International Journal of Scientific Research in Social Sciences & Management Studies
p-ISSN: 2579–101X | e-ISSN: 2579–1928
Volume 8, Number 2 May, 2025
IJSRSSMS

Impact of Macroeconomic Variables on Stock Market Performance in Nigeria (1986 – 2023)

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Article DOI: 10.48028/iiprds/ijsrssms.v8.i2.12

Abstract

Stock markets play a crucial function in the monetary intermediation in the economies of the world by offering a platform for procuring long term capital for development purposes in both private and public organizations. Certain macroeconomic variables in an economy influence the efficient performance of the stock market. The sensitivity of stock performance can be judged based on the movement of these variables. As such, this study investigates the impact of macroeconomic variables on stock market performance in Nigeria from 1986 to 2023. The paper used secondary time series data sourced from the central bank statistical bulletin. This data collected were analyzed using ARDL model and Error Correction model (ECM) estimation technique. The long-run revealed that money supply, exchange rate, government revenue, government expenditure had positive influence on stock market performance while interest rate and external debt had negative on stock market performance in Nigeria. Based on these results the paper therefore recommended that, Central Bank of Nigeria (CBN) through Monetary Policy committee (MPC) should make efforts to stabilize the monetary system by lowing the interest rates. In addition, Central Bank of Nigeria (CBN) through Currency Operations Department should stable and sufficient level of liquidity (money supply) in the economy, because it drives capital market investment that promotes the efficiency and performance of the stock market. Furthermore, central monetary authorities should formulate and implement measures aimed at strengthening the structural resilience of exchanges rate, considering the positive relationship between exchange rate and stock market performance in the long run. Lastly, external debt has a negative impact stock market performance in the long run. Therefore, policies should be put in place by the office of debt management to reduce the existing debt to prevent the economy from experiencing debt overhang, that may distort the performance of stock market in the long run.

Keywords: *Financial Market; Stock Market; Macroeconomic Variables; Monetary Policy; Fiscal Policy*

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Background to the Study

The world economy as it is today is highly interconnected at various levels of economic transactions. No economy is in isolation, every economy in the world today depends on another for one good or the other. The Nigerian economy is not an exception because the economy is deeply involved in international trade. The involvement of the Nigerian economy in international trade became serious with the implementation of trade liberalization in 1986. At the core of every international transaction lies the vital role of stock markets. Stock markets play a crucial function in the monetary intermediation of any economy in the world. The stock market offers a platform for procuring long term capital for development purposes in both private and public organizations. Due to the role played by the capital market in providing investment opportunities and avenues for sourcing for capital, it is expected that the capital market should be efficient. The reason is that, the efficiency of the stock market has a role to play regarding the expected returns on stocks traded in the market. (Gbanador, 2018; Gbanador, 2021). Stock market is the engine of growth of an economy, which mobilizes capital for corporate organizations and offers investment options to the national, international, institutional and individual investors who usually aim at maximizing their returns and wealth (Nijam *et al.*, 2015). Stock market plays a vital role in the mobilization of capital in evolving and industrialized countries, leading to the growth of industry and commerce of a country.

However, the presence and volatility of macroeconomic variables provide an indication to stock market participants to anticipate a higher or lower return when investing in a stock. The variations in macroeconomic variables can significantly influence the stock market prices (Omodero & Mlanga, 2019). The influences of macroeconomic variables on stock market arouses the interest of both the economists and investors (Barakat *et al.*, 2016). This interest helps to get the attention of policy makers and market participants who help to forecast the overall effects of these economic indicators and incorporate them into their policy decisions. The investors and the entire populace also benefit from it since the awareness will help the investors to make informed investment decisions while members of the public prepare to adjust for the shock it might bring.

The performance of a nation's stock market generally determines the economic performance of the country (Gatsimbazi *et al.*, 2018). The Nigerian Stock Exchange market has exhibited tremendous improvement in stock indices as an obvious transformation has been witnessed in the market (Riman *et al.*, 2008). This is evidenced by the number of public and private participants on the floor of the market. For example, the overall market capitalization had risen consistently from N6.6 billion in 1985 to N285.8 billion in 1996, though fell marginally to N281.9 billion in 1997, and rose again to N472.3 billion in 2000. It increased from N662.5 billion in 2001 to N9, 918.2 billion in 2010, and then increased steadily from N10, 275.3 billion in 2011 to N19, 077.4 billion in 2015 before plummeting to N16, 185.7 billion in 2016 due to the 2014/2015 – 2017 economic recession. The recovery from the crisis led to an increase in market capitalization from N16,185.7 billion to N21,904.0 billion and N75,202.9 billion in 2016, 2020 and 2023, respectively (CBN, 2023).

Stock market performance can also be influenced by various factors beyond macroeconomic variables. These include; seasonal variations, enlightenment of the investing public or general awareness of the market, and political and social crisis. Others are investment motives, random behavior of investors, new listing of securities, and individual investor's objective in the market (speculation on long-term investment), company's earnings release and activities of the market regulator (Osisanwo & Atanda 2012). Nevertheless, certain macroeconomic variables in an economy influence the efficient performance of the stock market. The sensitivity of stock performance can be judged based on the movement of these variables. Predication on these, foreign investors and governments can make rational decisions on the allocation and timing of acquiring stocks on the floor of the market. The focus of this study is to investigate the impact of these macroeconomic variable's fluctuations on stock market performance in Nigeria. The specific objectives of this paper are to: examine the impact of interest rate on stock market performance in Nigeria, investigate the impact of money supply on the stock market performance in Nigeria, ascertain the impact of exchange rate on the stock market performance in Nigeria, evaluate the impact of external debt on the stock market performance in Nigeria, investigate the impact of government expenditure on the stock market performance in Nigeria and examine the impact of government revenue on the stock market performance in Nigeria.

