

REACTIONS OF STOCK MARKET RETURNS ADJUSTMENT TO MONETARY POLICY IN NIGERIA: ECM APPROACH

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Abstract

This paper seeks to examine the reaction of stock market returns to monetary policy shocks of selected monetary policy instruments in Nigeria for the period 1985-2016. The long-run impact of the monetary policy instruments was also critically analyzed to determine the speed of adjustment of the market. This period was considered due to the liberalization of the financial sector. Stock market returns proxied by end-period total market capitalization was regressed against selected major monetary policy instruments; deposit money bank 12-month deposit interest rate (BDR), broad money supply (BMS) and inflation rate (IFR). Using the multivariate Engle-Granger Cointegration and Error correction mechanism (ECM) model, the study found that deposit interest rate and broad money supply have negative and positive long-run and short-run significant impacts on stock market returns respectively, whereas the impact of inflation rate is insignificant in the long-run but significant in the short-run. The ECM result showed the right sign, indicating that stock market returns react to long-run monetary policy shocks by approximately 2% in two years. The study strongly recommends adoption and effective implementation of realistic expansionary monetary and fiscal policy measures to revamp the economy and improve stock market performance in Nigeria.

Key Words: Monetary Policy, Stock Market Returns, ECM, Market Capitalization

JEL Code: G

1.0 Introduction

Monetary policy as one of the macroeconomic instruments for driving an economy towards the actualization of desired national economic objectives of an economy plays a dominant role in the management of the economy by the monetary authorities. It entails those deliberate actions initiated by the Central Bank or the apex monetary authority of any economy aimed at influencing the cost, availability and direction of flow of money and credit. It covers an array of measures or policy packages designed to influence or regulate the volume, costs and direction of money in the economy as well as all efforts of the monetary authorities to control the supply of money and credit conditions, and to stabilize prices and growth of aggregate growth indicators over time (Nwankwo, 1991).

Through monetary policy the monetary authorities determine the conditions under which it determines and control the supply of money that will lead to stability of prices and the direction of flow of economic activities in the economy. Monetary policy formulation and implementation can be fashioned based on the duo of money supply and credit availability in the economy. In ensuring monetary stability, the Central Bank through the deposit money banks implements policies that guarantee the development of the economy through appropriate changes in the level of money supply and various instruments of monetary policy. These instruments include the cash reserve requirements, liquidity ratio, open market operations and primary operations. All these affect banks in their credit operations and thus influence the cost and availability of loan.

Monetary policy measures are administered either as direct or indirect instruments. Direct monetary policy measures are those that are applied to the portfolio or balance sheet of deposit money banks in the financial system using selective credit control, stabilization securities, and administered interest rates etcetera while indirect monetary policy measures are those that use market-determined instruments such as open market operations, monetary policy rate (minimum rediscount rate) and reserve requirements. Using the direct monetary policy measures, the monetary authorities directly influence items of the balance sheet of deposit money banks. In such a system interest rates are set and credits are allocated by monetary authorities in accordance with government's national economic plan. Under this system, the financial system, and especially financial market conditions, plays no role in the determination of financial prices or returns and allocation of credit. On the other hand, there is a causal nexus between indirect monetary policy and financial system as both of them influence each other. The decontrol of interest rates and the use of indirect monetary policy are crucial steps towards the development of financial markets. Particularly, there is a mutual relationship between the operation of indirect monetary control and the existence of well functioning capital markets (Okpara, 2010).

It is therefore the concern of most policy makers that monetary policy permeates deeply into the real sector to engender economic growth. This can only be achieved if monetary policy is properly transmitted into the macro economy through the various channels notably interest rate channel, credit channel and the price channel. In Nigeria, monetary policy has however been known to be transmitted through the liquidity channel, credit channel and exchange rate channel. An effective transmission mechanism will be the one that will increase the return on investment. As we know, investors can only benefit from returns on investment if earnings per stock are increasing adequately. Hence, to understand how policy actions especially, monetary policy affect the macro-economy, requires knowing how monetary policy actions affect key financial markets (Uchendu, 1996).

