{k+d_{max}} \alpha_i Y_{t-i} + \sum_{i=1}^{k+d_{max}} \beta_i X_{t-i} + \mu_t \quad (8)$$

Where:
k = optimal lag length,
d_{max}= maximum order of integration,
Y_t and X_t = variables under investigation,
μ_t = stochastic error term.

3.2 Lag Selection and TYDL

Optimal lag length is selected using SIC (see appendices). The TYDL model is estimated as VAR (p + dmax), where dmax = 1 based on unit root results

4. RESULTS

Table 1: ***Descriptive Statistics of the Variables***

	SMR	INFL	TBR	EXCR	MSGR	OIL	FPI
Mean	0.0754	18.6546	14.0802	137.7085	21.5115	63.1700	0.4490
Median	0.1065	12.3810	12.1250	123.1930	19.1165	54.6750	0.0700
Maximum	0.3630	72.8360	64.6000	645.1940	87.7610	145.7900	2.5000
Minimum	-0.2660	5.3880	1.3880	0.8900	-1.7940	13.1000	-1.2000
Std. Dev.	0.1253	16.9449	11.5316	143.4003	19.2298	37.9411	0.8375
Skewness	-0.5022	1.8585	2.9305	1.4985	1.2721	0.6886	0.7339
Kurtosis	3.2533	5.2180	12.6296	5.3975	5.0097	2.5918	3.0836
Jarque-Bera	1.7881	31.2263	211.7993	24.5496	17.5196	3.4388	3.6021
Probability	0.4090	0.0000	0.0000	0.0000	0.0002	0.1792	0.1651
Sum	3.02	746.18	563.21	5508.34	860.46	2526.80	17.96
Sum Sq. Dev.	0.6	11198.0	5186.2	801982.3	14421.6	56141.6	27.4
Observations	40	40	40	40	40	40	40

Table 1 reveals the descriptive statistics of the variables in the study. The descriptive statistics of the variables provide important preliminary insights into the behaviour and distributional properties of the data over the period 1985–2024.

Stock market returns (SMR) exhibit a relatively low average value of 0.0754, indicating modest returns in the Nigerian stock market over the study period. The standard deviation of 0.1253 suggests moderate volatility, while the range between the minimum (–0.2660) and maximum (0.3630) values reflects the presence of both significant downturns and periods of strong market performance. The negative skewness (–0.5022) implies that extreme negative returns occur more frequently than extreme positive returns, although the kurtosis value of 3.2533 indicates that the distribution is approximately normal. This is further supported by the Jarque–Bera probability value (0.4090), which confirms normality.

Inflation (INFL) displays a high mean of 18.65% and a substantial standard deviation of 16.94, indicating considerable macroeconomic instability during the study

period. The series is highly positively skewed (1.8585), suggesting the occurrence of extreme inflationary episodes, while the kurtosis value of 5.2180 indicates a leptokurtic distribution characterised by heavy tails. The Jarque–Bera test strongly rejects normality ($p < 0.05$), reinforcing the presence of volatility and structural disturbances in inflation dynamics.

Similarly, the Treasury Bill Rate (TBR) shows a mean of 14.08% with a wide dispersion (standard deviation of 11.53), reflecting fluctuations in monetary policy stance. The variable is highly positively skewed (2.9305) and exhibits an exceptionally high kurtosis (12.6296), indicating extreme outliers and a heavy-tailed distribution. The Jarque–Bera statistic confirms non-normality, suggesting that interest rate movements have been highly irregular over time.

The exchange rate (EXCR) demonstrates substantial variability, with a mean of 137.71 and a large standard deviation of 143.40, reflecting persistent depreciation and instability of the domestic currency. Its positive skewness (1.4985) and leptokurtic nature (kurtosis = 5.3975) indicate extreme exchange rate movements, likely driven by policy shifts and external shocks. The rejection of normality further highlights the volatile nature of the exchange rate in Nigeria.

The money supply growth rate (MSGR) has a mean of 21.51 and a relatively high standard deviation of 19.23, suggesting inconsistent monetary expansion. The positive skewness (1.2721) and high kurtosis (5.0097) point to occasional spikes in liquidity growth, while the Jarque–Bera test confirms that the distribution deviates from normality.

Oil price (OIL), which is a critical exogenous variable for the Nigerian economy, has a mean value of 63.17 and a wide range between 13.10 and 145.79, reflecting exposure to global commodity price fluctuations. Although the distribution is moderately positively skewed (0.6886), the kurtosis value of 2.5918 suggests a distribution close to normal. This is supported by the Jarque–Bera probability (0.1792),

indicating that oil price movements are relatively well-behaved compared to other macroeconomic variables.

Foreign portfolio investment (FPI) exhibits a low average value of 0.4490 but a relatively high standard deviation of 0.8375, indicating significant variability in capital flows. The presence of both positive and negative values reflects episodes of capital inflows and outflows. The variable is moderately positively skewed (0.7339) with near-normal kurtosis (3.0836), and the Jarque–Bera test suggests that it does not significantly deviate from normality.

Overall, the descriptive statistics reveal that most macroeconomic variables are characterised by high volatility, positive skewness, and leptokurtic distributions, indicating the presence of extreme values and structural instability in the Nigerian economy. These features justify the adoption of a dynamic econometric framework such as the ARDL model and further support the inclusion of structural break dummies to account for regime shifts and macroeconomic shocks.

Table 2: ***Correlation Matrix of the Variables***

	INFL	TBR	lnEXCR	MSGR	OIL	FPI
INFL	1.0000					
TBR	0.1963	1.0000				
lnEXCR	-0.3123	0.1553	1.0000			
MSGR	0.2177	-0.0901	-0.2574	1.0000		
OIL	-0.3221	-0.0147	0.6660	0.0412	1.0000	
FPI	-0.1961	0.3053	0.4493	-0.1861	0.5175	1.0000

Source: **Authors' Compilation (2026)**

The correlation matrix is used as a preliminary diagnostic tool to assess the presence of multicollinearity among the explanatory variables. A common rule of thumb in econometric analysis is that multicollinearity becomes problematic when pairwise correlation coefficients exceed 0.80 in absolute terms.

From Table 2, the correlation coefficients among the independent variables are generally low to moderate. The highest observed correlation is between the logarithm

of exchange rate (lnEXCR) and oil price (OIL), with a coefficient of 0.6660, which, although relatively strong, remains below the critical threshold. Similarly, the correlation between foreign portfolio investment (FPI) and oil price (OIL) is 0.5175, while that between lnEXCR and FPI is 0.4493. All other pairwise correlations are weak, with values well below 0.50.

Importantly, none of the variables exhibit correlation coefficients approaching unity, and there is no evidence of perfect or near-perfect linear relationships among the regressors. This indicates that the explanatory variables are not highly collinear and can independently contribute to explaining variations in the dependent variable.

While the moderate correlation between lnEXCR and OIL suggests some degree of association—likely reflecting the oil-dependent nature of the economy, it is not sufficiently strong to distort coefficient estimates or inflate standard errors significantly.

