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**THE IMPACT OF MONETARY AND FISCAL POLICY
INTERACTION ON STOCK MARKET RETURNS IN NIGERIA
A VECTOR AUTO-REGRESSION (VAR) APPROACH**

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Abstract

This study examines fiscal and monetary policy interactions on the performance of the Nigerian stock market from 1990-2021 using yearly data sourced from the Central Bank of Nigeria Statistical Bulletin, the Nigerian Exchange Limited (NGX) and World Bank Indicators (various issues). Three non-linear models of stock market behavior were estimated using a Vector Auto-Regression Approach (VAR). Stock market performance was proxy by Market Capitalization (MCAP) and expressed as functions of monetary and fiscal policies. Monetary policy was proxy by Money Supply (MS2), Interest Rates (INT), Inflation (INF) and Exchange Rate (EXR) while Fiscal policy was proxy by Government Expenditure (GE), Consumer Price Index (CPI) and Fiscal Deficit (FD). The Phillips Perron and Augmented Dickey Fuller (ADF) unit root tests were employed to test the stationarity of the data. The cointegration results revealed the existence of a long-run relationship between the variables. The study revealed that fiscal and monetary policy interaction significantly influenced the performance of the Nigerian Exchange Limited. The results suggested an effective and efficient mix of both policies as their

combined interactions exert more significant effects on stock market behaviour. The government should avoid policies that might increase the rate of interest while investors strategically diversify their investment and hedge their position.

Keywords: Nigerian Exchange Limited, Money Supply, Inflation, Exchange Rate, Interest Rates, Vector Auto-Regression Technique, Market Capitalization

Introduction

In more recent years, the Nigerian economy has suffered from a deteriorating investment climate due to poor and inconsistent fiscal and monetary policies coupled with the rising level of insurgency such as kidnapping, banditry, and other social vices in the country. This is adversely affecting local, and foreign direct investment and other key macroeconomic variables like full employment, price stability, exchange rate stability, equitable income distribution and economic growth, all of which form the pillars of the smooth, effective and efficient functioning of which the stock market rest upon. In Africa and the world at large, Nigeria is expected to remain a source of great motivation for most emerging economies. According to the PWC report of 2015, the Nigerian economy has recorded sustained growth of about 7.0%. Her economy has successfully transited into a Global Growth Generator Country (3GC) from an underdeveloped economy (PWC, 2015). The International Monetary Fund (IMF) Report of 2016 ranked Nigeria as the largest economy in Africa and a lower middle-income country with a mixed economic system, permitting the state and private sectors to play complementary roles capable of creating the platform for efficient and effective channeling of funds from the surplus units to the deficit units. Nigeria's financial sector, service sector, information sector, and communication technology sector as well as entertainment sectors are expanding rapidly every day. The IMF report of 2016, ranked the Nigerian

economy among the first twenty-five largest economies (in terms of GDP and PPP) in the world. This unprecedented growth is largely related to the positive impact of the Nigerian capital market, through effective and efficient monetary and fiscal policies, on the overall economy. For instance, the Nigerian capital market capitalization grew significantly from about 4 trillion naira in 1996 to over 12 trillion naira in 2008 (NSE, 2011). This tremendous positive growth has, directly and indirectly, affected other emerging stock markets in the world, especially in Africa.

However, the individual impact of fiscal and monetary policies cannot be overemphasized in explaining the behavior of stock market in Nigeria. A great percentage of literature on the behavior of the Nigerian stock market focuses on its impact on monetary policy with very few on the fiscal policy. For example, see the studies of Agnello and Sousa (2010); Chatziantoniou, Dugft, and Fillis, 2013 examined the combined effects of the interaction of fiscal and monetary policies on the performance of the Nigerian stock market.