Literature Review

Conceptual Review

Stock Market Performance

Stock market performance is the indicator of the stock market as a whole or of a specific stock. It gives signal to the investors about their future moves. The movement in the price of a stock and the indexes give the idea of the near future trend of the stock, sector or the economy as a whole. As the financial domain is the most important in an economy, the stock market performance works as an indicator of the overall health of the economy (Economywatch, 2010). Stock market is also knowing as the equity market or share market, is a platform where publicly traded companies' shares are issued, bought, and sold. It provides a mechanism for companies to raise capital by issuing stocks and for investors to participate in the growth and profits of these companies. Muneerah (2021) defined stock market as a complex institution imbued with inherent mechanism through which long-term funds of the major sectors of the economy comprising households, firms, and government are mobilized, harnessed and made available to various sectors of the economy. Market capitalization is the total value of a publicly traded company's outstanding common shares owned by stockholders (Chukwunulu & Ibenta, 2021).

Macroeconomic Variables

Macroeconomic variables are key statistics that provide insights into the overall health and performance of an economy (Shpak, 2022). These indicators help policymakers, businesses, and investors to understand the current economic situation, forecast future trends, and make informed decisions. Some common macroeconomic indicators are Gross Domestic Product (GDP), inflation rate, unemployment rate, and balance of trade. Macroeconomic indicators are essential tools for assessing the health of an economy and in guiding policy decisions

(Mügge, 2015). They also serve as yardsticks for citizens to assess the performance of politicians. The relationship between macroeconomic indicators and economic cycles has been studied, it revealed significant co-movements among these indicators and identified noteworthy economic events (Iyetomi, 2020). Furthermore, macroeconomic indicators have been studied in the context of specific policies, such as raw material policy in Slovakia, where they form the basic platform of functioning for all national economic sectors (Pavolová, 2019).

Interest Rate

Interest rate affect stock market by affecting discount rate that is randomly used in valuation techniques. According to Ogundajo *et al.* (2019) interest rate is the addition to the borrowed amount or principal usually expressed in percentage. This definition clearly shows that interest is a concept which can mean different things depending on the perspective it is viewed. Interest rate can therefore be seen as a nebulous concept, a position affirmed by the availability of different types of this rate. Some of which are; savings rate, discount rate, lending rate and Treasury bill rate. According to Casadas (2015) interest rate is a cost of borrowing money, expressed as a percentage of the amount borrowed.

Exchange Rate

Exchange rate is the rate at which one currency will be exchanged for another. It is also regarded as the value of one country's currency in terms of another country's currency. This rate depends on the local demand for foreign currencies and their local supply, country's trade balance, strength of its economy, and other such factors. An exchange rate is how much it costs to exchange one currency for another. Exchange rates fluctuate constantly throughout the week as currencies are actively traded. The exchange rate in Nigeria is the number of naira needed to buy one unit of another country's currency (Campbell, 2018). In the age of trade liberalization, a right policy mix is essential since exchange rate fluctuations affect the economy. Exchange rate volatility affects macroeconomic variables like outputs, imports, export prices, interest rates, and inflation, affecting economic performance.

Money Supply

Money supply refers to the total quantity of money in circulation within an economy at a particular point in time. Money supply is one of the most important monetary policy tools that can be used by central banks to regulate inflation and stimulate economic growth (Khan *et al.*, 2015; Hansen, 2022). Broad money (M2) is the broadest form of money supply currently reported by the Central Bank and it was initiated that large changes in it coincide with stock market volatility. The level of money supply accessible in a budget can contract, due to inflation. When this happens, the value of Stock price is negatively affected. According to Mishkin (2016) money supply is the total amount of liquid assets, including currency, checking deposits, and other deposits, that are held by the public and are readily available for spending, a steady rate of expansion in money supply with low inflation tends to boost stock prices.

Government Revenue

Government revenue refers to the total income a government receives, primarily for, tax and non-tax sources to finance its operations and public services. This revenue is crucial for funding essential government functions such as infrastructure, education, healthcare and national defense. Revenue is the income generated by an individual or a corporation through the selling of products or services. Government revenue is the income obtained by taxation by a government within a specific timeframe, typically a year. This refers to the revenue collected by the government through various means such as taxes, excise duties, customs duties, asset income, transfer revenues, and other sources at the federal, state, and municipal government levels (Pillah *et al.*, 2025)

Government Expenditure

Government expenditure refers to the amount of money spent by a government on goods and services, such as education, healthcare, defense, infrastructure, and social welfare programs, among others, to support its citizens and fulfill its responsibilities it is also refers to as the spending of public funds by a government to finance its activities, programs, and services. It is also referring to the process by which governments allocate resources to achieve social goals (Joseph 2015). According to Organization for Economic Co-operation and Development (OECD) (2019), Government expenditure refers to the spending of public funds by government entities to provide goods and services to society.