Overall, the correlation analysis suggests that multicollinearity is not a serious concern in the model. This conclusion is consistent with the Variance Inflation Factor (VIF) results, which fall within acceptable limits. Consequently, all variables are retained in the regression model without the risk of unstable or unreliable parameter estimates arising from multicollinearity.

Table 3 (a): ***Bai–Perron Multiple Structural Break Test Results***

Null Hypothesis: No breaks at specified breakpoints (Critical Value 5%)

Test	Statistic	Decision
UDmax	0.045 (Significant)	Reject no-break hypothesis
WDmax	0.037(Significant)	Presence of Multiple breaks

Table 3(b): ***Estimated Break Dates***

Break No	Break Year	Confidence Interval	Regime Interpretation
1	2008	2007-2009	Global Financial Crisis
2	2013	2012-2014	Oil Price Instability
3	2023	2022-2024	Exchange rate liberalisation

Source: Authors' Compilation (2026)

The Bai–Perron multiple structural break test in Table 3 (a) and (b) reveals strong evidence of parameter instability in the estimated model. Both the UDmax and WDmax statistics reject the null hypothesis of no structural break. The sequential F-statistics further confirm the presence of multiple breakpoints, with up to four structural regimes identified over the sample period. The detected breakpoints correspond closely with major macroeconomic events in Nigeria, particularly the 2008 global financial crisis and the 2023 exchange rate liberalisation. These findings indicate that the relationship between stock market returns and macroeconomic variables is subject to regime shifts, thereby justifying the inclusion of structural break dummies in the regression model.

Table 4: Unit Root Test for Stationarity

Panel A: *Augmented Dickey Fuller Test*

Variables	Level *Intercept and Trend*	First Difference *Intercept and Trend*	Integration order
SMR	-5.261189***	-	I (0)
INFL	-1.666398	-4.433591**	I (1)
TBR	-2.487647	-6.538753***	I (1)
MSGR	-3.132353	-6.304956***	I (1)
lnEXCR	-3.538062	-	I (0)
OIL	-2.991405	-8.330811***	I (1)
FPI	-6.387526***	-	I (0)

Commented [o1]:

***Panel B**: Stationarity (Phillips- Perron Test*

Variables	**Level** *Intercept and Trend*	First Differences *Intercept and Trend*	**Integration order**
SMR	-5.184682	-	I (0)
INFL	-2.844966	-6.186240***	I (1)
TBR	-2.457049	-6.561791	I (1)
MSGR	-2.642000	-7.517770	I (1)
lnEXCR	-3.511283	-	I (0)
OIL	-2.965825	-8.824526	I (1)
FPI	-6.536969***	-	I (0)

Note: ***, **, and * are 1%, 5% and 10% level of significance respectively
Source: Authors' Compilation (2026)

Unit Root Test

It is commonly believed that the simple time series around a deterministic pattern is stationary or at least stable; this is not always accurate. Nevertheless, the ARDL cointegration technique does not require unit root testing. However, to prevent ARDL from crashing in the presence of an embedded stochastic pattern of 1 (2), the study performs unit root tests to determine the presence of a unit root in the series. To confirm the outcome properties of the time series, this study used the Augmented Dickey-Fuller (ADF) and Phillips-Perron tests (PP). The null hypothesis for the test (both ADF and PP) affirms that the data series in question has a unit root, while the alternative hypothesis affirms that the series is stationary. Table 4 presents the results of the Augmented Dickey–Fuller (ADF) and Phillips–Perron (PP) unit root tests conducted to determine the stationarity properties of the variables in the model. Both tests were estimated with intercept and trend specifications, and statistical significance was evaluated at the 1%, 5%, and 10% levels.

The ADF results reveal a mix of stationary and non-stationary variables: Stationary at level [I (0)]: SMR, lnEXCR and FPI are stationary at their levels, indicating that these series do not contain unit roots and are mean-reverting in their natural form. Stationary at first difference [I (1)]: INFL, TBR, MSGR, OIL, become

stationary only after first differencing, suggesting they follow a unit-root process at levels but become stable after transformation.

The PP test results reinforce the ADF findings, showing high consistency across test procedures: Level-stationary variables [I (0)]: SMR, lnEXCR and FPI remain significant at levels. First-difference stationary variables [I (1)]: INFL, TBR, MSGR, OIL again exhibit stationarity only after differencing.

Both tests reach identical integration orders for all variables, strengthening the credibility and robustness of the stationarity outcomes. This convergence is important because ADF is parametric while PP is non-parametric; agreement between them reduces the likelihood of specification or autocorrelation bias.

The mixture of I (0) and I (1) variables justifies the adoption of an estimation technique that accommodates different integration orders without requiring all variables to be stationary at the same level. Consequently, the dataset is suitable for ARDL modelling, which allows a combination of I (0) and I(1) regressors; the presence of no I(2) variables ensures the ARDL bounds testing approach remains valid. The results also support the application of Toda–Yamamoto (TYDL) causality, since the maximum order of integration is one.

Table 5: *Bound Test for Cointegration (Dependent Variable: SMR*)

Test Statistic	Value	K
F-statistic	3.732686	9

Level of Significance	Lower (Bound I (0)	Upper Bound I (1)
10%	1.88	2.99
5%	2.14	3.24
2.50%	2.37	3.60
1%	2.65	3.97

K is the number of exogenous variables in the model

Source: Authors' Compilation (2026)

In estimating the long-run relationship, a two-step method is used: an initial analysis of the nature of a long-run relationship between the variables in Equation (2), which is accompanied by an approximation of the short-run and long-run parameters. Therefore, the bounds test method was used to determine the existence of a long-term relationship between the variables of interest by conducting an F-test on the coefficients of the model's lagged-level variables. Also, Pesaran and Shin (1995, 1998) suggested two critical values to evaluate the relationship (lower and upper bounds) due to the limitations of the traditional Wald test F-statistic. The computed F-test is then compared with the critical values for the hypothesis test. Therefore, if the calculated F-statistic is less than the lower bound value, the null is not rejected. On the contrary, the existence of a long-term relationship between the variables is suggested if the calculated F-statistic exceeds the upper limit value. Finally, there is an inconclusive long-run relation between the variables if the calculated F-statistics are between the lower bound and the upper bound. However, the error correction term would be a useful way to establish co-integration in the inconclusive cases after Kremers et al. (1992) and Bannerjee et al. (1998).

Table 6 shows that the F-statistic value of 3.732686 is above both the lower limit (2.14) and the upper limit (3.24). This therefore reveals that there existed a long-run relationship among the variables, or, in other words, that the variables are cointegrated.

Table 6 shows the estimated ARDL (1, 0, 0, 0, 0, 0, 0, 1, 0, and 0), which model provides a coherent, though somewhat uneven, picture of the relationship between SMR and the selected macroeconomic variables when both long-run equilibrium conditions and short-run dynamics are jointly considered.