Furthermore, existing pieces of literature that examined the combined effects of fiscal and monetary policies concerning stock market performance, touch-lighted the first world countries, with few on developing countries like Nigeria. Chinazara (2011) classified the pieces of literature on the link between fiscal and monetary policies and the behavior of the Nigerian stock market, into two categories: first, the moment's studies, adopt various techniques to investigate the interactions between fiscal and monetary policies on stock market performance using panel data and second, as an extension of the first, focuses on the effects of risks and volatility on fiscal and monetary policies as they affect stock market performance. The study carried out by Yu (2011) opined that literature on the latter supersedes the former when it comes to investment strategies and policy formation and implementation. This is based on the fact that stock market planning is difficult when fiscal and monetary tools are highly volatile and risky. It is against this backdrop that the next

section of this study examined in detail, the degree of volatility of monetary and fiscal policy tools as they affect the behavior of the Nigerian stock market.

The basic question will be what is the relationship between fiscal and monetary policies and their volatility on stock market performance in Nigeria. The study further examines the disaggregated impact of fiscal and monetary policy on stock market performance, adopting the Vector Auto-Regression Approach (VAR) to examine the nature of the relationship of the variables. Policymakers will find the results of this study relevant as it will help offer policies that will cushion the adverse effects on the stock market where fiscal and monetary move in opposite direction. A distortion in monetary policy operation and fiscal balance would discourage investment. This study will be useful to market practitioners as fluctuations in both fiscal and monetary policies and it can trigger interest rates which will have adverse effects on stock market performance. This study will also guide investors in making rational investment decisions. The rest of this paper is structured as follows: section two examines the review of related literature; Section three examines the data set and methodology employed by the study; Section four presents the results and recommendations and Section five concludes the study with some vital recommendations.

Review of Related Literature

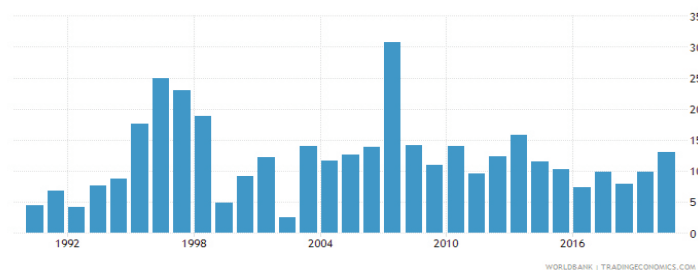
Theoretical and Conceptual Literature

Stock Market Performance in Nigeria

After the spell of the ravaging COVID-19, the Nigerian economy took a recovery trajectory in 2021 but the Nigerian stock market recorded a negative growth but within a positive territory. For instance, data from the Nigerian Bureau of Statistics (NBS) revealed a rise in the All Share Index (ASI) of the Nigerian Exchange Limited (NGX) by 6.06% to close 2021 at 42,716.44 points from 40,270.72 points at the close of 2020. These indices exceeded the

country's GDP by 2.04%. On average, the statistics revealed that the ASI recorded a positive growth in 2020 and 2021 of 50% and 6% respectively, even though the market recorded fewer local investors trading on the floor. Also, from 2019 to 2021 foreign investor's trading participation nosedived from 49% to 23% respectively. In 2021, Equity Capitalization recorded a sharp increase of 5.9%, while the NGX Oil and Gas Index, the best-performing index, recorded a return of 52.5% due to recovery in the world's oil price coupled with the outstanding performance exhibited by the oil and gas companies in the country. The next best-performing index was the NGX Growth Board Index with a return of 28.1%. Market Capitalization grew, in the fixed-income market, by 12.8% from N17.5Tn in 2020, to N19.7Tn in 2021, caused primarily by the federal government of Nigeria's Bond Issuance. However, it is still a doubt if domestic investors can still trigger a competitive atmosphere with their foreign counterparts in the Nigerian Exchange Limited (NGX).

When compared to other stock markets of developing economies like the Johannesburg Stock Exchange (JSE) in terms of performance, the gap is very wide. For instance, in 2021, while Nigeria's market capitalization to GDP is only 8%, other emerging markets like Indonesia is 47%, Malaysia 112%, Egypt 17%, India 76%, Korea 87%, and to mention a few (World Bank, 2022). The performance of the Nigerian Exchange Limited (NGX) is just a rant of the litter.



