



**EFFECT OF MONETARY POLICY INSTRUMENTS ON PERFORMANCE OF THE
NIGERIAN EXCHANGE GROUP: A FOCUS ON INTEREST RATES AND REAL
GDP GROWTH**

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ABSTRACT

The Nigerian Exchange Group (NGX) is a key component of the financial system that provides a platform for mobilizing capital, facilitating investment, and promoting economic efficiency. However, its performance is significantly influenced by the monetary policy implemented by the Central Bank of Nigeria (CBN). This study therefore investigated effect of monetary policy on performance of the NGX. It specifically examined how interest rates and real GDP growth influenced All Shares Index and market capitalization of the NGX, for a period of 10 years. An Ex-post facto research design was adopted where secondary data were sourced from the CBN and NBS statistical bulletin. Data were analysed using both the descriptive and inferential analytical tool. The study revealed that both interest rates and real GDP growth have significant but negative effect on the All Shares Index and market capitalization of the Nigerian Exchange Group. It is therefore recommended that the CBN should reassess its monetary policy framework to minimize the adverse effects of interest rates on the stock market. Also, the government should enhance coordination between monetary and fiscal policies to promote economic growth and stability.

Keywords: Monetary Policy, Performance, Interest Rate, Real GDP Growth, All Share Index, Market Capitalization

INTRODUCTION

Nigeria's economic development and progress are greatly aided by the Nigerian Exchange Group (NGX), previously the Nigerian Stock Exchange. The NGX, a vital part of the financial system, offers a venue for capital mobilization, investment facilitation, and economic efficiency promotion (Alile, 2020). Monetary policy, which is carried out by the Central Bank of Nigeria (CBN), has a major impact on the performance of the NGX. According to recent research, the money supply and interest rates are two examples of monetary policy instruments that might affect stock market performance (Osinubi, 2020; Adekunle, 2022). A key component of accomplishing macroeconomic goals is monetary policy, which is the conscious attempt by central banks to control the money supply and credit conditions (Dwivedi, 2008; Anyanwu, 2019). The Central Bank of Nigeria (CBN) uses monetary policy tools to keep prices stable, encourage economic

expansion, and stabilize the economy. Given Nigeria's history of economic instability, which includes high rates of unemployment, inflation, and currency rate swings, the efficacy of monetary policy is vital (CBN, 2019; Ogwuche & Elizabeth, 2023).

In Nigeria, there is ongoing discussion on how well monetary policy promotes market stability and expansion. The Nigerian stock market has seen times of high volatility despite the Central Bank of Nigeria's (CBN) attempts to preserve price stability and foster economic development (CBN, 2022). An unstable currency, shifting interest rates, and inflation volatility have all contributed to this instability (Omisakin & Adeniyi, 2021). According to recent research, monetary policy has a significant impact on stock market performance, and changes in monetary policy cause investors' stock holdings to be revalued (Adekunle, 2022). As Nigeria's main stock market, the NGX acts as a gauge of investor mood and the state of the economy. However, monetary policy actions have altered market capitalization, liquidity, and investor confidence, all of which have an effect on the performance of the NGX (Osinubi, 2020). This calls into question whether the current framework for monetary policy is adequate and capable of sustaining a strong and resilient stock market (Alile, 2020).

Using current data and empirical methods, this research seeks to examine the connection between monetary policy and the NGX's performance with an emphasis on how interest rates and real GDP growth impact the All Share Index and Market Capitalization of the NGX.

LITERATURE REVIEW

Conceptual Review

Interest Rate

Interest rates have an impact on consumer spending, investment, and borrowing costs, all of which have an impact on economic activity. Interest rates, which are often represented as a percentage of the principle or loan amount, are the cost of borrowing money or the price paid to rent funds. They are essential monetary policy instruments for stabilizing the economy and containing inflation and they are crucial in helping central banks control economic activity, which affects investment and consumption levels (Frederic & Mishkin, 2019; Samuelson & William, 2018). They play a key role in monetary policy as instruments to affect economic circumstances, such as managing economic growth and containing inflation (Mankiw, 2017). Interest rates are the costs associated with using money. They are important monetary policy levers that enable central banks to affect economic activity by modifying borrowing rates, which in turn affects investment and consumer expenditure (Brealey, Myers & Franklin, 2017).