Table 6: Long and short run Dynamics of estimated results for the selected ARDL (Selected Model: ARDL (1, 0, 0, 0, 0, 0, 0, 1, 0, and 0)

Variable	Coefficient	Standard Error	T-Statistics	P-Value
Panel A: Long-Run Dynamics: SMR				
INFL	0.002626	0.001016	2.585225	0.0162
TBR	-0.001612	0.003130	-0.514895	0.6113
lnEXCR	0.006817	0.020635	0.330346	0.7440
MSGR	0.000911	0.001145	0.795440	0.4342
OIL	0.000182	0.000848	0.214952	0.8316
FPI	0.004059	0.021109	0.192269	0.8491
DUM2008	-0.121630	0.072782	-1.671146	0.1077
DUM2013	0.054076	0.072415	0.746744	0.4625
DUM2023	0.166918	0.163091	1.023466	0.3163
C	0.015550	0.084800	0.183368	0.8560
Panel B: Short-Run Dynamics				
D(SMR(-1))	0.352100	0.149164	2.360493	0.0267
D(INFL)	0.001695	0.001370	1.237782	0.2278
D(TBR)	-0.002126	0.003995	-0.532242	0.5995
D(lnEXCR)	0.008993	0.026846	0.334982	0.7405
D(MSGR)	0.001202	0.001461	0.822374	0.4190
D(OIL)	0.000241	0.001126	0.213666	0.8326
D(FPI)	0.005354	0.028060	0.190822	0.8503
D(DUM2008)	-0.380436	0.124517	-3.055282	0.0054
D(DUM2013)	0.071339	0.100616	0.709024	0.4851
D(DUM2023)	0.220207	0.201580	1.092406	0.2855
CointEq(-1)	-1.319253	0.260932	-5.055928	0.0000

Panel C: Goodness-of-fit measures	
R -Squared	0.610206
Adj. R-Squared	0.399067
F- statistics	2.890073
P-value (F-stat.)	0.011796
Durbin-Watson Statistics	2.226621

Panel D: Diagnostic Tests	*Test*	*Probability*
Breusch-Godfrey Serial Correlation LM Test:	2.170379	0.3378
VAR Residual Serial Correlation LM Tests	50.64637	0.4084
Heteroskedasticity Test: Breusch-Pagan-Godfrey	5.464453	0.9635
Heteroskedasticity Test: ARCH	0.054093	0.8161
Ramsey RESET Specification Test	0.005871	0.9396
Jarque-Bera Statistics	1.767698	0.413190

Note: ***, **, and * are 1%, 5% and 10% level of significance respectively

Source: Author's Computation (2026)

Commented [o2]:

Commented [o2R2]:

Commented [o3]:

Commented [o4]:

Figure 1: ARDL Model Selection Summary

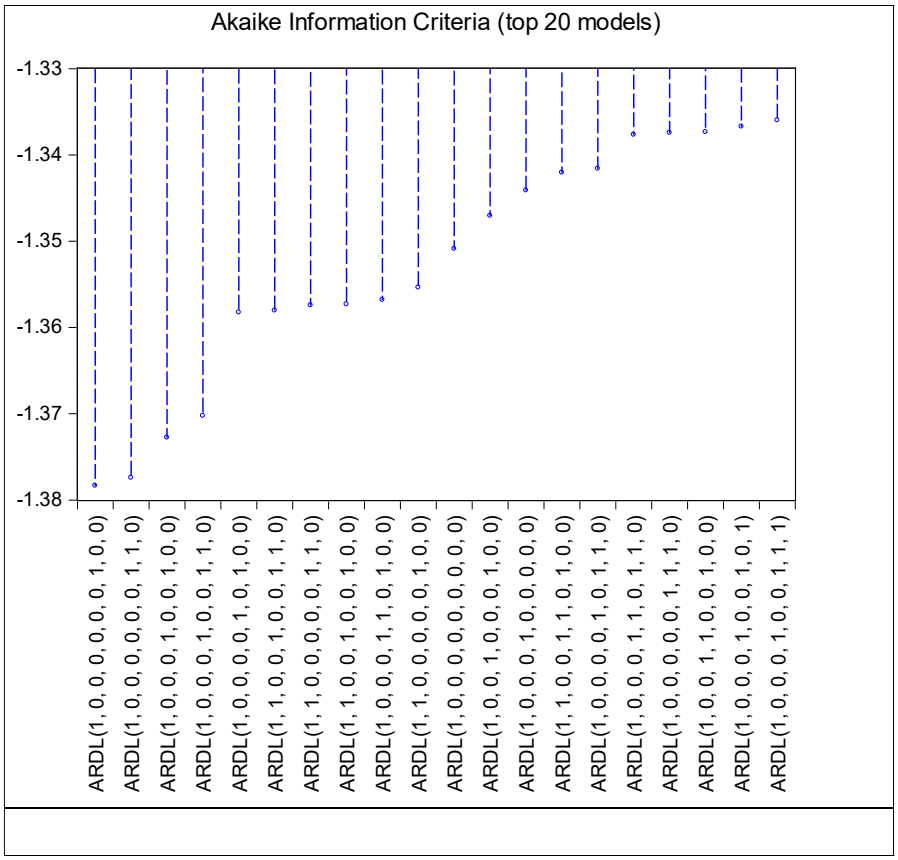

Table 6 shows that the long-run estimates indicate that inflation (INFL**)** is the only macroeconomic variable exerting a statistically significant influence on SMR. Its positive coefficient suggests that sustained increases in the general price level are associated with a corresponding rise in SMR over time. When harmonized with the short-run results, however, this relationship appears to be purely long-term in nature,

as changes in inflation do not produce immediate or statistically significant short-run effects. This divergence implies that inflation operates through gradual adjustment mechanisms, possibly reflecting delayed pass-through effects or adaptive expectations within the economy.

In contrast, other macroeconomic variables, including Treasury bill rate (TBR), exchange rate (lnEXCR), money supply growth (MSGR), oil prices (OIL), and foreign portfolio investment (FPI), are consistently insignificant in both the long run and short run. This consistency strengthens the conclusion that these variables do not play a decisive role in explaining variations in SMR within the specified model. From a structural standpoint, this may reflect weak monetary policy transmission, limited financial market depth, or the dominance of non-macroeconomic factors in shaping SMR.

The role of structural break dummies further clarifies the dynamics. While none of the dummy variables are significant in the long run, the short-run results reveal that the 2008 global financial crisis (DUM2008) had a strong and statistically significant negative effect on SMR. This suggests that major external shocks exert immediate disruptive impacts, but such effects are not sustained over time, as the system eventually reverts to its long-run equilibrium path. The insignificance of the 2013 and 2023 dummies in both periods indicates that these events did not materially alter the trajectory of SMR.

A critical point of convergence between the short-run and long-run frameworks is the error correction mechanism (ECM). The coefficient of the lagged error correction term is negative and highly significant, confirming the existence of a stable long-run relationship among the variables. However, the magnitude of the coefficient (−1.319) suggests a rapid and excessive speed of adjustment, where deviations from equilibrium are corrected within one period, but with an overshooting effect. This implies that the adjustment process is not smooth; instead, the system may oscillate around equilibrium before stabilizing. When viewed alongside the insignificance of most explanatory

variables, this finding suggests that internal system dynamics, rather than external macroeconomic shocks, dominate the adjustment process.