External Debt

External debt refers to the mobilization of fund and resources generated elsewhere outside the home country. Udoffia and Akpanah (2016) relates external debt to packages that consist of a combination of financial, technical vis-à-vis managerial requirements emanating from outside the country, aimed at supporting economic growth and development and are repayable at determined future date in foreign currency. Afolabi (2020) sees external debt as credits that are obtained in foreign exchange and are to be serviced and repaid in international currency. He also opines that such loans may be bilateral that is negotiated between two countries mainly on mutual basis and in a friendly manner. It may also be multilateral where another party is acting "in-between" the borrowing and the lending parties or where the loan is syndicated in which case one-party has to act for the membership of the financing syndicate.

Theoretical Framework

The Efficient Market Hypothesis (EMH), was propounded by Eugene Fama in the 1960s. EMH posits that all available information is instantly and accurately reflected in asset prices. In essence, under EMH, it's nearly impossible to consistently "beat the market" because asset prices already incorporate and reflect all relevant information. According to Fama's seminal paper in 1970, EMH can be categorized into three forms: weak, semi-strong, and strong. The weak form asserts that past price and volume information are reflected in current prices. The semi-strong form suggests that all publicly available information is reflected in asset prices, while the strong form posits that all information, both public and private, is instantly incorporated into market prices.

EMH lies in its assertion of the unpredictability of future price changes based on historical prices, which has been supported by numerous empirical studies. This unpredictability ensures that markets remain competitive, and no investor has an undue advantage over others. Additionally, EMH emphasizes the importance of information dissemination and its role in asset pricing, which can explain the surge in transparency and disclosure requirements seen in modern capital markets. However, the theory is not without its critics. Behavioral economists, like Robert Shiller, argue that irrational behavior and psychological factors can lead to market inefficiencies. They suggest that emotional and cognitive errors can result in asset price misalignments, leading to market bubbles and subsequent crashes. Additionally, events like the 2008 financial crisis have led many to question the complete reliability of EMH, as the rapid decline of asset prices seemed to contradict the idea that markets always 'know best'.

Empirical Review

Agunobi *et al*. (2024) examined the effect of macroeconomic variables on stock market performance in Nigeria from 1990 – 2022. The method of data analysis was Auto-regressive distributed lag model (ARDL) technique was used. The findings of the study revealed that the lag broad money supply had significant effect on total market capitalization of the stock market. Anyanwu and Ohurogu (2024) investigated effects of interest rate and money supply on stock market liquidity in Nigeria covering the periods of 1985 to 2022. Vector Auto regression estimation technique with Variance Decomposition and Impulse Response Function were employed to analyze the data. The study concluded that interest rate had negative effect on stock market liquidity in Nigeria. Shock from interest rate reduced stock market liquidity, also, shock from money supply increased stock market liquidity, although, shock from money supply had more explanatory power on stock market liquidity in Nigeria.

Gbanador (2024) investigated the influence of macroeconomic variables on stock price behavior in Nigeria. The annual time series data spanning through the period of 1995 to 2021. Parsimonious Error Correction model and the Fully Modified Least Square were used for the data analysis. The findings from the short-run result showed that all the macroeconomic variables adopted for the study had no positive and significant influence on stock price except inflation whose impact was positive and significant. However, the result from long-run analysis revealed that interest rate and money supply had inverse and insignificant influence on stock price behavior. Inflation had a positive and insignificant effect while exchange rate had a positive and significant influence on stock price behavior in Nigeria.

Ordue *et al* (2024) examined the effect of macroeconomic indicators on stock market performance in Nigeria from 1986 to 2022. The analysis included unit root tests, co-integration tests, and Error Correction Model analysis were used. The results indicated a strong positive relationship between stock market performance and lagged values of Gross Domestic Product (GDP) and Inflation Rate (INF) in the long run. Economic growth, as indicated by GDP and inflation rates played significant roles in driving stock market movements in Nigeria. Conversely, there is a negative relationship between stock market performance and lagged values of equity (EQUI) and interest rate (INTR), suggesting that changes in equity and interest rates may not have a long-term influence on stock market performance. The short-run

analysis reveals short-term momentum in stock market performance, with past stock market returns and inflation rates positively affecting current stock market performance.

Okoebor (2022) examined the effects of macroeconomic variables on stock market performance in Nigeria between 1986 - 2020. The work used Ordinary Least Square Regression (OLS) statistical technique method. The regression results showed a strong relationship between macroeconomic variables and stock market performance in Nigeria. The implications are; policy makers benefit from the spill over information arising from market activities to give priority attention to reforms that activates a vibrant stock market performance.

Augustine *et al.* (2022) investigated the effects of selected macroeconomic variables on stock market performance in Nigeria. An Autoregressive Distributive Lag (ARDL) estimation technique was used. The result showed that macroeconomic variables such as gross domestic product, broad money supply, exchange rate, and savings interest rate had a positive effect on stock market performance in Nigeria. On the other hand, the results showed that inflation rate had a negative effect on stock market performance in Nigeria. 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.

Udo *et al.* (2022) assessed the effect of macroeconomic variables on stock market performance in Nigeria using time series data. The Autoregressive Distributive Lag (ARDL) estimation technique was adopted to establish the long run relationship amongst the variables, and the outcome revealed that a long run relationship exists amongst the variables in the estimated model. The outcome therefore, indicated that macroeconomic variables such as gross domestic product, broad money supply, exchange rate, and savings interest rate had positive effect on stock market performance in Nigeria.

