

## AN INVESTIGATION INTO THE DETERMINANTS OF STOCK MARKET RETURNS IN NIGERIA.

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### ABSTRACT

*Over the past three decades, the Nigerian stock market has grown to become one of Africa's largest and most important. Stock returns in Nigeria as believed to be have been negatively impacted by a number of issues plaguing the market. There has always been debate over the correlation between stock market performance and broad economic indicators. This study investigates the determinants of stock returns in Nigeria. The study employed secondary data obtained from Central Bank of Nigeria (CBN) statistical bulletin within the period of 1989 to 2024. The data obtained were subjected to the Autoregressive Distributed Lag (ARDL) as method of analysis. Findings revealed that exchange rate has a positive significant effect in stock market returns both in the short run and long run while foreign direct investment has a negative significant effect on stock return in the short run and a positive significant effect in the long run. Based on the findings, it can be concluded that exchange rate, foreign direct investment and money supply are determinant of stock returns in Nigeria. The study recommended among others, that the Central Bank of Nigeria should continue to implement sound monetary policies that help to stabilize the naira. This will help to reduce volatility in the exchange rate which in turn increases stock returns.*

**Keywords:** Stock Returns; Exchange Rate; Foreign Direct Investment; Money Supply; ARDL Model

### Introduction

Stock market returns are influenced by macroeconomic conditions, geopolitical events, institutional frameworks, and investor sentiment (Fama, 2020; Malkiel, 2020). Key macroeconomic variables such as inflation, interest rates, exchange rates, and money supply significantly shape market performance. Inflation reduces purchasing power and corporate earnings, thereby affecting stock prices. Interest rates influence borrowing costs and investment decisions, while money supply affects both inflation and interest rates, ultimately impacting stock returns.

Geopolitical tensions, trade disputes, and global crises also contribute to market volatility as investors respond to uncertainty. Recent global events, including the COVID-19 pandemic, demonstrated how international risk factors can strongly influence developing markets. Balcilar et al. (2022) found that global shocks contributed more to equity return volatility in developing countries than domestic shocks, highlighting the interconnectedness of financial markets.

In Nigeria, stock market performance is shaped by both domestic and external factors. As an oil-dependent economy, fluctuations in global oil prices significantly affect market returns. Ogunsakin and Awe (2020) identified inflation, real interest rate, exchange rate, and world oil prices as major determinants of stock market performance in Nigeria. Abdulkadir (2021) called for rethinking agriculture as an alternative plan for Nigeria's economy. Additionally, monetary policy decisions, particularly adjustments in the Monetary Policy Rate (MPR), directly influence interest rates and investment activities, thereby affecting stock returns.

Stock market returns represent the gains or losses investors earn through capital appreciation and dividends. These returns are sensitive to macroeconomic instability, policy changes, and investor sentiment. Behavioral factors such as herd behavior can further amplify volatility, especially during periods of uncertainty.

Understanding the determinants of stock market returns in Nigeria is important for policymakers and investors. It provides insights for designing effective economic policies, improving market stability, and guiding investment decisions.

### **Statement of the Problem**

Over the past three decades, the Nigerian stock market has expanded significantly but has experienced persistent volatility. Major economic events, including the Structural Adjustment Program (SAP) of 1986, domestic financial crises in the late 1990s and early 2000s, and the COVID-19 pandemic in 2020, have triggered substantial fluctuations in stock prices and investor returns. For instance, during the first quarter of 2020, the Nigerian All Share Index declined by over 20%, reflecting heightened uncertainty and capital outflows.

Despite numerous studies on stock market performance in Nigeria, gaps remain regarding the combined and long-term effects of key macroeconomic variables such as inflation, interest rates, and exchange rates on stock returns. Many previous studies relied on short timeframes or limited variables, resulting in inconsistent findings.

Therefore, there is a need for a comprehensive and long-term empirical investigation into the dynamic relationship between macroeconomic indicators and stock market returns in Nigeria. Such a study would enhance understanding of market behavior, improve forecasting accuracy, and support effective economic and investment decision-making for sustainable growth.