Additionally, the significance of the lagged change in SMR in the short run indicates inertia or persistence, meaning that past movements in SMR significantly influence current changes. This reinforces the idea that SMR dynamics are largely self-driven, with limited immediate responsiveness to macroeconomic policy variables.

The goodness-of-fit statistics indicate that the model explains a moderate proportion of the variation in SMR, although the adjusted R-squared suggests some loss of explanatory efficiency when accounting for model complexity. Importantly, the F-statistic confirms that the model is jointly significant. The stability of the estimated ARDL model was evaluated using the Cumulative Sum (CUSUM) and Cumulative Sum of Squares (CUSUMSQ) statistics (see appendix). As depicted in the first plot, the CUSUM line remains within the 5% significance boundaries throughout the evaluation period (1985–2024). This confirms that the model's recursive residuals are structurally stable, and the estimated parameters remain robust over time without noticeable structural shifts.

Similarly, the CUSUMSQ test presented in the second plot shows that the cumulative squared residuals also lie within the critical bounds at the 5% significance level. This further reinforces evidence of parameter constancy and absence of instability in the variance of the residuals. The combined diagnostic outcomes indicate that the selected ARDL specification is appropriate, reliable, and stable for policy analysis and forecasting of stock market returns in Nigeria.

The diagnostic tests collectively support the reliability of the estimated results. There is no evidence of heteroskedasticity, functional form misspecification, or non-normality of residuals, while serial correlation does not pose a serious concern. This implies that the estimated coefficients, even when statistically insignificant, are not biased due to econometric violations, but rather reflect underlying economic realities captured by the model

Overall, the findings suggest that SMR is not strongly anchored to conventional macroeconomic fundamentals, but rather evolves through a combination of gradual inflationary effects, internal persistence, and occasional external shocks. This has important implications: policy instruments such as interest rates, exchange rate adjustments, or liquidity expansion may have limited direct influence on SMR, at least within the structure captured by this model.

4.1 Diagnostic and Stability Tests

To ensure the reliability, consistency, and stability of the estimated ARDL model, several post-estimation diagnostic and robustness tests were conducted. These include the Variance Inflation Factor (VIF) test for multicollinearity, Breusch–Godfrey Serial Correlation LM test, heteroskedasticity tests, Ramsey RESET specification test, Jarque–Bera normality test, and the CUSUM/CUSUMSQ stability tests. The results are presented below.

Table 7: ***Variance Inflation Factor (VIF) Test***

Variable	Centered VIF
INFL	1.305
TBR	1.886
lnEXCR	2.957
MSGR	1.568
OIL	1.985
FPI	1.697

Source: Authors' Computation (2026)

The Variance Inflation Factor (VIF) test was conducted to examine the presence of multicollinearity among the explanatory variables. Multicollinearity becomes problematic when VIF values exceed the conventional threshold of 5 or 10. The results show that all centred VIF values are substantially below the critical threshold of 5, with the highest value being 2.957 for exchange rate. This indicates the absence of harmful multicollinearity among the regressors. Consequently, the explanatory variables are

sufficiently independent of one another, and the estimated coefficients are stable and reliable for inference.

Table 8: ***Diagnostic Test Results***

Diagnostic Test	**Statistic**	**Probability**
Breusch–Godfrey Serial Correlation LM Test	2.170379	0.3378
Heteroskedasticity Test: Breusch–Pagan–Godfrey	5.464453	0.9635
ARCH Heteroskedasticity Test	0.054093	0.8161
Ramsey RESET Test	0.005871	0.9396
Jarque–Bera Normality Test	1.767698	0.413190

Source: Authors' Compilation (2026)

The Breusch–Godfrey Serial Correlation LM test was employed to examine whether the residuals of the estimated ARDL model are serially correlated. The probability value of 0.3378 exceeds the 5% significance level; therefore, the null hypothesis of no serial correlation cannot be rejected. This confirms that the residuals are independently distributed and that the model does not suffer from autocorrelation problems.

The Breusch–Pagan–Godfrey heteroskedasticity test and ARCH test were further conducted to examine the constancy of the residual variance. The probability values of 0.9635 and 0.8161 respectively indicate the absence of heteroskedasticity effects. This implies that the variance of the error term remains constant over the sample period, thereby satisfying one of the key assumptions of classical regression estimation. The Ramsey RESET test was conducted to examine possible functional form misspecification in the estimated model. The probability value of 0.9396 indicates that the null hypothesis of correct model specification cannot be rejected. This confirms that the model is properly specified and does not omit significant nonlinear relationships.

The Jarque–Bera normality test further reveals that the residuals are normally distributed, as indicated by the probability value of 0.413190, which exceeds the 5% significance level. The normality of the residuals enhances the reliability of statistical inference and confirms the adequacy of the estimated ARDL model.

Collectively, the diagnostic test results indicate that the estimated model is econometrically sound, free from major specification errors, and suitable for reliable policy interpretation and forecasting.

Table 9: ***Stability Test Results***

Stability Test	**Result**
CUSUM Test	Stable
CUSUMSQ	Stable

Source: Authors' Computation (2026)

The structural stability of the estimated ARDL model was examined using the Cumulative Sum (CUSUM) and Cumulative Sum of Squares (CUSUMSQ) tests (see Figures 1 and 2). The CUSUM plot shows that the recursive residuals remain within the 5% critical bounds throughout the sample period, indicating parameter stability and the absence of systematic structural instability in the estimated coefficients.

Similarly, the CUSUMSQ plot remains within the critical boundaries, confirming the stability of the variance of the residuals over time. The combined results of the CUSUM and CUSUMSQ tests therefore indicate that the estimated ARDL model is stable, robust, and reliable for long-run and short-run policy analysis.