Generally, financial market is an organized institution that is created for the sale and purchases of funds. It consists of the money and capital markets. Money market is that which deals in short-term securities while the capital market is that which specializes in the

mobilization of long-term funds in form of stocks, bonds and equities. The capital market is part of the financial system which connects the borrowers and lenders in transfer of funds and makes investment. It deals with the long-term securities issued by public companies, and government stock exchanges (Ghani and Chauhary 2016).

In view of the foregoing, much of the concern of the analyst has been on the relationship and impact of monetary policy on the stock market returns but not much attention is given to the response of stock market returns to monetary policy impact or shocks. The researcher wishes to examine response of stock market returns to monetary policy shocks. Thus in line with the above, answers will be sought to the questions: Is there significant response of stock market returns to monetary policy variables in Nigeria, since All Share Index (ASI) which is used as a measure of how well a market is performing has been fluctuating downwards after its peak at 64834.33 in March, 2008? The ASI are 21363.02, 24943.65, 36178.75, 30138.08, and 28502.36 million in 2009, 2011, 2013, 2015, and 2016 respectively. What is the significant speed of adjustment between selected monetary policy instruments on stock market return in Nigeria?

To achieve the objectives of this study, we organized the study in sections. Section one, introduces the study while section two reviews the related literature. Section three, describes data set and methodology. Section four, presents and interpret the estimated results, and finally, section five provides conclusion and policy implications.

1.0 Review of Related Literature

In Nigeria, trading on the capital market is coordinated by the Nigeria Stock Exchange. A capital market also known as stock market comprises primary and secondary markets. A primary market is a market for new issues of securities while the secondary market consists of exchanges and over-the-counter market where securities are bought and sold. The stock market is very vital to the growth, development and strength of any economy because it supports government and corporate initiatives, finances the exploitation of new ideas and facilitates the management of financial risks (Al-Faki, 2005).

A good capital market can be achieved if a country's monetary policies are well formulated and implemented over time. Thus, there is a link between monetary policy measures and stock market behaviour and performance. However, the extent or degree of the relationship has been an object of argument as there has been debate among economists as to whether or not monetary policies have significant effect on stock market behaviour as expressed in the all shares index and market capitalization, and the stock market returns. Following series of reforms and policies, macroeconomic variables in Nigeria over the years alongside with stock market returns and price index, it could not be said that there exists any relationship between monetary policy and stock market returns in Nigeria. In fact, the relationship between

changes in stock market returns and changes in monetary policy have attracted strong debate among economic and financial analysts (Gbosi, 2002; and Agie and Nenbee, 2010).

Osisanwo and Atanda (2012) and Maku and Atanda (2009) argue that stock market prices are influenced by some macroeconomic variables such as broad money supply, monetary policy rate, gross domestic product (GDP), exchange rate and inflation rate. Abaenewe and Ndugbu (2012) argue and that in different economies of the world, monetary policy effect on stock market varies according to peculiarity and prevailing economic conditions as well as efficiency of the stock market in response to new policies and inflationary trend.

However, some literatures argue that changes in monetary policy variables can have a significant impact on the movements in the stock market. Since stock market has become one of the main elements in influencing macroeconomic stability, movements in the stock market can have a significant impact on the macro-economy (Ordio and Nwaogwugwu, 2016). Ghani and Chauhary (2016) in their view, argue that there are multiple factors which affect stock market performance of which monetary policy is one. Their work shows that the impact of monetary policy announcement is insignificant on stock market returns. Ekene (2016) in his study found that monetary policy has no significant impact on emerging stock markets like that of Nigeria. He further argues that though there is a relationship between monetary policy and stock price, the strength of that relationship however depends on structural and institutional features of the economy. Consequently the transmission mechanism may as well differ between countries.

Theoretical Framework

A model of equity prices, output, interest rates and money supply

One of the earliest underlining theories of monetary phenomenon on macroeconomic factors which include return on equity is in the restatement of the quantity theory by Friedman (1956), where he proposed a general money demand function in the form:

$$Md = f(Y_p, r_b, r_e, r_m, \Pi^e) \quad (1)$$

Where money demand is positively related to permanent income Y_p , negatively related to expected interest rates on bonds, r_b , the expected rate of return on equity r_e , expected market interest rate r_m , and inflation rate Π^e .