Iyodo *et al*. (2021) investigated the effect of interest rate, exchange rate and inflation rate on stock returns: evidence from listed firms in the Nigerian Stock Exchange. Ordinary Least Square regression (OLS) was used for analysis. The findings revealed that the stock market, being an important part of the financial system had a systemic linkage with fundamentals of macroeconomic variables. The impact of these economic variables on stock returns was strong and coordinated to some extent. Therefore, investors and portfolio managers' cognition of external environmental factors in their bid to maximizing shareholders wealth were subject to some externalities, which were manageable through monetary policy framework.

Orekoya *et al,* (2021) investigated the linkage between government policies and stock market performance in Nigeria from 1985-2018. The Bounds cointegration test result revealed a long-run linear relationship between government policies and stock market performance in Nigeria. However, the non-linear test result showed only fiscal policy has a long-run relationship with stock market performance while the monetary policy relationship is indeterminate. From the FMOLS result, both fiscal and monetary policies have significant effect but contractionary

fiscal policy appears to have more influence on stock market performance than its monetary counterpart. Overall, fiscal policy influences stock market performance more than monetary policy.

Shamsudin *et al.* (2021) investigated the significant relationship between selected macroeconomic variables, the Malaysian stock return index for the financial sector, and the Bursa Malaysia Finance Services Index, from January 1979 to December 2019. Auto Regression Distribution Lag (ARDL) and Vector Error Correction Model (VECM) were used as method of data analysis. The study concluded that inflation and real effective exchange rate had an inverse relationship with stock exchange performance in Malaysia, whereas money supply had a positive relationship with Malaysian stock exchange performance.

Verma and Bansal (2021) examined the impact of macroeconomic variables on the performance of stock exchange: a systematic review from 1972 to 2021. Methods of analysis used were ADF test, Johansen cointegration test, ARDL, VECM, GARCH. The result revealed that gross domestic product (GDP), FDI (Foreign Direct Investment) and FII (Foreign Institutional Investment) have a positive effect on both emerging and developed economies' stock market while gold price has a negative effect. Interest rates had a negative impact on both economies except for a few developing countries. The relationship with oil prices was positive for oil exporting countries while negative for oil importing countries. Inflation, money supply and GDP are the macroeconomic variables that have the same effect on sectoral indices as they do on broad market indices. The impact was sector-specific for the remaining variables.

Ejem *et al.* (2020) examined the Dynamic Interactions of the Nigerian Stock Market and Macroeconomic Variables. The study covered the period of 1985 to 2018. Autoregressive Distributive Lag (ARDL) was engaged in estimating the models. The result showed that monetary development, proxied by Gross Domestic Product and Interest rate, had a positive and critical relationship during the time of study, while inflation exerted a negative influence on All-Share Index. It was also found that exchange rate had an insignificant impact on All Share Index within the scope of the study.

Emanuel (2020) examined how macroeconomic variables influenced the performance of the Nigerian Stock Market during the 2020 covid-19 lockdown, from February 20, 2020 to August 20, 2020. Research results indicated that exchange rates significantly affected the stock market performance during Corona virus lock down period, and that Money Supply had no significant effect on the stock market performance of nonfinancial firms during the period studied. It was recommended that companies and investors should consider these variables and be in a place to diversify risks while investing in the stock market.

Gates (2020) studied the Effects of Unstable Macroeconomic Indicators on Stock Price Conduct of Banking Area in the Nigerian Stock Market from 2009 to 2018. To test the hypotheses, the study adopted a multivariate regression analysis that showed that foreign reserves had significant negative effects on stock price behavior. While interest rate had

significant negative effects on the stock price behavior, inflation rate positively influenced stock price behavior of the banking sector. Igoni *et al.* (2020) assessed macroeconomic factors and stock market performance in Nigeria using time series data spanning through the period 1985 to 2014. The study used exchange rate, inflation, and interest rates as proxies for the independent variables and the stock market capitalization was used to measure stock market performance. The Johansen cointegration and error correction models were used for the analysis. The findings indicated that inflation responded negatively while interest rate and exchange rate were adjusting to the trends of market performance.

Norehan and Ridzuan (2020), examined the impact of macroeconomic variables on stock market performance in Malaysia from the historical 1981 to 2017 using annual data. The inflation rate, exchange rate, broad money, and domestic saving were the selected macroeconomic variables. The findings depended on since quite a while ago run flexibilities uncovers that expansion and conversion standards are huge and emphatically affected the financial exchange in Malaysia. Meanwhile, domestic exchangeable and extensive money had adverse impact on the stock market in the long run.

Methodology

In this paper, the selected research design is the ex-post facto design. The ex-post facto design is particularly suited for studies aiming to decipher statistical associations between dependent and independent variables, primarily to establish cause-and-effect relationships. It is a design that not only allows for the testing of hypotheses about these relationships but also effectively integrates theoretical review with empirical findings (Kerlinger & Howard, 2013). The Autoregressive Distributed Lag Model (ARDL) was used in this study to examine the long-term and short-term effects. A modified model developed by Ordue *et at.* (2024) serves as the foundation for the model adapted for this study. It was stated that his was:

$$SMP = f(GDP, INF, ROE, EXR, INT) \quad \text{- - - - - - (i)}$$

Where;