Figure 2: CUSUM Test

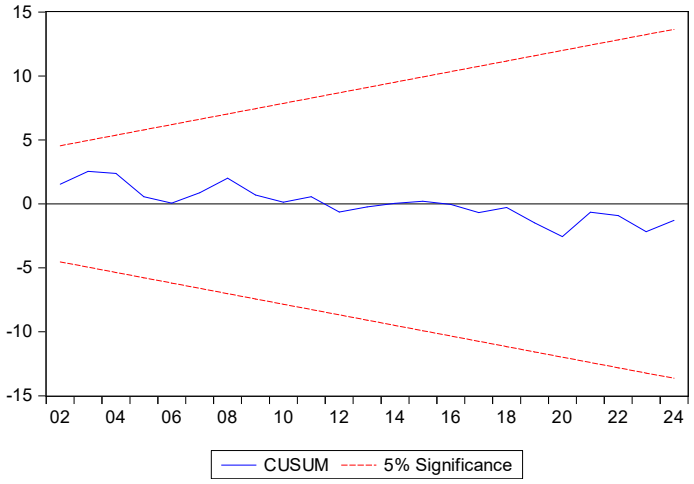

Figure 3: CUSUMSQ Test

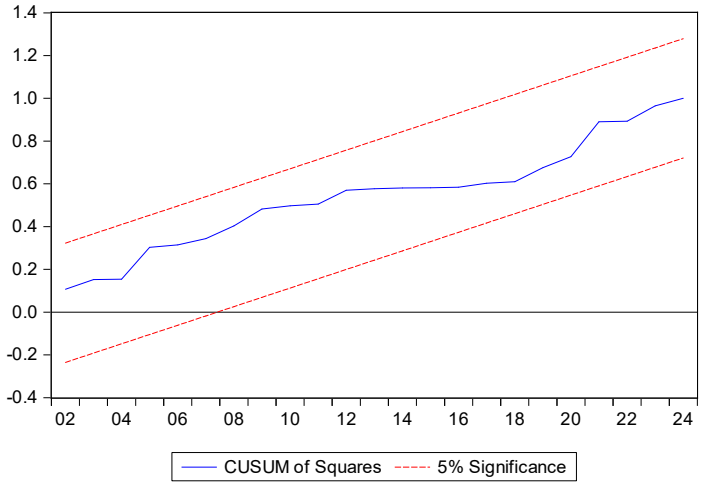

Figure 4: Residual Normality Test

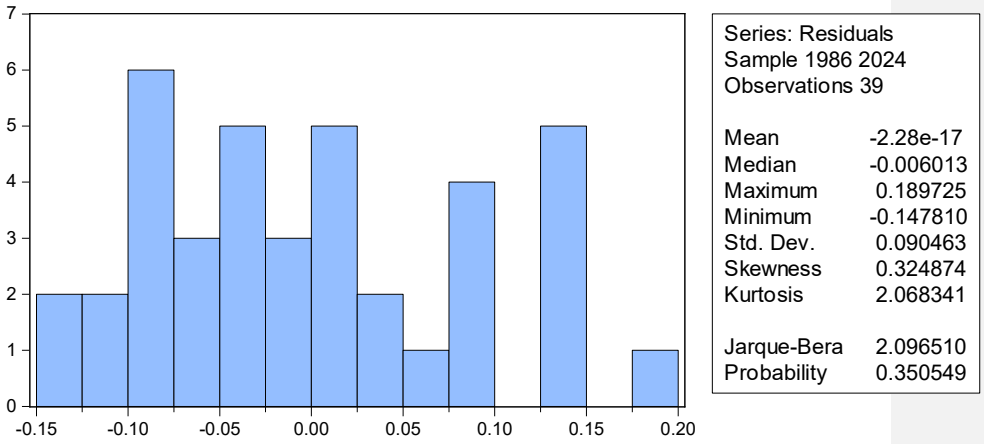

Table 10: TYDL Approach to Long-Run Granger Causality estimates for the model

Dependent Variable	Sources of Causality						
	SMR	**INFL**	**TBR**	**MSGR**	**lnEXCR**	**OIL**	**FPI**
SMR		2.540	3.916	0.056	0.157	0.701	0.086
INFL	1.079		6.383**	0.359	2.112	0.724	0.241
TBR	6.205**	5.173*		3.636	2.196	5.082**	2.001
MSGR	1.760	1.032	0.724		1.602	0.980	0.049
lnEXCR	2.064	3.184	4.186	1.767		1.410	0.475
OIL	1.109	1.213	1.134	2.909	5.067*		4.928
FPI	2.223	1.525	10.662	4.030	1.135	14.848***	

Source: Authors Compilation (2026)

A central feature of the results in Table 10 is the dominant role of the Treasury bill rate (TBR) as both a driver and a recipient of causality. Specifically, TBR is found to Granger-cause SMR, inflation, and the exchange rate, while it is itself influenced by

SMR, inflation, and oil price. This positioning establishes TBR as a key transmission channel within the system, reflecting its function as a policy instrument that both responds to macroeconomic conditions and transmits policy signals to other variables.
Closely related to this is the presence of feedback mechanisms, particularly between inflation and TBR. The bidirectional causality between these variables suggests a policy-response loop, where monetary authorities adjust interest rates in response to inflationary pressures, and these adjustments in turn influence future inflation dynamics. A similar feedback pattern is observed between SMR and TBR, indicating that SMR is not only influenced by monetary policy but may also provide informational signals that feed back into policy decisions.

In terms of the dependent variable, the results show that SMR is Granger-caused only by TBR, with no significant predictive influence from inflation, exchange rate, money supply growth, oil price, or foreign portfolio investment. This indicates that interest rate dynamics constitute the primary channel through which macroeconomic conditions affect SMR, while other variables do not exhibit meaningful predictive power.

At the same time, SMR Granger-causes TBR, reinforcing the existence of a bidirectional relationship. This suggests that movements in SMR are not entirely passive but may influence monetary policy decisions, possibly through their implications for financial stability or market conditions.
Money supply growth (MSGR) stands out as largely disconnected, with no significant causal relationships either as a source or recipient. This implies that, within this system, money supply does not serve as an effective transmission mechanism for influencing other macroeconomic variables.
Oil price behaves as a predominantly exogenous variable, which is consistent with its determination in international markets. Its causal influence on TBR and exchange rate underscores its importance as an external shock variable, even though it does not receive feedback from the domestic economy.

Foreign portfolio investment (FPI), on the other hand, is characterised by strong persistence, as evidenced by the high significance of its own lag. However, it neither significantly influences nor is influenced by most of the other variables. This suggests that FPI dynamics are driven more by external or global financial conditions than by domestic macroeconomic fundamentals captured in the model.

The causality pattern suggests that macroeconomic dynamics are internally interactive but selectively transmitted, with monetary policy acting as the main conduit through which influences propagate. However, the limited number of significant causal paths, particularly toward SMR, indicates that the system is not broadly responsive to multiple macroeconomic drivers, but rather depends on a few critical channels, most notably the interest rate mechanism. This highlights a structure where policy and external shocks matter, but their influence is neither widespread nor uniformly distributed across variables.

The ARDL results indicate that the macroeconomic environment exerts limited direct influence on SMR, with only inflation showing a statistically significant long-run effect. However, the TYDL causality results refine this conclusion by revealing that the Treasury bill rate (TBR) Granger-causes SMR, even though its coefficient is insignificant in the ARDL framework. This apparent divergence is analytically meaningful rather than contradictory.

Specifically, the TYDL result (TBR → SMR) suggests that monetary policy has predictive relevance for SMR over time. In other words, past values of TBR contain information useful for forecasting SMR, even if the magnitude of its effect is not sufficiently strong or stable to manifest as a significant long-run coefficient. When harmonised with the ARDL findings, this implies that monetary policy influences SMR indirectly or with lagged and diffuse effects, rather than through a strong and immediate transmission channel.

In contrast, other macroeconomic variables, exchange rate, money supply growth, oil price, and foreign portfolio investment, are neither statistically significant

in the ARDL model nor do they exhibit causal influence on SMR in the TYDL framework. This consistency strengthens the conclusion that SMR is largely insulated from conventional macroeconomic drivers, and that its behaviour is not strongly anchored to these variables in either a structural or predictive sense.