The rate of return on bonds and equity represent the opportunity costs of holding money. The rate of return on money is the services provided by holding money as well as any interest payments on money deposits at banks. Expected inflation Π^e represents the return on holding goods. This element is the distinctive relationship that agents hold goods as assets and substitutes them for money if they expect a price to rise that is capital gains on holding goods.

The illustration is governed by the flow constraints;

$$(\Psi^d = \Psi^s) = dV = 0 \quad (2)$$

Where Ψ^d is aggregate demand and Ψ^s is aggregate supply and dV is the change in inventory holdings. On the other hand, the asset allocation decision can be viewed from Walras's Law stock constraint:

$$(M^d - M^s) + (B^d - B^s) = 0 \quad (3)$$

Where M^d and M^s is the stock level of money demand and supply and B^d and B^s is the stock level of bond demand and supply – refers to all alternative interest bearing financial assets which includes equities.

Considering a condition of full equilibrium, if there is an increase in money supply M^s , the left hand equation will be negative, which is a situation of excess bond demand. Hence the price of bonds or equity will increase and necessarily interest rate will fall-bringing the equity market into equilibrium, and by Walras's Law, the money market as well will be in equilibrium.

A generalized portfolio constraint can be stated by relating the money demand to conditions in the goods market to create a direct channel of aggregate demand to output.

$$(M^d - M^s) + (B^d - B^s) + (\Psi^d - \Psi^s) = \dots \quad (4)$$

In an expansionary monetary policy, M^s will increase hence the money market that is the term on the left will be negative. In any case because of the goods market there may not necessarily be an excess demand for bonds, since the disequilibrium in the money market can be offset by an excess demand for goods i.e $M^d - M^s < 0$, $B^d - B^s = 0$, and $\Psi^d - \Psi^s > 0$. By the Keynesian multiplier, as there is excess aggregate demand, then output Ψ^s will rise and money demand M^d will rise so that the goods market and money market are brought into equilibrium. Therefore Friedman's proposition is that an increase in money supply does not necessarily imply an excess demand for equity or bonds but may be offset by an increase in the demand for durable household goods such as a house or an automobile. This proposition is one that we wish to prove or rebut in this study, to know whether changes in money supply actually leads to proportionate changes in stock prices or otherwise.

The Present Value or Discounted Cash Flow Model

The present value of discounted cash flow model offers useful insights on the stock market effects of monetary policy changes (Ordio and Nwaogwugwu, 2016). According to this model the stock price (S_t) is the present value of expected future dividends (D_{t+j}). Under the assumption of constant discount rate (R), it can be shown that:

$$S_t = E_t \left[\sum_{j=1}^k \left(\frac{1}{1+R} \right)^j D_{t+j} \right] + E_t \left[\left(\frac{1}{1+R} \right)^k S_{t+k} \right] \dots \dots \dots (1)$$

Where, E_t is the conditional expectations operator based on information available to market participants at time t , R is the rate of return used by market participants to discount future dividends, and K is the investor's time horizon (stock holding period). The standard transversality condition implies that as the horizon K increases the second term in the right-hand side of Equation (1) vanishes to zero (no rational stock price bubbles):

To derive Equation (1) we may assume for simplicity that there is an investor with two alternative investment opportunities over a one-period horizon: either a stock with expected gross return $E_t [S_{t+1} + D_{t+1}] / S_t$, or a risk – free bond with constant nominal gross return $1 + R$. Arbitrage opportunities imply that, for the investor to be indifferent between the two alternatives, they must yield the same expected return $E_t [S_{t+1} + D_{t+1}] / S_t = 1 + R$.

As Patelis (1997) argues, stocks are claims on future economic output, so if monetary policy has real economic effects then stock markets should be influenced by monetary conditions.

Monetary Policy and Contemporaneous Stock Returns

The contemporaneous relationship between monetary conditions and stock returns is examined using the following regression model:

$$\Delta S_t = \alpha + \beta \Delta r_t + \mu_t \text{ -----(2)}$$

Where ΔS_t is a measure of equity returns (measured in local currency). The measures used in this study are nominal returns (with and without dividends), and real returns (with and without dividends). The independent variable Δr_t , denotes our measure of monetary policy changes. It is assumed that positive (negative) values of the change of the short-term rate are associated with a restrictive (expansive) monetary environment. If the β coefficient is negative and statistically significant, then it is implied that monetary tightening depresses the stock market within the same month that the interest rates increase(s) occurred (Osuagwu, 2016).