Growth in Real GDP

The real GDP growth quantifies the rise in a nation's economic production over a certain time period after accounting for inflation. It is a crucial metric for assessing how well monetary policy supports economic development and stability. It is the rise in the value of all goods and services produced in an economy after accounting for changes in the level of prices (inflation or deflation) (Olivier & David, 2017; Froyen, 2018). It is used to evaluate the efficacy of monetary policy and is a crucial indication of economic health (Samuelson & William, 2015).

All Share Index (ASI)

This is described as the behavior of all common shares traded on the NGX. It shows the daily fluctuations in the pricing and tracks the general market movement of all listed securities on the NGX, including those listed on the Growth Board, regardless of size (Market Indices, 2023). The ASI is a series of data points that show the fluctuating average share prices of all companies listed on a stock exchange (All-share index, 2023). The All Share Index is a thorough stock market index that shows the performance of every share listed on a certain exchange, offering valuable information about general market patterns and the state of the economy. All of the companies listed on an Exchange Group are included in the All Share Index, which offers a thorough assessment of the performance of the market. It is used to track market movements and investor behavior as well as assess how monetary policy affects the economy (John, 2018; Hull, 2019).

Market Capitalization

Market capitalization is the total monetary value of all of a company's outstanding shares. It is calculated by taking the current share price and multiplying it by the number of outstanding shares. Market analysts frequently use market capitalization to reflect a firm's size because it is a weighted indicator of many stock market indexes. (Chen, 2018 as cited in Cordelia, 2022; Fernando (2022). Since market capitalization is a result of share price, it can vary greatly from month to month or even day to day (Chen, 2018; Maverick, 2019 as cited in Cordelia, 2020). The phrase "outstanding shares" describes the current stock that shareholders own in a company, including share blocks held by institutional investors and restricted shares held by officials and insiders (Chen, 2018).

Theoretical Review

Efficient Market Hypothesis (EMH)

According to Malkiel & Fama, 1970, quoted by Arumona, 2020, the Efficient Market Hypothesis (EMH) holds that stock market prices accurately represent all available information. According to

this view, all market players have unrestricted access to information at little expense, and they are logical beings looking to maximize profits.

Theory of Endogenous Growth

According to the Endogenous Growth Theory, internal variables like capitalization and stock market development propel economic growth (Romer, 1986 as cited in Arumona, 2020). This idea may assist in explaining how Nigeria's economic development is impacted by the performance of the NGX.

Empirical Review

Osakwe and Chukwunulu (2019) investigated the effects of monetary policy (money supply, interest rate, and exchange rate) on the performance of the Nigerian stock market between 1986 and 2015. The study's results, which were obtained using the ordinary least squares regression approach, demonstrated that while interest rates have a small negative impact on changes in stock market prices, the money supply and exchange rate had significant positive effects.

Using the ARDL model, Alugbuo and Chika (2020) investigated how monetary policy affected the performance of the Nigerian stock market between 1981 and 2018. The study discovered that the money supply had a negative relationship with the All-Share Index (ASI) in the current year and in the prior lags, i.e., the first, second, and third year lag periods in the short period, whereas the lending interest rate had a positive and significant relationship with all share indices in the current year. The OECD National Accounts and World Bank Indicators data files provided the time series data that were used.

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Omodero, Adetula, and Adeyemo (2021) evaluated the stock market's reaction to monetary policy changes in a developing country using Nigeria as a case study. This study used data from 1998 to 2018 to objectively establish the most recent position. Data was gathered on the money supply, interest rates, currency rates, and all share indices. The results of the multiple regression analysis showed that the all-share index is strongly positively impacted by the money supply. However, the interest rate has a minor negative impact on stock market production.

METHODOLOGY

Secondary data was obtained from the CBN and NBS statistics bulletins during a ten-year period (2013 to 2022) using an ex-post facto research approach. For data analysis, both descriptive and inferential statistical methods were used. In particular, the impact of monetary policy on the NGX's performance was investigated using multiple regression analysis.