The causality results further reveal a dense network of interrelationships among the explanatory variables themselves, even though these do not translate into strong effects on SMR. Notably, there is evidence of bidirectional causality between inflation and Treasury bill rate, indicating a feedback mechanism consistent with monetary policy practice, where interest rates respond to inflation, and inflation dynamics are in turn influenced by policy actions. Similarly, Treasury bill rate and oil price are found to Granger-cause exchange rate movements, reflecting the combined role of monetary policy and external sector dynamics in shaping currency behaviour.

Despite this interconnected macroeconomic system, the weak transmission to SMR suggests a disconnect between macroeconomic policy variables and the dependent variable. This reinforces the earlier ARDL insight that SMR dynamics are largely driven by internal adjustment mechanisms, as evidenced by the significance of the lagged dependent variable and the error correction term. The strong and negative error correction coefficient confirms that deviations from long-run equilibrium are corrected rapidly, albeit with overshooting, indicating that SMR adjusts primarily through its own internal dynamics rather than through external macroeconomic shocks. The TYDL results also show that SMR does not significantly Granger-cause other variables, confirming its role as a passive variable within the system. This further aligns with the ARDL evidence, where SMR responds to disequilibrium and past values rather than actively influencing the broader macroeconomic environment.

An additional layer of insight comes from the role of structural shocks. While the ARDL results show that the 2008 financial crisis had a significant short-run negative effect on SMR, the TYDL framework does not indicate persistent causal propagation of such shocks through the system. This suggests that external shocks affect SMR in

the short term but do not fundamentally alter long-run causal relationships, supporting the notion of eventual reversion to equilibrium.

4.2 Discussion of Findings

The empirical results of this study, when situated within the broader Nigerian literature and theoretical frameworks, point to a more selective and structurally constrained macro–stock market linkage than is commonly reported. The evidence indicates that only inflation exerts a significant long-run effect on stock market returns (SMR), while other macroeconomic variables remain largely insignificant, with causality confined mainly to the interest rate channel. This outcome contrasts with, but also refines, existing empirical and theoretical expectations. More importantly, the findings suggest that the Nigerian stock market does not respond uniformly to macroeconomic fundamentals; rather, macroeconomic influences appear to be transmitted selectively, indirectly, and through weak institutional and financial channels.

A substantial body of prior Nigerian studies, such as those by Ogunsakin and Awe (2020), Okoro and Okoro (2023), and Udo et al. (2022), argue that stock market performance is broadly determined by a combination of macroeconomic variables, including interest rate, exchange rate, oil price, and money supply. These studies typically report significant and theoretically consistent relationships, thereby supporting the notion of a strong macroeconomic foundation for stock market behaviour. However, the present findings do not fully corroborate this position. Instead, they suggest that the influence of macroeconomic variables is narrow rather than comprehensive, with most variables failing to exhibit either statistical significance or causal relevance. This divergence implies that the macroeconomic transmission mechanism in Nigeria may be weaker, unstable, or highly conditional on model specification, policy regime, and the structural characteristics of the financial system.

The findings further indicate that inflation represents the most important long-run macroeconomic variable influencing SMR in Nigeria. Economically, this positive long-

run relationship may reflect the tendency of investors to treat equities as a partial hedge against inflationary erosion of wealth, especially during periods of persistent macroeconomic instability. In an environment characterised by high and persistent inflation, nominal corporate revenues and asset prices may rise even when real productive performance remains weak, thereby increasing nominal stock valuations. This suggests that investors may shift away from fixed-income securities toward equities in an attempt to preserve the real value of wealth. However, the absence of significant short-run inflation effects indicates that the transmission mechanism is gradual rather than immediate, likely reflecting adaptive expectations, delayed portfolio adjustments, and informational inefficiencies within the Nigerian capital market. Inflationary pressures also increase uncertainty regarding future earnings, monetary policy direction, and discount rates, thereby complicating the asset pricing process and weakening the precision of market valuation.

At the same time, the results are not entirely isolated from the empirical literature. They align more closely with studies such as Ekpete (2012) and Ghanador (2024), which report weak or insignificant effects of key macroeconomic variables, particularly in the short run. Similarly, Arikewuyo (2023) finds that exchange rate shocks do not significantly influence stock market deepening, reinforcing the present study's conclusion that exchange rate dynamics may not be as dominant as often assumed. Nevertheless, this does not imply that exchange rate fluctuations are economically irrelevant. In Nigeria, exchange rate movements affect stock market performance indirectly through imported inflation, production costs, investor confidence, and foreign capital flows. Since many listed firms depend heavily on imported machinery, raw materials, and intermediate inputs, exchange rate depreciation increases operating costs and compresses profit margins. Exchange rate instability also heightens uncertainty regarding future earnings and weakens foreign investor confidence because of concerns over currency conversion losses and capital repatriation risks. However, the insignificance of exchange rate in the estimated model suggests that

these effects may already be internalised as structural features of the Nigerian economy, thereby limiting their marginal predictive influence on stock returns.

This strand of evidence therefore suggests that macroeconomic variables do not exert uniformly strong or stable effects on the Nigerian stock market, thereby supporting a more cautious interpretation of their role. The findings imply that macroeconomic conditions influence stock returns only when transmission channels are sufficiently effective and credible. In an environment characterised by structural rigidities, policy uncertainty, shallow market depth, and speculative investor behaviour, macroeconomic signals may not translate efficiently into stock market outcomes.

Further consistency is observed in relation to studies on external shocks and risk factors. For instance, the significant short-run impact of the 2008 crisis dummy in the present study resonates with the findings of Takyi and Bentum-Ennin (2021), who document the adverse but largely short-lived effects of COVID-19 on African stock markets. This indicates that external shocks tend to have immediate but transitory effects, without fundamentally altering long-run relationships. The significant negative short-run effect of the 2008 dummy reflects the vulnerability of the Nigerian stock market to sudden global liquidity contractions, panic-driven selloffs, and investor pessimism during crisis periods. However, the eventual reversion to equilibrium suggests that such shocks, although disruptive in the short term, do not permanently redefine the structural behaviour of the market.

Similarly, the limited role of oil price and exchange rate in the present model contrasts with Ogiemudia (2022), who finds these variables significant, but still supports the broader notion that not all macroeconomic risks are equally transmitted to stock returns. Given Nigeria's dependence on crude oil exports, oil price shocks remain economically important because they affect government revenue, foreign exchange earnings, fiscal balances, and exchange rate stability. Positive oil price shocks typically improve external reserves, strengthen fiscal capacity, and enhance investor confidence, while negative shocks weaken macroeconomic stability and intensify exchange rate

pressures. However, the insignificance of oil price in the ARDL estimation suggests that oil price effects operate indirectly through other macroeconomic channels, particularly monetary conditions and exchange rate dynamics, rather than through direct valuation effects on stock returns. This interpretation is reinforced by the TYDL causality results, which indicate that oil prices influence Treasury bill rate and exchange rate dynamics within the system.