Source: World Bank (2022)

Figure 1: Market Capitalization of the Nigerian Exchange Limited (% of GDP)

Figure 1 above depicts the percentage contribution of market capitalization to the gross domestic product of Nigeria from 1990 to 2001. The fluctuating contributions can be attributed to the varying macroeconomic policies, like monetary and fiscal policies, during the stated period. For instance, after recording the highest contribution to GDP of about 31% in 2007, the percentage contribution sharply nosedived to 14% the preceding year due to the adverse effects of the global economic meltdown that plagued the whole world between 2008 and 2009. The lowest contribution of just about 2.5% was recorded in 2002. However, 2021 CEIC data reported the market capitalization of the Nigerian Exchange Limited at 43.125 NGN tn as at 2021 and 16.540 NGN tn on average from 2008. The value of market capitalization clocked the highest at 49.377 NGN tn in 2021, after the COVID-19 era, and lowest at 7.030 NGN tn in 2009, as a result of the global economic meltdown.

Structure and Prospects of the Nigerian Exchange Limited Towards a Better Performance

Following the statutory approval from the Corporate Affairs Commission (CAC) and the Securities and Exchange Commission (SEC), the demutualization process of the Nigerian Stock Exchange (NSE) was completed. This means that the NSE has been successfully transited into a non-operating holding company called the Nigerian Exchange Group plc (NGX Group) with three subsidiaries namely the:

- i. Nigerian Exchange Limited (NGX), which functions as the operating exchange
- ii. Nigerian Exchange Limited Real Estate Limited (NGX RelCo), which functions as a real estate company and
- iii. Nigerian Exchange Limited Regulation Limited (NGX RegCo), which function as an independent regulatory company.

The demutualization process will make the Exchange more efficient, effective, active, and functional and commercialized in its dealings.

The Nigerian Exchange Limited (NGX) is focused on creating an investment climate for investors that is efficient, reliable and adaptable, which will enable them to access and save capital. The Exchange aims to enhance business processes and operations in the areas of consumer – centric solutions, digital transformation and strategic partnership. The primary goal is to diversify the Exchange's products and services, deepen the capital market, encourage and promote capital retail participation and promote economic growth at large. The strategy that took off in March 2022 will not only maximize revenue generation, increase efficiency, enhance value but will also reduce costs.

Empirical Literature

The study of Kuralbayewa (2013) adopted the inelasticity concept to explain the fiscal policy- stock market behavior in a way that stock market performance is improved when the supply of foreign capital is elastic but in advanced countries, borrowing from abroad improves stock market performance, with adjustments of taxes and public expenditure. The case is quite different in a developing country like Nigeria with an inelastic supply of foreign capital; public expenditure must be adjusted upward in order to attract more funds to the stock market. The study carried out by Chatziantoniou et al. (2013) explicitly examined the interaction between fiscal and monetary policies concerning stock market performance in the United States, United Kingdom and Germany with quarterly data from 1991 to 2010 and found that monetary and fiscal policy interactions significantly influenced stock market performance. Their results further revealed that the United Kingdom stock market behavior was significantly and directly influenced by the individual policy and when combined. The German stock market was positively