Measurement and Description of Variable

S/N	VARIABLE	VARIABLE TYPE	MEASUREMENTS
1)	a) Interest rate	Independent Variable	Average annual interest rate
	b) Real GDP Growth	Independent Variable	Annual percentage change in real GDP
2	c) Market Capitalization Ratio	Dependent Variable	Market Capitalization ÷ GDP
	d) All Shares Index	Dependent Variable	Percentage Δe in ASI

Model Specification

NGX Performance = f(Monetary Policy)

NGX Performance = ASI, MKC

Monetary Policy = INR, RGG

ASI, MKC = f(INR, RGG)

ASI, MKC = $\beta_0 + \beta_1 \text{INR} + \beta_2 \text{RGG} + \mu$

Where:

ASI = All Share Index

MKC = Market Capitalization

INR = Interest Rate

RGG = Real GDP Growth

β_0 = constant term

$\beta_1 - \beta_3$ = Coefficient of Independent Variables

μ = Error term.

RESULTS AND DISCUSSION

Presentation of Results

Table 1.0: Descriptive Analysis

	INR	RGG	ASI	MKC
Mean	12.80000	2.250000	36022.30	14.95160

Median	12.75000	2.530000	36450.17	13.09200
Maximum	14.00000	6.220000	46840.45	23.69900
Minimum	11.50000	-1.920000	26842.07	9.247000
Std. Dev.	1.032796	2.641839	7422.350	5.404628
Skewness	0.009568	-0.208232	0.059855	0.701161
Kurtosis	1.410807	2.237209	1.591624	1.849208
Jarque-Bera	1.052458	0.314706	0.832439	1.371178
Probability	0.590829	0.854403	0.659536	0.503794
Sum	128.0000	22.50000	360223.0	149.5160
Sum Sq. Dev.	9.600000	62.81380	4.96E+08	262.8900
Observations	10	10	10	10

Source: Eview Output, (2024)

Interest rates have an average mean of 12.80000 with a standard deviation of 1.032796, real GDP growth has an average mean of 2.250000 with a standard deviation of 2.641839, and the All Share Index has an average mean of 36022.30 with a standard deviation of 7422.350, according to Table 1.0, which presents the descriptive statistics of the variables used. Finally, the average mean of market capitalization is 14.95160, with a standard deviation of 5.404628. Interest rates, real GDP growth, the All Share Index, and market capitalization are all found to be normally distributed using the Jarque-Bera normality test.

Table 2.0: Unit Root Test

Group unit root test: Summary

Series: INR, RGG, ASI, MKC

Date: 08/09/24 Time: 07:55

Sample: 2013 2022

Exogenous variables: Individual effects

Automatic selection of maximum lags

Automatic lag length selection based on SIC: 0 to 1

Newey-West automatic bandwidth selection and Bartlett kernel

Method	Statistic	Prob.**	Cross-sections	Obs
Null: Unit root (assumes common unit root process)				
Levin, Lin & Chu t*	-4.34836	0.0000	4	31
Null: Unit root (assumes individual unit root process)				
Im, Pesaran and Shin W-stat	-1.62460	0.0521	4	31
ADF - Fisher Chi-square	16.5151	0.0356	4	31
PP - Fisher Chi-square	17.4890	0.0254	4	32

** Probabilities for Fisher tests are computed using an asymptotic Chi-square distribution. All other tests assume asymptotic normality.

Source: E view Output, 2024

The group unit root test is shown in Table 2.0 above, with ADF serving as the decision-making criterion. All of the model's variables were discovered to be non-stationary at levels that make them statistically unfit for further estimation as they might provide erroneous results. The ADF test, which was used to determine if the variables were stationary, revealed that there was no unit root at first difference and that all of the variables were stationary at first difference.

Table 3.0: Regression Analysis Result

Dependent Variable: ASI

Method: Least Squares

Date: 08/09/24 Time: 08:16

Sample: 2013 2022

Included observations: 10

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	120268.6	27126.92	4.433550	0.0030
INR	-6454.183	2034.101	-3.172990	0.0156
RGG	-725.6638	795.2078	-0.912546	0.0318
R-squared	0.614150	Mean dependent var		36022.30
Adjusted R-squared	0.503908	S.D. dependent var		7422.350
S.E. of regression	5227.844	Akaike info criterion		20.20471
Sum squared resid	1.91E+08	Schwarz criterion		20.29549
Log likelihood	-98.02355	Hannan-Quinn criter.		20.10513
F-statistic	5.570893	Durbin-Watson stat		1.736494
Prob(F-statistic)	0.035683			