### **Objectives of the Study**

The main objective of the study is to examine the determinants of stock market returns in Nigeria. However, the specific objectives of this study include to:

- i. examine the effect of exchange rate on stock market returns in Nigeria.
- ii. evaluate the effect of foreign direct investment on stock market returns in Nigeria

## **Literature Review**

### **Stock Returns**

Stock returns refer to the gains or losses investors realize from holding equities over a given period (Malkiel, 2022). These returns come from two main sources: capital appreciation, which is the increase in share price, and dividends, which are periodic payments made to shareholders. Stock returns are commonly measured as the percentage change in the value of a stock or portfolio and are essential for evaluating investment performance and comparing alternative assets (Fama & French, 2023).

From a theoretical perspective, stock returns represent compensation for bearing risk, consistent with asset pricing models that suggest a positive relationship between risk and expected return (Markowitz, 1959; Fama & French, 2023). In efficient markets, stock prices reflect available information, making abnormal returns difficult to achieve (Damodaran, 2023). However, behavioral finance highlights that investor sentiment and psychological biases can cause deviations from fundamental values, leading to short-term volatility (Baker & Wurgler, 2023).

Stock returns are influenced by macroeconomic conditions such as inflation, interest rates, economic growth, and exchange rates, as well as firm-specific factors like earnings, dividend policy, and corporate governance (Chen et al., 2023). In Nigeria, returns are further shaped by currency volatility, regulatory policies, and external shocks. This study adopts the definition by Malkiel (2022), which views stock returns as the total gains or losses from capital appreciation and dividends, as it provides a comprehensive basis for examining the impact of macroeconomic variables on market performance.

### **Exchange Rate**

Krugman and Obstfeld (2022) define exchange rate as the price of one country's currency in terms of another currency, determining the relative value of different currencies in international trade and financial markets. The exchange rate plays a crucial role in global economic stability, influencing trade balances, inflation, and monetary policies. It fluctuates based on factors such as interest rates, inflation rates, and political stability.

Mishkin (2019) defines exchange rate as the rate at which one currency can be exchanged for another in the foreign exchange market, reflecting the purchasing power of different currencies. Exchange rates can be classified into fixed, floating, or managed systems, depending on how they are determined and controlled by monetary authorities.

According to Dornbusch et al. (2018), exchange rate is the relative price of two currencies, influenced by market forces such as supply and demand, government interventions, and macroeconomic indicators. Exchange rate movements can impact a nation's economic growth, competitiveness, and capital flows.

## **Foreign Direct Investment**

Foreign Direct Investment (FDI) refers to a long-term investment made by an individual or firm from one country into a business located in another country with the intention of obtaining lasting interest and significant control. According to UNCTAD (2023) and the OECD (2022), FDI typically involves ownership of at least 10% of voting power and active participation in management. Unlike portfolio investment, FDI reflects a sustained relationship and may take the form of greenfield investments, mergers and acquisitions, or joint ventures. Beyond capital flows, FDI often includes the transfer of technology, managerial expertise, and international business practices.

FDI plays a vital role in economic development, particularly in developing and emerging economies. It contributes to capital formation, employment creation, productivity growth, and integration into global value chains. Through spillover effects such as training, supplier linkages, and technology diffusion, FDI can enhance domestic firms' competitiveness. However, its benefits depend on the host country's institutional quality, infrastructure, and human capital. Weak regulatory frameworks, political instability, and macroeconomic volatility may limit the positive impact of foreign investment.

The relationship between FDI and stock returns can be viewed from financial and strategic perspectives. Financially, FDI provides firms with additional capital, which may improve profitability and increase stock returns. Strategically, foreign investment can grant access to new markets, resources, and expertise, strengthening competitive advantage. However, some studies argue that these gains may be short-lived due to associated risks and profit repatriation. This study adopts the World Bank (2023) definition of FDI as a long-term investment reflecting lasting interest and control, as it captures both the ownership and managerial influence dimensions relevant to this research.