influenced by money supply, with no direct effect from fiscal policy. The optimal interactions between interest rates (monetary policy) and fiscal policy triggered the birth of DAX30 (an innovation in the German's stock market). Through the interest rate channel, the money supply has a significant effect on the United State stock market, with no direct significant relationship with the instruments of fiscal policy. However, the stock market responds to the interactions between interest rates, money supply and fiscal expenditure. Cevik, Di Booglu, and Kutan (2014) adopted a Markov –regime–switching model to critically examine the interactions between fiscal policy and monetary policy with the effects of their interactions on stock market performance of Estonia, Slovenia, Czech Republic, Poland, Slovak Republic and Hungary. Their empirical results revealed that due to the European Union enlargement, there were interactions during the active regime until 2000 when it became passive. The interaction of the two policies revealed a more active fiscal policy and a more passive monetary policy from countries like Hungary, Slovenia, Poland and Estonia. The implication is that the stock market is more influenced by fiscal policy than monetary policy in the aforementioned countries. The study of Yuan and Chen (2015) critically analyzed the interaction and effects of exchange rates, fiscal policy, external balances and monetary policy in relation to inflation and economic growth in Brazil, Russia, India, China and South Africa (BRICS). The VAR estimates reaffirmed that monetary policy shocks had a greater influence on economic growth with a weak fiscal policy influence on real output, especially from a cross-country perspective. The findings of their research agree with the study carried out by Di Giorgio and Nistico in 2008 for Italy. The study of Cem (2012) investigated the interaction between monetary and fiscal in Turkey, with the adoption of a New Keynesian open economy DSGE model, from 2002 to 2009. His major findings reported the rate of inflation as a significant variable that connects both fiscal and monetary policies.

Few pieces of literature exist on policy implications of the interactions between fiscal and monetary policies on stock market performance in developing countries like Nigeria. The majority of the literature focused on developed countries. Hence, this study attempts to bridge this gap through a deep inquiry into the interaction of the instruments of monetary and fiscal policy as they influence the Nigerian stock market prices.

Materials and Methods

Method of Data Analysis

The core objectives of this study deal with examining the short and long-run equilibrium relationship that exists between the performance of the Nigerian Exchange Limited proxy by Market Capitalization (MCAP) and fiscal and monetary policy interactions in Nigeria. To achieve these objectives an unrestricted Vector Auto-Regression (VAR) Model was adopted. The VAR examines all variables as dependent and does not impose *a priori* restrictions on structural relationships (Gujarrati, 2003).

Nature and Sources of Data

Data were generated from the Nigerian Stock Exchange (NSE), Central Bank of Nigeria (CBN) Statistical Bulletin and World Bank Indicators for Nigeria (various issues) from 1990 to 2021. Monetary policy was proxy by Money Supply (MS2), Interest Rates (INT), Inflation (INF) and Exchange Rate (EXR). Fiscal policy was proxy by Government Expenditure (GE), Consumer Price Index (CPI) and Fiscal Deficit (FD).

Models Estimation

Three econometric models are considered in this study. The third model takes monetary policy proxy by Money Supply (MS2), Interest Rates

(INT), Inflation (INF) and Exchange Rate (EXR), as the explanatory variables and stock market performance proxy by Market Capitalization (MCAP) as the dependent variable. The second model takes Fiscal Policy proxy by Government Expenditure (GE), Consumer Price Index (CPI) and Fiscal Deficit (FD), as the independent variables and the Stock Market behavior proxy by Market Capitalization (MCAP) as the dependent variable while the first model combines both fiscal and monetary policies as explanatory variables and Stock Market behavior proxy by Market Capitalization (MCAP) as the dependent variable. These were used to obtain reliable parameter estimates and can be expressed as:

$$MCAP = f(MP, FP) \quad (1)$$

$$MCAP = f(FP) \quad (2)$$

$$MCAP = f(MP) \quad (3)$$

Where:

MCAP= Market Capitalization

MP= Monetary Policy

FP= Fiscal Policy

Equation (1) is expanded such that MCAP can be expressed as a function of all the variables as follows

$$MCAP_t = B_0 + B_1MS2_t + B_2INT_t + B_3EXR_t + B_4INF_t + B_5GE_t + B_6CPI_t + B_7FD_{t-7} + e_t \quad (4)$$

Results and Discussion

The results of the data analysis and discussions are presented below. In examining the existence of stochastic non-stationary in the series, the research establishes the order of integration of individual time series through the unit root test. The Phillips Perron and Augmented Dickey Fuller (ADF) test were adopted which forms the post-diagnostic test approach in investigating whether the variables used in the study have unit roots or not. The unit root test

results are presented in Table 4.1 below.