SMP is stock market performance, GDP is gross domestic product, INF is inflation rate, ROE is return on equity, EXR is exchange rate, and INT is interest rate. However, the model was modified by including relevant macroeconomic variables determinants. These determinants include interest rate, money supply, exchange rate, foreign direct investment, government expenditure and real GDP. Thus, the modified model is presented as follows:

$$SMC = f(INTR, MS, EXR, GR, GEXP, EXD) \quad \text{- - - - - (ii)}$$

$$\ln SMC_{t-i} = \beta_0 + \beta_1 \ln SMC_{t-i} + \beta_2 \pi INTR_{t-i} + \beta_3 \pi MS_{t-i} + \beta_4 \pi EXR_{t-i} + \beta_5 \pi GR_{t-i} + \beta_6 \pi GEXP_{t-i} + \beta_7 \pi EXD_{t-i} + U_t \quad \text{- - - - - - (iii)}$$

Where; In = Natural logarithm; SMC = Stock Market Capitalization; INTR = Interest Rate; MS = Money Supply; EXR = Exchange Rate; GR = government revenue; GEXP = Government Expenditure; EXD = external debt; π = Fluctuations; Δ = shot run; t =

Time Period (annually); β_0 = Intercept term; $\beta_1 - \beta_6$ = Parameters for the Variables respectfully; U_t = the error term.

A priori expectations
INTR < 0, MS > 0, EXR > 0, GR > 0, GEXP > 0, EXD < 0.

Based on the *a priori expectation* of the model. It is expected that the coefficients of money supply fluctuations (MS), exchange rate (EXR), Government revenue (GR), and government expenditure (GEXP) are expected to be positive meaning that they are to have a significant impact on stock market performance which implies that an increase or decrease in any of them will lead to an increase or decrease on stock market performance proxied by (SMC). While interest rate (INT) and external debt (EXD) are expected to be negative impact on stock market performance, which implies that an increase in any of them will lead to a decrease on stock market performance proxied by (SMC).

Data Presentation Analysis
The findings of this study are presented in several phases. Initially, descriptive statistics are provided to examine the mean, standard deviations, and autocorrelation properties of the dataset, establishing a baseline for further analysis. Following this, a Unit Root test is conducted to evaluate the stationarity of the series, determining whether the variables exhibit consistent behavior over time. Subsequently, the ARDL model and post-estimation tests are applied, with the results offering insights into the relationships and dynamics among the variables under investigation. The descriptive statistics are presented in Table 1.

Table 1: Descriptive Statistics

	LSMC	INTR	MS	EXR	GR	GEXP	EXD
Mean	7.270899	-0.069832	0.324975	-0.024600	0.409778	0.112928	-0.056121
Median	7.902180	-0.002731	0.008443	-0.012094	-0.039422	0.117227	-0.218846
Maximum	11.22795	19.56694	12.70736	59.26721	28.69514	18.73784	66.24688
Minimum	2.014903	-14.39196	-6.776291	-21.30620	-16.48341	-13.18900	-44.51709
Std. Dev.	2.795121	3.649970	1.915615	5.993383	6.025093	4.954687	8.973505
Skewness	-0.449086	0.866978	2.722097	6.231158	2.231526	0.436508	3.482423
Kurtosis	1.838694	14.35210	18.89072	68.20137	11.27663	5.211836	35.01521
Jarque-Bera	13.20147	807.7454	1728.194	26989.98	541.5813	34.63305	6575.083
Probability	0.001359	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
Sum	1068.822	-10.26526	47.77128	-3.616252	60.23733	16.60043	-8.249842
Sum Sq. Dev.	1140.654	1945.053	535.7585	5244.414	5300.054	3584.143	11756.47
Observations	147	147	147	147	147	147	147

Source: Authors Computation, (Eviews-10), 2025

The result of the descriptive statistics revealed that the mean values of stock market capitalization, interest rate, money supply, exchange rate, government revenue, government expenditure and external debt are given as 7.270899, -0.069832, 0.324975, -0.024600, 0.409778, 0.112928 and -0.056121 respectively. Their median values are given as 7.902180, -0.002731, 0.008443, -0.012094, -0.039422, 0.117227 and -0.218846 respectively. The

maximum values of stock market capitalization, interest rate, money supply, exchange rate, government revenue, government expenditure and external debts are given as 11.22795, 19.56694, 12.70736, 59.26721, 28.69514, 18.73784 and 66.24688 respectively and their minimum values are given as 2.014903, -14.39196, -6.776291, -21.30620, -16.48341, -13.18900 and-44.51709 respectively.

The values standard deviation for stock market capitalization, interest rate, money supply, exchange rate, government revenue, government expenditure and external debt are given as 2.795121, 3.649970, 1.915615, 5.993383, 6.025093, 4.954687 and 8.973505 respectively. Interest rate, money supply, exchange rate, government revenue, government expenditure and external debt are positively skewed while stock market capitalization is negatively skewed. The probability of the Jarque- Bera statistics 0.001359, 0.000000, 0.000000, 0.000000, 0.000000 and 0.000000 for stock market capitalization, interest rate, money supply, exchange rate, government revenue, government expenditure and external debt are not normally distributed at 5% level of significance.

Table 2: Unit Root Test Results

Variables	ADF	1% CV	5% CV	10% CV	Order	P - Value
LSMC	-4.507330	-3.475184	-2.881123	-2.577291	I (1)	0.0003
INTR	-10.59926	-3.477835	-2.882279	-2.577908	I (0)	0.0000
MS	-12.58051	-3.475500	-2.881260	-2.577365	I (0)	0.0000
EXR	-14.35089	-3.475500	-2.881260	-2.577365	I (0)	0.0000
GR	-12.73974	-3.475500	-2.881260	-2.577365	I (0)	0.0000
GEXP	-4.146631	-3.476472	-2.881685	-2.577591	I(0)	0.0011
EXD	-14.62331	-3.475500	-2.881260	-2.577365	I(0)	0.0000

Source: Authors Computation, (Eviews-10), 2025

Based on the result of the unit root test stock market capitalization was not found to be stationary at level, as their ADF statistic values are lesser than their critical value with their probabilities greater than 5% level of significance. However, they became stationary at first difference. Thus, their order of integrations are $I(1)$.