## **Empirical Review**

### **Exchange Rate and Stock Market Returns**

Mohan (2025) examined the effect of exchange rates on stock returns in India and China using daily data within the framework of the Dynamic Conditional Correlation-Generalized Autoregressive Conditional Heteroskedasticity (DCC-GARCH) model. This approach allowed the study to capture the time-varying nature of the relationship between exchange rate movements and stock market performance. The findings revealed significant volatility spillovers between the exchange rate and stock returns in both countries. Specifically, in India, the effect of exchange rate fluctuations on stock returns was largely driven by capital flows, money supply, and oil prices, while in China, interest rate changes played a more dominant role. Despite its methodological strength, the study did not examine the causal direction of the relationship or account for asymmetries that may arise under different exchange rate regimes, such as periods of appreciation versus depreciation. This gap highlights the need for the present study to adopt a more comprehensive approach by integrating Nonlinear ARDL (NARDL) and

causality tests to capture regime-specific dynamics and deepen understanding of the asymmetric effects of exchange rate fluctuations on stock market returns.

Belbali et al. (2024) examined the impact of fluctuations in the Riyal/USD exchange rate on the Saudi trading index over the period 2022 to 2024. Relying on monthly data, the study employed ARDL cointegration techniques, Phillips-Perron unit root tests, and Granger causality analysis. The findings indicated the presence of a long-run equilibrium relationship and a significant short-run inverse effect, whereby a unit increase in the exchange rate led to a 316.677-point decline in the trading index. Additionally, the error correction model revealed that approximately 28% of deviations from long-run equilibrium were corrected in each period. However, the analysis found no evidence of Granger causality between the variables. A key limitation of the study was its failure to explore volatility spillovers and sectoral variations, which underscores the necessity for the current study to incorporate asymmetric effects, volatility transmission mechanisms, and sector-specific dynamics to provide a more comprehensive understanding of the exchange rate–stock market return relationship.

Prananta and Alexiou (2024) used daily data from 2012 to 2021 to examine exchange rates, bond yields, and stock market dynamics during the COVID-19 period in Indonesia. They utilized the Non-linear ARDL (NARDL) approach to capture asymmetric effects. Across the full sample, no cointegration was found, but for the COVID-19 sub-period, evidence of cointegration emerged, with clear asymmetries in both short and long runs. This study highlighted time-varying relationships but did not explore cross-market contagion or conditional heteroskedasticity. Thus, the current study can expand by integrating volatility modeling (e.g., GARCH) and cross-country comparisons.

### **Foreign Direct Investment on Stock Market Return**

Mohan (2025) investigated the effect of foreign direct investment (FDI) on stock market returns in India and China using daily data from 2018 to 2023. The study adopted a quantitative research design, employing the Dynamic Conditional Correlation-Generalized Autoregressive Conditional Heteroskedasticity (DCC-GARCH) model to capture the time-varying relationship between FDI inflows and stock market performance. The key variables used were net FDI inflows and stock index returns (Nifty 50 and Shanghai Composite). Data were obtained from the Reserve Bank of India, the People's Bank of China, and respective stock exchanges. The study found significant volatility spillovers from FDI movements to stock returns, suggesting that investors respond promptly to foreign capital movements. However, the study focused solely on high-frequency data without considering macroeconomic variables that may mediate the FDI-stock market return relationship. This limitation necessitates the current study's inclusion of broader economic indicators to provide a more comprehensive understanding of the dynamics at play.

Obi and Yusuf (2024) explored the causal relationship between FDI inflow and stock market performance in Nigeria using quarterly time-series data from 2000 to 2023. The study employed an ex-post facto research design with Vector Error Correction Model (VECM) to test for long-run and short-run dynamics. Variables included net FDI inflows, All Share Index (ASI), inflation rate, and interest rate. Data were sourced from the Central Bank of Nigeria (CBN) and the Nigerian Exchange Group. Results showed a long-run equilibrium relationship

between FDI and stock market performance but an insignificant short-run effect. The study highlighted that macroeconomic instability weakens the impact of FDI on the stock market. However, the study did not investigate sectoral-level FDI flows or firm-level stock return data, which could provide granular insights. The current study seeks to address this limitation by incorporating firm-specific stock return responses to FDI movements.