With respect to capital flows, the insignificance of foreign portfolio investment (FPI) in this study challenges the strong emphasis placed on it in works such as Adumah et al. (2024) and Alalade et al. (2024), where FPI is shown to influence market development. Instead, the present findings suggest that FPI behaves more as a persistent but weakly integrated variable, driven largely by its own dynamics or external global financial conditions rather than domestic macroeconomic fundamentals. This reinforces the argument that Nigeria's capital market may not be deeply integrated with global financial flows in a way that systematically affects market performance. The high persistence of FPI further suggests that foreign capital movements respond more strongly to exchange rate expectations, global risk sentiment, and international monetary conditions than to domestic macroeconomic fundamentals captured in the model. Consequently, episodes of capital inflows and reversals may contribute to market volatility without establishing stable long-run relationships with stock returns.

The TYDL causality results further identify Treasury bill rate as the principal macro-financial transmission mechanism influencing SMR. Although Treasury bill rate is statistically insignificant in the ARDL long-run estimation, its causal influence on SMR suggests that monetary policy possesses predictive relevance for stock market behaviour. Economically, Treasury bill rates represent the benchmark risk-free return within the financial system and therefore influence portfolio allocation decisions between equities and fixed-income securities. Higher Treasury bill rates increase the attractiveness of government securities relative to equities, thereby reducing stock market liquidity and investor demand for shares. Conversely, lower interest rates

encourage investors to shift toward equities in search of higher returns. The bidirectional causality between Treasury bill rate and inflation also reflects a policy-response mechanism in which monetary authorities adjust interest rates in response to inflationary pressures, while interest rate movements subsequently shape inflation expectations and financial market conditions. This finding underscores the central role of monetary conditions in influencing capital market performance, even when the transmission effects are indirect or diffuse.

The weak and insignificant role of money supply growth further indicates limited monetary transmission efficiency within the Nigerian financial system. Under normal theoretical conditions, increases in money supply are expected to stimulate investment activity and improve stock market performance through enhanced liquidity and lower financing costs. However, the present findings suggest that liquidity expansion does not effectively translate into increased capital market activity, likely due to structural bottlenecks, underdeveloped financial intermediation, weak investor participation, and low market depth.

When interpreted through the lens of the Arbitrage Pricing Theory (APT), the results provide only partial support. APT posits that asset returns are driven by multiple systematic risk factors, including macroeconomic variables. The significance of inflation and the causal role of interest rate are consistent with this framework, indicating that some macroeconomic risks are indeed priced within the Nigerian stock market. However, the absence of significance for most other variables contradicts the core APT proposition of multiple pervasive risk factors. This suggests that the Nigerian stock market does not fully conform to the assumptions of APT, likely due to market imperfections, structural rigidities, weak policy transmission, and incomplete integration between macroeconomic fundamentals and financial asset pricing.

In contrast, the findings align more strongly with behavioural finance theory. The weak linkage between SMR and macroeconomic fundamentals suggests that market outcomes are not purely driven by rational valuation based on economic variables.

Instead, the significance of the lagged dependent variable points to persistence and momentum effects, while the large error correction coefficient indicates overshooting and possible overreaction to disequilibrium. Additionally, the pronounced short-run effect of crisis periods reflects investor sentiment, panic-driven adjustments, and speculative reactions, all of which are central to behavioural explanations of financial market behaviour. These outcomes imply that investor psychology, adaptive expectations, and informational inefficiencies play substantial roles in shaping stock market performance in Nigeria.

In synthesising these insights, the study suggests that the Nigerian stock market operates within a hybrid framework. On one hand, there is limited evidence of macroeconomic pricing consistent with APT, particularly through inflation and interest rate channels. On the other hand, the dominance of internal market dynamics, weak macroeconomic transmission, selective policy responsiveness, and sensitivity to shocks point toward a market that is behaviourally influenced and structurally constrained.

The implication is that while macroeconomic policy remains relevant, its ability to influence stock market performance is neither broad-based nor uniformly effective. Rather, stock market outcomes in Nigeria appear to depend on selective macroeconomic signals, internal adjustment dynamics, external vulnerability, and behavioural responses. This highlights the need for policy measures that go beyond macroeconomic stabilisation to include improvements in institutional quality, market efficiency, investor protection, information dissemination, and policy credibility in order to strengthen the responsiveness of the Nigerian stock market to macroeconomic fundamentals.

6. CONCLUSION AND RECOMMENDATIONS

This study re-examined the dynamic relationship between selected macroeconomic variables and stock market-related performance (SMR) in Nigeria using the ARDL framework and the Toda–Yamamoto/Dolado–Lütkepohl (TYDL) causality approach. The results provide a nuanced understanding of how macroeconomic fundamentals interact with stock market behaviour in both the long run and short run.

The ARDL findings reveal that inflation is the only macroeconomic variable with a statistically significant long-run effect on SMR, while other variables, Treasury bill rate, exchange rate, money supply growth, oil price, and foreign portfolio investment, do not exhibit significant direct effects. In the short run, macroeconomic variables remain largely insignificant, with SMR dynamics driven primarily by its own past values and adjustment to long-run equilibrium. The error correction mechanism confirms the existence of a long-run relationship, although the speed of adjustment suggests overshooting and instability in the adjustment process.

The TYDL causality results further indicate that causality is selective rather than widespread, with treasury bill rate emerging as the only variable that Granger-causes SMR. At the same time, macroeconomic variables display interdependence among themselves, particularly between inflation and interest rate, without translating into a strong influence on SMR. External variables such as oil price and foreign portfolio investment behave largely as exogenous or weakly integrated factors within the system. Overall, the findings suggest that the Nigerian stock market is not strongly anchored to a broad set of macroeconomic fundamentals but rather responds to a limited set of variables, notably inflation and interest-rate signals. The dominance of internal dynamics, persistence, and short-run responses to shocks indicates that market behaviour is shaped as much by structural and behavioural factors as by macroeconomic conditions. Consequently, the explanatory power of traditional macroeconomic models, such as the Arbitrage Pricing Theory, appears limited in this

context, while behavioural finance provides a more compelling lens for understanding observed patterns. The study concludes that while macroeconomic variables remain relevant, their influence on stock market performance in Nigeria is limited, selective, and mediated by structural and behavioural factors. Effective policy intervention, therefore, requires a holistic approach that combines macroeconomic stability with institutional strengthening and market development

The study recommends that policymakers, particularly the Central Bank of Nigeria, should prioritise maintaining price stability through consistent and credible monetary policies, while also strengthening the transmission mechanism of monetary policy to ensure that interest rate signals effectively influence the capital market. In addition, there is a need to enhance market efficiency by improving transparency, disclosure standards, and investor education so that macroeconomic information is properly reflected in stock prices. Structural and institutional reforms should be pursued to deepen the financial market, strengthen regulatory frameworks, and improve corporate governance, thereby increasing the responsiveness of the stock market to economic fundamentals. Furthermore, measures should be implemented to enhance the market's resilience to external shocks, including the development of hedging instruments and diversification strategies, while policies on foreign portfolio investment should focus not only on attracting inflows but also on ensuring their stability and productive integration into the economy. Finally, future research should incorporate behavioural and institutional variables to provide a more comprehensive understanding of stock market dynamics in Nigeria.