On the other hand, stock market capitalization, interest rate, money supply, exchange rate, government revenue, government expenditure and external debts were found to be stationary at level as the absolute value of their ADF statistic were greater than their critical value at 5% level of significance. Thus, its order of integration is $I(0)$.

Table 3: The Result of Bound Test - Co-integration Analysis

Test Statistic	Value	Signif.	I(0)	I(1)
			Asymptotic: n=1000	
F-statistic	8.802169	10%	2.12	3.23
k	6	5%	2.45	3.61
		2.5%	2.75	3.99
		1%	3.15	4.43

Source: Authors Computation, (Eviews-10), 2025

From the co-integration test captured in table 3, it could be seen that F-statistic value of 8.802169 is greater than the lower bound [*I* (0)] and upper bound [*I* (1)] critical values of 2.45 and 3.61 respectively at 5% level of significant. Therefore, the variables are found to be co-integrated, and as such, there is a long-run equilibrium relationship between macroeconomic variables and stock market performance for the period under review.

Table 4: ARDL Model Results of the Short-Run, Long-Run ECR
Dependent Variable: Stock Market Performance

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.032524	0.004393	7.404106	0.0000
D(LSMC(-1))	0.735099	0.067860	10.83256	0.0000
D(LSMC(-2))	-0.002314	0.086963	-0.026612	0.9788
D(EXR)	-0.003112	0.000517	-6.021729	0.0000
D(GR)	0.003816	0.000515	7.408168	0.0000
D(GEXP)	0.002084	0.000801	2.601663	0.0105
D(EXD)	0.001242	0.000354	3.503450	0.0006
CointEq(-1)*	-0.001826	0.000227	-8.044988	0.0000
R-squared	0.823909			
Adjusted R-squared	0.799961			
F-statistic	34.40362			
Prob(F-statistic)	0.000000			
Durbin-Watson stat	2.027557			
LONG RUN				
Variable	**Coefficient**	**Std. Error**	**t-Statistic**	**Prob.**
INTR	-0.258211	0.568915	-0.453866	0.6508
MS	2.455405	1.808414	1.357767	0.1771
EXR	0.380630	1.006322	0.378239	0.7059
GR	4.223310	2.757246	1.531713	0.1282
GEXP	0.051588	0.442764	0.116513	0.9074
EXD	-3.954941	2.586121	-1.529295	0.1288

Source: Authors Computation, (Eviews-10), 2025

The above table presents the results of the Auto-Regressive Distributed Lag (ARDL) model, focusing on both the short-run dynamics and the long-run relationship between the dependent variable, stock market performance (SMC), and the independent variables are interest rate (INTR), money supply (MS), exchange rate (EXR), government revenue (GR), government expenditure (GEXP) and external debt (EXD) and Error Correction model.

The lagged coefficient of Error Correction Term is negative, less than a unit (1) and statistically significance in influencing stock market performance at 5% level of significance as suggested by the probability value 0.0000. The coefficient of ECM been -0.001826 implies that once there is disequilibrium in the system, it will take the average speed of 0.1826 to restore the long-run relationship between macroeconomic variables and stock market performance in Nigeria. The coefficient of exchange rate fluctuations is -0.003112, which is negative but statistically significant in influencing stock market performance in the short run at 5% level of significance as suggested by the probability value 0.0000. While in the long run, the coefficient for

exchange rate is 0.380630, but it is not statistically significant pv = 0.7059. This suggests that, in the long run, exchange rate does not have a significant impact on stock market performance.

The coefficient of government revenue is 0.003816, which is positive and statistically significant in influencing stock market performance in the short run at 5% level of significance as suggested by the probability value 0.0000. While in the long run, the coefficient for government revenue is 4.223310, but it is not statistically significant pv = 0.1282. This suggests that, in the long run, government revenue does not have a significant impact on stock market performance. The coefficient of government expenditure is 0.002084, which is positive and statistically significant in influencing stock market performance in the short run at 5% level of significance as suggested by the probability value 0.0105. While in the long run, the coefficient for government expenditure is 0.051588, but it is not statistically significant pv = 0.9074. This suggests that, in the long run, government expenditure does not have a significant impact on stock market performance.

The coefficient of external debt is 0.001242, which is positive and statistically significant in influencing stock market performance in the short run at 5% level of significance as suggested by the probability value 0.0006. While in the long run, the coefficient for external debt fluctuations is -3.954941, but it is not statistically significant p-v = 0.1288. This suggests that, in the long run, external debt does not have a significant impact on stock market performance. The estimated coefficient of interest rate fluctuations is -0.258211, which is negative and statistically insignificant in influencing stock market performance in the long run at 5% level of significance as suggested by the probability value 0.6508. This suggests that, in the long run, exchange rate do not have a significant impact on stock market performance.