Table 4.1a Summary of Results from the Unit Root Test

Variables	ADF Test Statistics (At first difference)	Mackinnon Critical Values			Prob. (value)	Remark
		1%	5%	10%		
CPI	-5.244	-4.309	-3.574	-3.221	0.001	Stationary
EXR	-3.645	-4.309	-3.574	-3.221	0.043	Stationary
GE	-3.553	-4.374	-3.603	-3.238	0.055	Stationary
INF	-3.621	-4.374	-3.603	-3.238	0.048	Stationary
INT	-6.235	-4.309	-3.574	-3.221	0.000	Stationary
MCAP	-5.322	-4.356	-3.595	-3.233	0.001	Stationary
MS2	-11.154	-4.323	-3.580	-3.225	0.000	Stationary

Source: Author's Computation

The unit root test as identified in the Augmented Dickey Fuller Test result in table 4.1a shows that consumer price index, exchange rate, government expenditure, inflation rate, interest rate, market capitalization and money supply are stationary after first differencing which implies that the series are integrated at order one, I(1).

Table 4.1b: Phillips Perron (PP) Summary of the Result from the Unit Root Test

Variables	PP Test Statistics (At level)	Mackinnon Critical Values			Prob. (value)	Remark
		1%	5%	10%		
CPI	-5.275	-4.309	-3.574	-3.221	0.001	Stationary
EXR	-3.633	-4.309	-3.574	-3.221	0.044	Stationary
GE	-6.613	-4.309	-3.574	-3.221	0.000	Stationary
INF	-6.406	-4.309	-3.574	-3.221	0.000	Stationary
INT	-6.248	-4.309	-3.574	-3.221	0.000	Stationary
MCAP	-7.303	-4.309	-3.574	-3.221	0.000	Stationary
MS2	-4.216	-3.574	-3.221	-3.218	0.012	Stationary

Source: Author's Computation

The unit root test as identified in the Phillips Perron Test result shows that consumer price index, exchange rate, government expenditure, interest rate, inflation rate, market capitalization and money supply are stationary at level, implying that the series are integrated at order zero, I (0). Their probability values are all below 0.05.

Long run Effect of Monetary Policy on Nigeria's Stock Market Performance

Table 4.2a: Unrestricted Cointegration Rank Test (Trace)

Hypothesized CE(s)	No. of	Eigen-value	Trace Statistics	0.05 value	Critical	Prob. (**)
None*		0.727	76.210	69.818		0.014
At most 1		0.442	38.550	47.856		0.278
At most 2		0.315	21.601	29.797		0.321
At most 3		0.275	10.627	15.494		0.235
At most 4		0.043	1.289	3.841		0.256

Table 4.2b: Unrestricted Cointegration Rank Test (Maximum Eigen value)

Hypothesized CE(s)	No. of	Eigen-value	Maximum Eigen Value	0.05 value	Critical	Prob. (**)
None*		0.727	37.660	33.876		0.016
At most 1		0.442	16.949	27.584		0.584
At most 2		0.315	10.974	21.131		0.649
At most 3		0.275	9.337	14.264		0.259
At most 4		0.043	1.289	3.841		0.256

Source: Author's Computation

(*) denotes rejection of the hypothesis at 5 % significance level

From the Johansen co-integration analysis in table 4.2a and 4.2b, given the appropriate lag selection criteria to be 1, there exists a long run relationship between stock market performance indicator and monetary policy in Nigeria. From the unrestricted cointegration rank test; using the trace statistics, there exists one (1) cointegrating equation of which the probability values are less than 0.05 at 5% confidence level. The maximum Eigen value corroborates that of the trace statistics of one (1) cointegrating equation. The Johansen cointegration revealed that there is an absence of full rank because the subtraction of the number of cointegrating equations and the variables under study is not equal to zero, therefore implying that the model is good and is in functional form. There is absence of multicollinearity as the value of the log-likelihood is positive. Based on this vector autoregressive (VAR) is performed to estimate the model's parameters (Johansen 1995; Granger and Jin-Lung Lin, 1994).