REFERENCES

Acemoglu, D., & Robinson, J. A. (2012). *Why nations fail: The origins of power, prosperity, and poverty*. Crown Publishers.

Adekoya, O. B., & Oliyide, J. A. (2021). Do global economic uncertainties affect financial markets? Evidence from emerging markets. *International Review of Economics & Finance, 71*, 214–236. https://doi.org/10.1016/j.iref.2020.08.019

Adekoya, O. B., & Oliyide, J. A. (2021). How COVID-19 drives connectedness among commodity and financial markets. *Resources Policy, 70*, Article 101898. https://doi.org/10.1016/j.resourpol.2020.101898

Adumah, P. C., Anyanwu, U. N., & Nwokoye, M. (2024). Foreign portfolio investment and capital market development in Nigeria. *African Journal of Management and Business Research, 17*(1), 1–17.

Akanbi, S. B. (2025). Macroeconomic environment and stock market performance in Nigeria. *Journal of African Financial Markets, 12*(1), 44–60.

Alalade, Y. S., Oliyide, J. A., Okwu, A. T., Adebola, S. S., Ademola, A. A., & Ogunwale, S. (2024). Foreign portfolio investment and macroeconomic indicators in Nigeria. *Journal of Finance and Capital Markets, 19*(2), 77–94.

Apergis, N., & Eleftheriou, S. (2002). Interest rates, inflation, and stock prices: The case of the Athens Stock Exchange. *Journal of Policy Modeling, 24*(3), 231–236. https://doi.org/10.1016/S0161-8938(02)00105-9

Arikewuyo, K. A. (2023). Dynamic effect of exchange rate gap shocks on stock market deepening: Evidence from Nigeria. *CBN Journal of Applied Statistics, 14*(1), 93–119.

Banerjee, A., Dolado, J., & Mestre, R. (1998). Error-correction mechanism tests for cointegration in a single-equation framework. *Journal of Time Series Analysis, 19*(3), 267–283.

Barberis, N., & Thaler, R. H. (2003). A survey of behavioral finance. In G. M. Constantinides, M. Harris, & R. M. Stulz (Eds.), *Handbook of the economics of finance* (Vol. 1, pp. 1053–1128). Elsevier. https://doi.org/10.1016/S1574-0102(03)01027-6

Bekaert, G., & Harvey, C. R. (1997). Emerging equity market volatility. *Journal of Financial Economics, 43*(1), 29–77. https://doi.org/10.1016/S0304-405X(96)00889-6

Campbell, J. Y., & Shiller, R. J. (1988). The dividend-price ratio and expectations of future dividends and discount factors. *Review of Financial Studies, 1*(3), 195–228. https://doi.org/10.1093/rfs/1.3.195

Chen, N. F., Roll, R., & Ross, S. A. (1986). Economic forces and the stock market. *Journal of Business, 59*(3), 383–403. https://doi.org/10.1086/296344

Ebi, B. O., & Galeed, M. A. (2022). Stock market performance and macroeconomic fundamentals in Nigeria. *International Journal of Economics and Financial Issues, 12*(1), 10–20.

Ekpete, K. (2012). Macroeconomic effects on stock market returns in Nigeria. *Nigerian Journal of Monetary Economics, 8*(2), 55–72.

Evbayiro-Osagie, E., Bello, K., & Okonkwo, R. (2024). Macroeconomic variables and stock returns in Nigeria: ARDL approach. *Journal of African Economic Studies, 16*(1), 88–104.

Fagunmoju, S., Adeyemi, K., & Olowokere, A. (2021). Macroeconomic influences on stock market returns in Nigeria. *African Review of Economics and Finance, 13*(3), 1–21.

Ghanador, J. (2024). Macroeconomic determinants of stock price behaviour in Nigeria. *West African Journal of Financial Studies, 11*(2), 65–85.

Gina, O., Okoro, P., & Pedro-Itota, R. (2023). Foreign direct investment and capital market development in Nigeria. *Journal of Economics and Sustainable Finance, 14*(2), 120–138.

Gordon, M. J. (1962). *The investment, financing, and valuation of the corporation*. Richard D. Irwin.

Kremers, J. J. M., Ericsson, N. R., & Dolado, J. J. (1992). The power of cointegration tests. *Oxford Bulletin of Economics and Statistics, 54*(3), 325–348.

Ogunsakin, S., & Awe, A. A. (2020). Macroeconomic determinants of stock market performance in Nigeria. *Journal of Economics and Financial Analysis, 4*(2), 45–63.

Ogiemudia, A. O. (2022). Market risk and equity returns in Nigeria. *Nigerian Journal of Finance and Risk Management, 9*(1), 66–84.

Okoro, C. U., & Okoro, E. I. (2023). Macroeconomic variables and stock market performance in Nigeria: An ARDL approach. *Journal of Financial Economic Policy, 15*(2), 145–163.

Pesaran, M. H., & Shin, Y. (1995). An autoregressive distributed lag modelling approach to cointegration analysis. In S. Strom (Ed.), *Econometrics and economic theory in the 20th century: The Ragnar Frisch Centennial Symposium* (pp. 371–413). Cambridge University Press.

Pesaran, M. H., & Shin, Y. (1998). An autoregressive distributed lag modelling approach to cointegration analysis. *Econometric Society Monographs, 31*, 371–413.

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

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

Takyi, P. O., & Bentum-Ennin, I. (2021). COVID-19 and African stock markets. *Review of Development Finance, 11*(1), 1–13. https://doi.org/10.1016/j.rdf.2021.03.002

Toda, H. Y., & Yamamoto, T. (1995). Statistical inference in vector autoregressions with possibly integrated processes. *Journal of Econometrics, 66*(1–2), 225–250. https://doi.org/10.1016/0304-4076(94)01616-8

Udo, E., Odey, A., & Jacob, J. (2022). Macroeconomic indicators and stock market performance in Nigeria: ARDL analysis. *Journal of Economic Growth and Finance, 7*(2), 56–74.

Umar, Z., Shahzad, S. J. H., Ferrer, R., & Jareño, F. (2020). Does investor sentiment matter? *International Review of Financial Analysis, 71*, Article 101496. https://doi.org/10.1016/j.irfa.2020.101496

World Bank. (2025). *World development indicators*. World Bank. https://databank.worldbank.org/source/world-development-indicators

Yamada, H., & Toda, H. Y. (1998). Inference in possibly integrated vector autoregressive models: Some finite sample evidence. *Journal of Econometrics, 86*(1), 55–95. https://doi.org/10.1016/S0304-4076(97)00109-7

Yartey, C. A. (2008). Determinants of stock market development in emerging economies. *IMF Working Papers, 08*(32), 1–31. https://doi.org/10.5089/9781451868928.001

Yusuf, A., Ibrahim, D., & Musa, T. (2025). Monetary policy and stock market performance in Nigeria. *Nigerian Journal of Financial Economics, 15*(1), 22–39.