The estimated coefficient of money supply fluctuations is 2.455405, which is positive but statistically insignificant in influencing stock market performance in the long run at 5% level of significance as suggested by the probability value 0.1771. This suggests that, in the long run, money supply fluctuations do not have a significant impact on stock market performance. The coefficient of R^2 is 0.823909 implying that 82.3909% variation in stock market performance is been accounted for by interest rate, money supply, exchange rate, government revenue, government expenditure and external debts while 17.6091% is been accounted for by the other variables not captured in the model. The F-statistic of 34.40362 and its associated p-value 0.000000 indicate that the overall model is statistically significant, confirming the joint significance of the independent variables. The Durbin Watson statistic value 2.027557 suggests that there is no evidence of autocorrelation among interest rate fluctuations, money supply fluctuations, exchange rate fluctuations, government revenue fluctuations, government expenditure fluctuations and external debts.

Discussion of Findings

Based on the long run Autoregressive Distributed Lagged (ARDL) regression result. The result indicated the interest rate has negative and statistically insignificant relationship with stock market performance in the long run. The result indicated that higher interest rate will distort stock market performance in the long run and vise visa. Interest rate have negative

coefficient, which is in line with the a priori expectation of the model stated above. This finding is similar to other findings of other researches like; Anyanwu and Ohurogu (2024); Gbanador (2024)

On the other hand, the result revealed that money supply has positive but statistically insignificant relationship with stock market performance in the long run. This indicates that any increase in money supply can leads to increase in liquidity in the stock market which in turn push up stock prices. Money supply fluctuation has positive coefficient, which is in line with the a priori expectation of the model stated above. This finding is similar to other findings of other researches like; Agunobi *et al*. (2024).

In addition, the result also revealed that exchange rate has positive but statistically insignificant relationship with stock market performance in the long run. This indicates that any changes in the domestic currency will affect the performance of stock market. For instance, depreciation in domestic currency will attracts foreign investors to invest because stock prices will be cheaper. This result concurs with the a priori expectation of the model stated above. This finding is in line with other findings of other researches like; (Okoebor, 2022, Udo *et al.,* 2022).

Furthermore, the finding revealed that government revenue has positive but statistically insignificant in influencing stock market performance in the long run. This outcome is consistent with the a priori expectation stated above. The findings also indicated that government expenditure have positive but statistically insignificant in influencing stock market performance in the long run. Government expenditure has positive coefficient, which is in line with the a priori expectation of the model stated above. This finding is in line with other findings of other researches like; Orekoya *et al,* (2021). Lastly, the result showed that external debt has negative and statistically insignificant in influencing stock market performance in the long run. This result concurs with the a priori expectation of the model stated above. This finding is in line with other findings of other researches like (Orekoya *et al.,* 2021)

Post-Estimation Diagnostic Tests

This section helps to validate the ECM results in order to ascertain the usefulness of the estimated model for policymaking. The Durbin Watson statistics is 2.027557. This shows that there is no first order serial autocorrelation in the error term of the variables. The Breusch-Godfrey second order serial correlation test also shows no autocorrelation (test statistics is not significant at 5%). The stability of the parameters is tested through the CUSUMSQ (cumulative sum of recursive residuals of square) and the Jaque Bera statistics. Pesaran and Pesaran (1997) suggest these tests for measuring the parameter stability.

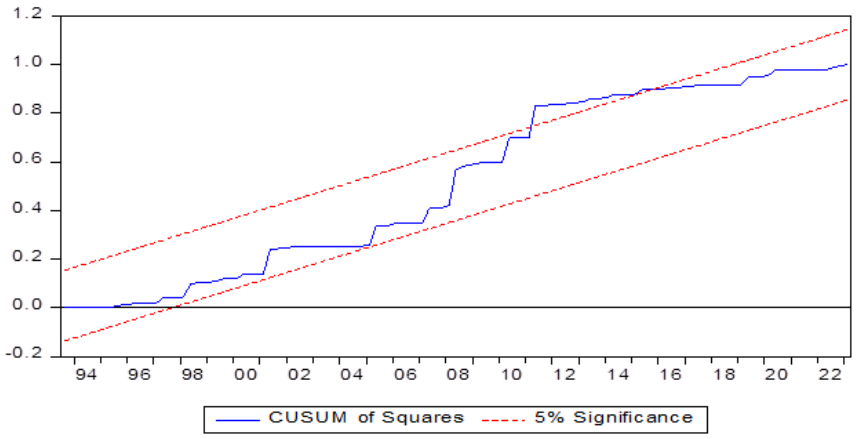
Table 5: Serial Autocorrelation, Heteroskedasticity and Normality Tests

	X^2	Probability
Breusch-Godfrey Serial Correlation LM Test:	0.809841	0.5214
Heteroskedasticity Test: Breusch-Pagan-Godfrey	1.450903	0.1019
Heteroskedasticity test: ARCH	0.720514	0.5794
*Jarque-Bera test	422.3141	0.0000

The normality test result reveals that the sample variance is not normally distributed since Jaque-Bera probability is statistically significant.

Cumulative Sum of Recursive Residuals of Square (CUSUMSQ)

Figure 1. CUSUM Square Tests for ARDL Model



The above figures are a graphical representation of the CUSUM of squares points. The CUSUM of squares plots also lay within the critical lines. These suggest that the estimated model is relatively stable, and that valid inferences can be drawn from its estimated coefficients.

Conclusion and Recommendations

The study used the ARDL technique to examine impact of macroeconomic variables on stock market performance in Nigeria, using annual data from 1990 to 2023. The ARDL bounds test to co integration result proves a long-run equilibrium relationship among the variables. The result found the evidence of positive but statistically insignificant relationship between macroeconomic variables fluctuations and stock market performance in the long run. However, a short-run revealed that macroeconomic variables fluctuations is positive and statistically significant in influencing stock market performance in Nigeria. Therefore, the paper concluded that there is long run relationship between macroeconomic variables and stock market performance in Nigeria for the period of study.