Long run Effect of Fiscal Policy on Nigeria's Stock Market Performance

Table 4.3a: Unrestricted Cointegration Rank Test (Trace)

Hypothesized CE(s)	No. of	Eigen-value	Trace Statistics	0.05 Critical value	Prob. (**)
None*		0.784	94.690	69.818	0.000
At most 1*		0.578	51.749	47.856	0.020
At most 2		0.407	27.584	29.797	0.088
At most 3		0.275	12.921	15.494	0.117
At most 4*		0.129	3.886	3.841	0.048

Table 4.3a: Unrestricted Cointegration Rank Test (Maximum Eigen value)

Hypothesized CE(s)	No. of	Eigen-value	Maximum Eigen Value	0.05 Critical value	Prob. (**)
None*		0.784	42.940	33.876	0.003
At most 1		0.578	24.165	27.584	0.129
At most 2		0.407	14.663	21.131	0.313
At most 3		0.275	9.034	14.264	0.283
At most 4*		0.129	3.886	3.841	0.048

Source: Author's Computation

(*) denotes rejection of the hypothesis at 5 % significance level

From the Johansen co-integration analysis in table 4.3a and 4.3b, given the appropriate lag selection criteria to be 2, there exists a long run relationship between stock market performance indicator and fiscal policy in Nigeria. From the unrestricted cointegration rank test; using the trace statistics, there exist three (3) cointegrating equations of which the probability values are less than 0.05 at 5% confidence level. The maximum Eigen value corroborates that of the trace statistics of two (2) cointegrating equations.

Table 4.4: Vector Autoregressive Estimates (Monetary Policy Stock Market relationship)

	LNMCAP	LNMS2	INT	INF	EXR
LNMCAP	0.837 (0.180) [4.639]	0.132 (0.056) [2.327]	-0.523 (2.034) [-0.257]	-15.242 (9.019) [-1.689]	-22.591 (10.478) [-2.155]
LNMS2(-1)	0.071 (0.248) [0.286]	0.823 (0.078) [10.505]	-1.063 (2.800) [-0.379]	17.188 (12.412) [1.384]	37.396 (14.420) [2.593]
INT(-1)	0.002 (0.015) [0.135]	0.013 (0.004) [2.695]	0.393 (0.173) [2.263]	0.374 (0.769) [0.486]	-0.061 (0.894) [-0.068]
INF(-1)	0.005 (0.003) [1.499]	-0.001 (0.001) [-1.408]	0.013 (0.039) [0.347]	0.381 (0.175) [2.177]	-0.352 (0.203) [-1.734]
EXR(-1)	0.004 (0.002) [1.505]	0.0003 (0.0009) [0.371]	0.020 (0.032) [0.643]	-0.032 (0.142) [-0.229]	0.680 (0.165) [4.111]
C	0.310 (0.589) [0.526]	0.434 (0.185) [2.340]	16.180 (6.642) [2.435]	-9.901 (29.443) [-0.336]	-69.114 (34.205) [-2.020]
R- Squared	0.990	0.998	0.684	0.539	0.953
Adjusted R- Squared	0.988	0.998	0.618	0.443	0.943
F-Statistics	487.26	3224.195	10.397	5.626	97.474
Log likelihood	-1.607	33.006	-74.286	-118.954	-123.451
Akaike AIC	0.507	-1.800	5.352	8.330	8.630