### **Theoretical Framework**

The Capital Asset Pricing Model (CAPM), developed by William Sharpe (1964) and further extended by Lintner (1965) and Black et al. (1972), explains the relationship between risk and expected return in financial markets. Rooted in Markowitz's mean-variance framework, CAPM posits that the expected return on a security equals the risk-free rate plus a risk premium, determined by the asset's beta (systematic risk) multiplied by the market risk premium. The model is expressed as:  $R_i = R_f + \beta(R_m - R_f)$ , where beta measures the sensitivity of a stock's return to overall market movements. According to CAPM, only systematic (non-diversifiable) risk is priced, and assets with higher beta are expected to yield higher returns.

Although CAPM is widely used due to its simplicity and practical applicability, it has faced criticism. Empirical studies such as Fama and French (2012) support the relevance of beta in explaining stock returns, yet other research argues that additional factors such as firm size and macroeconomic conditions also influence returns. Critics further note that CAPM assumes market efficiency and homogeneous investor expectations, which may not hold in reality. Despite these limitations, CAPM remains a foundational framework for analyzing risk-adjusted returns and understanding how systematic risk affects stock market performance, particularly in emerging markets.

### **Research Methodology**

The study adopted an ex-post facto research design. The population of this study was 161 listed firms within the study period, and the sample was selected using non-probability sampling, which involved choosing firms with specific characteristics relevant to the study and accessible to the researcher. The data used in this study were obtained from secondary sources, specifically the Central Bank of Nigeria (CBN) and Nigerian Exchange Group (NGX) official websites, covering exchange rate, foreign direct investment, inflation, money supply, interest rate, and stock price index for the period 1989 to 2024.

The study employed the Autoregressive Distributed Lag (ARDL) model to examine the short-run and long-run relationships between stock returns and selected macroeconomic variables in Nigeria. The ARDL approach was chosen because of its flexibility in handling both stationary and non-stationary time series data and its ability to capture dynamic relationships among variables. Prior to estimation, unit root tests (Augmented Dickey-Fuller) were conducted to avoid spurious regression results and determine the order of integration of the variables. Cointegration was tested using the Johansen and Juselius (1990) procedure to establish the existence of long-run equilibrium relationships. The ARDL model was specified with appropriate lag lengths selected using information criteria such as AIC or BIC, and it was estimated using standard econometric techniques to assess the impact of macroeconomic factors on stock returns.

## Data Presentation and Analysis

### Descriptive Statistics

The descriptive statistics depicted the qualities of data obtained and used for the estimation. This knowledge assisted in the choice of appropriate methodology for estimation. The table presents the summary of the descriptive statistics of the study variables.

**Table1: Descriptive Statistics**

	ASII	EXCH	FDI
Mean	4.869156	121.8206	9.245442
Median	5.208009	123.1931	9.283611
Maximum	5.781825	358.8108	9.946504
Minimum	3.148418	1.754523	8.286041
Std. Dev.	0.817984	106.4088	0.462857
Skewness	-0.894151	0.764543	-0.228786
Kurtosis	2.381901	2.731642	2.024591
Jarque-Bera	5.370104	3.615177	1.741194
Probability	0.068218	0.164049	0.418702
Sum	175.2896	4385.541	332.8359
Sum Sq. Dev.	23.41841	396299.3	7.498270
Observations	36	36	36

Source: E-view 10 output file.