Based on these results the paper therefore recommended that;

i. Central Bank of Nigeria (CBN) through Monetary Policy committee (MPC) should make efforts to stabilize the monetary system by lowing the interest rates. This is because lower interest rate will attract investors at the national and international level to invest in stocks, which will boost stock market performance in the long run.
ii. In addition, Central Bank of Nigeria (CBN) through Currency Operations Department should stable and sufficient level of liquidity (money supply) in the economy, because it drives capital market investment that promotes the efficiency and performance of the stock market. This is in line with the fact that an increase in money

supply will attract stock investors both domestically and internationally.

iii. Furthermore, central monetary authorities should formulate and implement measures aimed at strengthening the structural resilience of exchanges rate, considering the positive relationship between exchange rate and stock market performance in the long run.

iv. Federal Government through Federal Inland Revenue Service (FIRS) should foster greater corporate and individual tax compliance by implementing integrated, multi-platform strategies that encourage transparency, efficiency, and voluntary participation.

v. Federal Government through Ministry of Finance, budget and national planning should significantly increase its expenditure in critical sectors such as infrastructure, healthcare, education, and security. Enhanced investment in these areas is essential for improving national productivity and fostering a secure and stable environment that will attract and retain both domestic and international investors in the long run.

vi. Given that, external debt has a negative impact stock market performance in the long run. Therefore, policies should be put in place by the office of debt management to reduce the existing debt to prevent the economy from experiencing debt overhang, that may distort the performance of stock market in the long run.

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APPENDIX I

Table 5: Data for Regression

Year	INTR	GEXP	MS	EXR	SMC	GR	EXD
1986	12.00	16.22	23.81	2.02	6.80	12.6	41.45
1987	19.20	22.02	27.57	4.02	8.20	25.4	100.79
1988	17.60	27.75	38.36	4.54	10.00	27.6	133.96
1989	24.60	41.03	45.90	7.39	12.80	53.9	240.39
1990	27.70	60.27	47.42	8.04	16.30	98.1	298.61
1991	20.80	66.58	75.40	9.91	23.10	101.0	328.45
1992	31.20	92.80	111.11	17.30	31.20	190.5	544.26
1993	36.09	191.23	165.34	22.05	47.50	192.8	633.14
1994	21.00	160.89	230.29	21.89	66.30	201.9	648.81
1995	20.79	248.77	289.09	21.89	180.40	460.0	716.87
1996	20.86	337.22	345.85	21.89	285.80	523.6	617.32
1997	23.32	428.22	413.28	21.89	281.90	582.8	595.93
1998	21.34	487.11	488.15	21.89	262.60	463.6	633.02
1999	27.19	947.69	628.95	92.69	300.00	949.2	2,577.37
2000	21.55	701.05	878.46	102.11	472.30	1,906.2	3,097.38
2001	21.34	1,018.00	1,269.32	111.94	662.50	2,231.6	3,176.29
2002	30.19	1,018.18	1,505.96	120.97	764.90	1,731.8	3,932.88
2003	22.88	1,225.99	1,952.92	129.36	1,359.30	2,575.1	4,478.33
2004	20.82	1,504.20	2,131.82	133.50	2,112.50	3,920.5	4,890.27
2005	19.49	1,919.70	2,637.91	132.15	2,900.06	5,547.5	2,695.07
2006	18.70	2,038.00	3,797.91	128.65	5,120.90	5,965.1	451.46
2007	18.36	2,450.90	5,127.40	125.83	13,181.69	5,727.5	438.89
2008	18.70	3,240.82	8,643.43	118.57	9,562.97	7,866.6	523.25
2009	22.62	3,452.99	9,687.51	148.88	7,030.84	4,844.6	590.44
2010	22.51	4,194.58	11,101.46	150.30	9,918.21	7,303.7	689.84
2011	22.42	4,712.06	12,628.32	153.86	10,275.34	11,116.8	896.85
2012	23.79	4,605.30	15,503.41	157.50	14,800.94	10,654.7	1,026.90
2013	24.69	5,185.32	18,743.07	157.31	19,077.42	9,759.8	1,387.33
2014	25.74	4,587.39	20,415.61	158.55	16,875.10	10,068.9	1,631.50
2015	26.71	4,988.86	20,885.52	193.28	17,003.39	6,912.5	2,111.51
2016	27.29	5,858.56	24,259.00	253.49	16,185.73	5,616.4	3,478.92
2017	30.60	6,456.70	28,604.47	305.79	21,128.90	7,444.8	5,787.51
2018	28.16	7,813.74	29,774.43	306.08	21,904.04	7,759.2	7,759.23
2019	30.57	9,712.22	34,257.90	306.92	25,890.22	9,022.4	9,022.42
2020	28.64	10,232.33	36,038.01	358.81	38,589.58	12,705.6	12,705.62
2021	28.06	12,164.15	40,370.41	400.24	42,054.50	15,855.2	15,855.23
2022	28.11	14,946.25	48,461.42	425.98	51,188.87	18,702.3	18,702.25
2023	27.98	19,808.44	63,512.40	645.19	75,202.90	38,219.8	38,219.85

Source: CBN Statistical Bulletin 2023