Source: Author's Computation

The vector autoregressive model shows that MCAP is statistically significant in the current year (t) as the probability of the t-ratios (4.639) is greater than critical value of 5%. The R-square is 0.990 showing that the explanatory variables explained 99% of changes in the dependent variable. It remains strong after adjusting for the degree of freedom to 98% (Adjusted R-squared). This reveals high goodness of fit meaning that the variable chosen are strong in explaining the performance of the stock market indicator or the performance of the Nigerian economy. In relation to the magnitude and signs of the estimated coefficients which capture the effects of monetary policy variables on market capitalization, it can be concluded from the model that interest rate, money supply, and exchange rate exhibited positive relationships with MCAP. From the table, a unit change in the previous period of money supply brings about 0.071 percent increase in market capitalization at 5% level of significance. Also, a unit change in inflation brings about 0.005 units increase in market capitalization at 5% significance level which showed a positive impact but does not conform to the theoretical expectation. A unit change in exchange rate brings about 0.004 unit increase in market capitalization and it is insignificant at 5% level while a unit change in the rate of interest brings about 0.005 increase in market capitalization at a significant level of 5% level.

The insignificant relationship between the inflation rate, exchange rate and interest rate and money supply suggest that monetary policy as a policy option had been inactive in influencing these macroeconomic variables to induce the performance of the stock market. This may be due to the dominance of fiscal policy (government expenditure) employed to stimulate such macroeconomic variables and the weak base of the Nigerian financial institution in transmitting monetary policy to positively trigger the growth of the real sector could be responsible for the insignificant relationship between the variables. The insignificant effect of the broad money supply is the result of the autonomy of the monetary authorities in price instability management and other measures taken to control price instability in Nigeria. This also points to the stringent policies and information asymmetry in accessing credit facilities for investment.

Table 4.5: Vector Autoregressive Estimates (Fiscal Policy and Stock Market Relationship)

	LNMCAP	GE	INF	CPI	FD
LNMCAP	0.715 (0.246) [2.903]	0.034 (0.155) [0.224]	4.711 (12.455) [0.378]	-1.668 (0.674) [-2.473]	430.906 (194.808) [2.178]
LNMCAP(-1)	-0.151 (0.293) [-0.514]	0.046 (0.185) [0.251]	-16.100 (14.846) [-1.084]	1.171 (0.804) [1.456]	-637.212 (235.745) [2.702]
LNGE(-1)	-0.085 (0.297) [-0.286]	0.214 (0.187) [1.146]	-16.011 (15.021) [-1.065]	0.166 (0.813) [0.204]	399.114 (238.512) [1.673]
LMNGE(-2)	0.667 (0.287) [2.321]	0.576 (0.181) [3.183]	25.843 (14.527) [1.778]	0.622 (0.786) [0.790]	-126.361 (230.676) [-0.547]
INF(-1)	0.004 (0.004) [1.212]	0.004 (0.002) [1.762]	0.510 (0.202) [2.519]	0.014 (0.010) [1.297]	-3.100 (3.218) [-0.963]
INF(-2)	-0.001 (0.003) [-0.314]	-0.002 (0.002) [-0.953]	-0.351 (0.173) [-2.020]	0.007 (0.009) [0.760]	-1.948 (2.760) [-0.705]
LNCPI(-1)	0.127 (0.092) [1.378]	0.032 (0.058) [0.566]	-4.698 (4.662) [-1.007]	0.782 (0.252) [3.100]	71.660 (74.039) [0.967]
LNCPI(-2)	-0.106 (0.083) [-1.270]	0.022 (0.052) [0.426]	1.807 (4.232) [0.427]	0.069 (0.229) [0.301]	-82.542 (67.207) [-1.228]
FD(-1)	0.0003 (0.0003) [1.199]	-9.14E-05 (0.0001) [-0.478]	0.002 (0.015) [0.187]	-0.0002 (0.0008) [-1.287]	1.456 (0.243) [5.985]
FD(-2)	6.73E-05 (0.0003) [0.219]	0.0002 (0.0001) [1.110]	0.005 (0.015) [0.329]	-0.0009 (0.0008) [-1.083]	-0.307 (0.246) [-1.248]
C	-0.872 (0.506) [-1.724]	0.714 (0.318) [2.239]	46.387 (25.583) [1.813]	-0.793 (1.385) [-0.572]	-510.079 (406.218) [-1.255]
R-Squared	0.992	0.993	0.690	0.869	0.828
Adjusted R-Squared	0.988	0.989	0.518	0.797	0.735
F-Statistics	252.385	264.714	4.012	11.999	8.670
Log likelihood	4.181	17.575	-109.576	-25.014	-189.760
Akaike AIC	0.470	-0.453	8.315	2.483	13.845