These descriptive statistics provide a summary of the ASII's performance as a proxy for stock returns in Nigeria. The information can be used to understand the distribution of the index values and to assess the variability of the index over the period of analysis. The mean of the ASII is 4.869156, which indicates that the average level of the index over the period of analysis is close to 4.9. The median of the ASII is 5.208009, which suggests that the distribution of the index values is slightly skewed to the left. This means that there are some lower values that are pulling down the average, but the majority of values are higher than the average. The maximum value of the ASII is 5.781825, which represents the highest point that the index reached during the period of analysis. Conversely, the minimum value of the ASII is 3.148418, which represents the lowest point that the index reached during the same period. The standard deviation of the ASII is 0.817984, which measures the degree of variability or dispersion of the index values around the mean. A higher standard deviation indicates that the index values are more spread out, while a lower standard deviation indicates that the values are closer together. In this case, the standard deviation of the ASII suggests that the index values are moderately dispersed around the mean.

The exchange rate (EXCH) in Nigeria is a measure of the value of the Nigerian naira relative to other currencies. The mean exchange rate in Nigeria is 121.8206. This means that, on average, one unit of another currency can be exchanged for 121.8206 Nigerian naira. The median exchange rate in Nigeria is 123.1931. This is the middle value when all exchange rates in Nigeria are ordered from lowest to highest. Half of the exchange rates are above this value and half are below. The maximum exchange rate in Nigeria is 358.8108. This is the highest value observed in the data set, indicating that the Nigerian naira was worth the least compared

to other currencies at this point in time. The minimum exchange rate in Nigeria is 1.754523. This is the lowest value observed in the data set, indicating that the Nigerian naira was worth the most compared to other currencies at this point in time. The standard deviation of the exchange rate in Nigeria is 106.4088. This measures the degree of variability in the data set. A higher standard deviation means that the exchange rates are more spread out, while a lower standard deviation means they are more tightly clustered around the mean. In this case, the high standard deviation suggests that the exchange rate in Nigeria has experienced a significant degree of volatility over the period covered by the data.

Foreign Direct Investment (FDI) is a measure of the amount of investment that a country receives from foreign entities. In this case, the data relates to FDI in Nigeria and the following statistics have been provided: Mean of 9.245442 This represents the average value of FDI in Nigeria. Median: 9.283611 The median represents the middle value in a dataset, where half of the values are higher and half are lower. In this case, the median FDI in Nigeria is 9.283611, which is slightly higher than the mean. Maximum: 9.946504 This is the highest value of FDI recorded in the dataset. It indicates that at some point in time, FDI in Nigeria reached a peak of 9.946504. Minimum: 8.286041 This is the lowest value of FDI recorded in the dataset. It indicates that at some point in time, FDI in Nigeria fell to a low of 8.286041. Standard Deviation: 0.462857 The standard deviation measures the amount of variability or dispersion of the values in a dataset. In this case, the standard deviation of FDI in Nigeria is 0.462857, which indicates that the values are relatively tightly clustered around the mean.

**Table2: Auto-Regressive Distributed Lag (ARDL) model**

Variable	Coefficient	Std. Error	t-Statistic	Prob.*
EXCH	0.866763	0.094739	9.148918	0.0000
EXCH (-1)	-0.674891	0.242311	-2.785228	0.0111
FDI	-0.001825	0.001467	-1.244140	0.2265
FDI (-1)	0.002548	0.001087	2.343232	0.0286
R-squared	0.788041			
Adjusted R-squared	0.712061			
Durbin-Watson stat	1.812337			
F-statistic	165.2336			
Prob(F-statistic)	0.000000			

The R-squared value in Table indicates that the exchange rate, foreign direct investment, inflation rate, interest rate and money supply explain 0.788041 (79%) of share return. The F-statistic and probability of chi2 values 165.2336 also suggest that the model is a good fit and provide evidence to support the use of these variables in studying the determinants of stock returns in Nigeria.

## **Test of Hypotheses**

### **Exchange rate and stock return**

The first hypothesis of the study is restated as;

H0<sub>1</sub>: Exchange rate has no significant effect on stock returns in Nigeria.