Source: E view Output, 2024

According to regression table 3.0, the constant value is 120268.6, meaning that the All Share Index (ASI) will rise by 120268.6 even if all other variables stay the same. Additionally, the interest rate and real GDP growth have coefficients of -6454.183 and -725.6638, respectively, indicating that the ASI will fall for each unit rise in either of the two variables. The All Share Index is significantly impacted by interest rates and real GDP growth, according to the P-value and significance level of the variables. With a coefficient of determination R² of 0.614150, the explanatory factors explain 61% of the variance of the all share index, with the remaining 39% of the variation being explained by variables not included in the model, and the modified R² explaining 50% of the high fitness of the regression after controlling for the degree of freedom. The Durbin Watson statistic of the model, 1.736494, shows that there is autocorrelation between the variables.

Table 4.0 Regression Analysis Result

Dependent Variable: MKC

Method: Least Squares

Date: 08/09/24 Time: 08:20

Sample: 2013 2022

Included observations: 10

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	86.04514	16.92443	5.084078	0.0014
INR	-5.331355	1.269072	-4.200988	0.0040
RGG	-1.267642	0.496129	-2.555067	0.0378
R-squared	0.716733	Mean dependent var	14.95160	
Adjusted R-squared	0.635799	S.D. dependent var	5.404628	
S.E. of regression	3.261642	Akaike info criterion	5.445663	
Sum squared resid	74.46814	Schwarz criterion	5.536439	
Log likelihood	-24.22832	Hannan-Quinn criter.	5.346083	
F-statistic	8.855821	Durbin-Watson stat	0.991155	
Prob(F-statistic)	0.012097			

Source: E view Output, 2024

Interpretation of Results

The constant value which is 86.04514 implies that market capitalization will rise by 86.04514 even if all other variables stay the same. With interest rates and real GDP growth having coefficients of -5.331355 and -1.267642, respectively, they have a negative connection with market capitalization, meaning that the NGX's market capitalization will fall for every unit rise in either of the two variables. Also, the P-value and significant level of the variables reveals that interest rate and real GDP growth have considerable influence on the market capitalization. With an R2 of 0.716733, the error term, which is explained by variables not in the model, accounts for the remaining 28% of the variance in market capitalization, while the explanatory factors account for 72%. Furthermore, 64% of the high fitness of the regression may be explained by the updated R2 after adjusting for the degree of freedom. The Durbin Watson statistics for the model, which show that there is autocorrelation between the variables, are 0.991155.

SUMMARY OF FINDINGS AND CONCLUSION

The study examined how monetary policy affected the Nigerian Exchange Group's (NGX) performance from 2013 to 2022, paying particular attention to the impact of interest rates and real GDP growth on the NGX's market capitalization and all-share index. The research used a sequence of analyses, starting with the descriptive analysis and progressing to the unit root test and regression analysis. The f-statistics demonstrated that, throughout the research period, independent factors significantly impacted the dependent variable. According to the regression analysis's findings, the All Share Index and the NGX's market capitalization during the review period were negatively correlated with interest rates and real GDP growth. The P-value result also showed that the All

Share Index and NGX Market Capitalization are significantly impacted by interest rates and real GDP growth. These findings run counter to those of Alugbo and Chika (2020), who discovered a strong and favorable correlation between ASI and lending rates. The results do, however, somewhat support those of Osakwe and Chukwunlu (2019), who found that interest rates had a negligible detrimental impact on changes in stock market prices. Furthermore, the findings corroborate the finding of Omodero, Adetula, and Adeyemo (2021) that interest rates have a negligible negative impact on stock market performance. Thus, the study came to the conclusion that the Nigerian Exchange Group's performance is greatly impacted by monetary policy.

RECOMMENDATIONS

The following suggestions have been made in light of the aforementioned findings: To reduce the negative impact of interest rates on the stock market, the CBN should review its framework for monetary policy. To encourage economic growth and stability, the government should improve coordination between monetary and fiscal policies. This may entail taking a more nuanced approach to interest rate adjustments, taking into account the possible effects on the stock market. To offset the detrimental effects of high interest rates on the stock market, this may entail enacting expansionary fiscal policies. The Nigerian economy should be diversified, and stock market investments should be encouraged by the government and regulatory agencies. In order to draw in both domestic and foreign investors, this may entail providing incentives like tax breaks or subsidies.

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