Source: Author's Computation

The vector autoregressive model shows that MCAP is statistically significant in the current year (t) as the probability of the t-ratios (2.903) is greater than a critical value of 5%. The R-square is 0.992 showing that the explanatory variables explained 99% of changes in the dependent variable. It remains strong after adjusting for the degree of freedom to 98% (Adjusted R-squared). This reveals high goodness of fit meaning that the variables chosen are strong in explaining the performance of the stock market indicator or performance for the Nigerian economy. The signs and magnitude of the coefficients capture the effect of fiscal policy variables on market capitalization. It is obtained from the model that government expenditure at lag 2, inflation rate at lag 2, consumer price index at lag 2 and fiscal deficit had their expected signs. Furthermore, the estimated coefficients of individual variables were examined to determine the nature of the relationship between stock market performances and fiscal policy variables. The co-efficient of government expenditure at lag 2 is positive and significant. From the table 4.5, a unit change in previous period of government expenditure brings about 0.667 percent increase in market capitalization at 5% level of significance. Also, a unit change in inflation rate brings about 0.001 units decrease in market capitalization at 5% significance level. A unit change in consumer price index brings about 0.106 units decrease in market capitalization and it is insignificant at 5% level while a unit change in fiscal deficit brings about 6.73E-05 increase in market capitalization at a significant level of 5% level.

Conclusion and Recommendations

This study explicitly investigates the impact of the interaction between monetary and fiscal policies on the Nigerian stock market performance and the volatilities of the macroeconomic variables as they influence stock market volatility. The VAR estimation technique was employed to analyse the time series data that were sourced from the World Bank, Nigerian Bureau of

Statistics and the Central Bank of Nigeria Statistical Bulletin from 1990 to 2021 on the Nigerian economy. The study also reaffirmed that effective monetary and fiscal policy formulation and implementation, from good governance, are influential and potent determinants of stock market performance in Nigeria. Through firms' corporate cost of capital, a small change in the rate of interest will change the present value of firms' future net cash flows from the interest rate channel. Furthermore, the VAR results confirmed the evidence of the existence that a short and long-run equilibrium relationship exists between market capitalization and fiscal and monetary policies. Through the credit channel, effective monetary policy can trigger increased corporate investment which in turn leads to increased future cash flows and market value of firms. Stock prices will nose-dive if the rate of interest is arbitrarily increased but this increase will trigger an appreciation of the domestic exchange rate. This will encourage imports and discourage exports, weakens Nigeria's competitiveness, discourage domestic production and cause a downswing in stock prices in the long run.

This study strongly recommends calibrating both fiscal and monetary policies in a single model when formulating and implementing stock market policies under the auspices of good governance. In order to attract higher capital inflows, interest rates must be reduced to fetch a higher rate of returns on firms' investments. On the contrary, a higher rate of interest encourages more savings but discourages capital inflows to the stock market causing investors to demand for a higher risk premium which may deter investment and economic growth. Discretionary policies should be discouraged as it might hike the rate of interest which may not augur well for the Nigerian stock market. Foreign and local Investors can avert risks by being watchful and closely monitoring the fluctuating trend of interest rates, adoption of objective and strategic approach to reducing losses through protective puts, stop orders and profit taking, as smart ways to stay in business. Furthermore, investment diversification and hedging their position will also keep investors afloat.

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