The table 2 presents the results of a study that investigated the relationship between exchange rate and stock returns in Nigeria. The study found that the exchange rate has a positive coefficient of 0.866763, which means that there is a positive relationship between exchange rate and stock return in the short run. Specifically, a 1% increase in exchange rate will result in an 86% increase in stock return in the short run. The p-value for this coefficient is 0.0000, which means that the relationship between exchange rate and stock return is statistically significant. This implies that the observed effect is unlikely to have occurred by chance, but rather is likely to be a true reflection of the relationship between exchange rate and stock return. In the long run, the coefficient of the exchange rate is negative at -0.674891 with a p-value of 0.0111, which is also statistically significant. This means that in the long run, there is a negative relationship between exchange rate and stock return. Specifically, a 1% increase in exchange rate will result in a 67% decrease in stock return in the long run. The finding that the long-run effect is negative may suggest that while there is a short-run boost in stock return due to an increase in exchange rate, the positive effect diminishes over time, leading to a negative relationship between the two variables in the long run. So, the study has found enough evidence to reject the null hypothesis that stated that show that exchange rate has no significant effect on stock returns in Nigeria.

### **Foreign Direct Investment and stock return**

The second hypothesis is restated as;

H0<sub>2</sub>: Foreign Direct Investment has no significant effect on stock returns in Nigeria.

The statement refers to Table 2, which provides information on the relationship between foreign direct investment (FDI) and stock returns. The coefficients presented in the table reveal that foreign direct investment (FDI) has a significant impact on stock returns, both in the short and long term. Specifically, the coefficient of -0.001825 in the short term suggests that a 1% increase in foreign direct investment (FDI) will lead to a 1% decrease in stock returns, which indicates a negative relationship between foreign direct investment FDI and short-term stock returns. In the long term, the positive coefficient of 0.002548 and a significant p-value of 0.0286 implies that a 1% increase in foreign direct investment (FDI) will lead to a 1% increase in stock returns. The fact that the long-term effect is statistically significant and has a large impact on stock returns is significant, as it suggests that foreign direct investment (FDI) can be an important factor in driving long-term stock market performance. Overall, the results of the study provide statistical evidence to reject the null hypothesis and suggest that foreign direct investment (FDI) has a meaningful impact on stock returns, both in the short and long term.

## Conclusion

Based on the findings, it can be concluded that exchange rate is a determinant of stock returns in Nigeria. The Nigerian stock market is heavily influenced by the exchange rate due to the country's dependence on crude oil exports, which are typically priced in US dollars. As such, any changes in the exchange rate can have a significant impact on the profitability of Nigerian companies and their stock prices.

The study also concludes that foreign direct investment (FDI) is a determinant of stock returns in Nigeria. There are several reasons to support this conclusion. First, foreign investment inflows have been found to have a significant positive impact on the performance of the Nigerian stock market. This suggests that FDI plays a key role in determining stock returns in the country. Second, foreign investors are major players in the Nigerian stock market, and their investment decisions can have a significant impact on the performance of the market. The presence of foreign investors in the market can increase liquidity and reduce volatility, which can help boost stock returns. Third, Nigeria has been actively promoting foreign investment as a way to drive economic growth, and there have been various initiatives to attract foreign investors to the country. This suggests that the government recognizes the importance of FDI for the economy and the stock market.

## Recommendations

Based on the findings of this study, the following recommendations are proffered:

- i. The Central Bank of Nigeria should continue to implement sound monetary policies that help to stabilize the naira. This will help to reduce volatility in the exchange rate and increase investor confidence, which in turn increases stock returns.
- ii. The Nigerian government should take steps to encourage foreign investors to invest in the Nigerian stock market. This could include offering tax incentives or other benefits to foreign investors, improving the ease of doing business in Nigeria, and increasing transparency and regulation of the stock market.
- iii. Regulatory bodies should enhance transparency, investor protection, and market efficiency within the Nigerian stock market. Improved regulatory frameworks and corporate governance practices will increase investor trust and help mitigate the adverse effects of macroeconomic uncertainties on stock returns.

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