Equation (2) has been frequently used in the financial economics literatures. In the literature that examines the effect of inflation on stock prices, using a generalized Fisher effect framework (which relates nominal stock returns with expected inflation), expected inflation is often proxied by the nominal treasury bill rate at the beginning of the period (Fama and Schwert, 1977). They justified this approach by observing that almost all of the variability in the nominal Treasury bill rate is due to revisions of inflation expectations. More recent literature on monetary policy rules also suggests a positive correlation between the level of short-term interest rates and inflation.

2.0 Methodology

For this study, we employ Ex-post Facto Research Design. This is because the study attempts to explore cause and affect relationships, where causes already exist and cannot be manipulated, but rather to use what already exist and look backwards to explain why.

Variables employed for the study include: End –period Total Market Capitalization [TMC] of the Nigerian stock market as the dependent variable and Deposit money banks 12-month deposit interest rate (BDR), Broad money supply (BMS) and Inflation growth rate (IFR) as the explanatory variables.

For the purpose of data analysis, we considered it plausible to follow the framework adopted by modifications of a multivariate linear equation which expressed Total Market Capitalization as a function of the explanatory variables (BDR, BMS and IFR). This model was estimated, adopting Unit Root Test, Co-integration Test, and Error Correction Mechanism, to determine if the hypotheses of no significant response of Total Market Capitalization to monetary policy shocks, and of no speedy adjustment between stock market returns and monetary policy instruments hold for Nigeria. The study follows Kim (2003). E-views econometric package was employed in the analysis.

2.1 Model Specification

The econometric model of multiple regression analysis was used to test the relationship between the dependent and independent variables.

This functional relationship is represented as thus:

$$TMC = f(BDR, BMS \text{ and } IFR)$$

Mathematically, this functional relationship can be specified in linear form as thus:

$$TMC = \alpha_0 + \alpha_1 BDR + \alpha_2 BMS + \alpha_3 IFR + \mu$$

Where;

TMC = Total Market Capitalization, BDR = Deposit money banks 12-month Deposit Interest Rate, BMS = Broad money Supply, IFR = Inflation rate, μ = Error term, α_0 = Intercept, $\alpha_1, \alpha_2, \alpha_3$ = Coefficients to be estimated and their a priori expectations are as follows; $\alpha_1, \alpha_2, \alpha_3 > 0$.

2.2 Unit Root Test

The unit root test of stationarity is expressed as:

$$\Delta TMC_{it} = \beta_1 + \beta_2 t + \delta TMC_{2t-1} + \alpha_{ii=1} \sum_m \Delta TMC_{2t-1} + \varepsilon_t$$

Where: TMC_{2t-1} = Variables in the model, $\Delta TMC_{2t-1} = (TMC_{2t-1} - TMC_{2t-2})$, that is change. β_1, β_2 and α = parameters in the model, ε_t = is a pure white noise error term

2.3 Error Correction Model (ECM)

The error correction model is specified as:

$$\Delta TMC_t = \alpha_0 + \alpha_1 \Delta BDR_t + \alpha_2 \Delta BMS_t + \alpha_3 \Delta IFR_t + u_{t-1} + \varepsilon_t.$$

Where:

ΔTMC_t = change in individual variable in the model, u_{t-1} is the random innovations, ε_t = the white noise (random) error term.

The above equation is in line with the Granger Representation Theorem, which states that if two variables X and Y are cointegrated, the relationship between the two can be expressed as ECM (Gujarati, 2013).

Data Description

The annual time series data were obtained from Central Bank of Nigeria Statistical Bulletin of various issues. The data remain as described before.

4. Empirical Results

4.1 Unit Root Test Results

Table 1: Augmented Dickey Fuller and Phillips-Perron with Trend and Intercept

| Series | ADF test statistic @Level | ADFTest statistic@1 st Difference | PPtest statistic @Level | PPtest statistic @1 st Difference | 5% critical values | Remarks | Order of Integration |
|--------|---------------------------|--|-------------------------|--|--------------------|---------|----------------------|
| TMC | -1.726560 | -5.480501 | -1.550708 | -12.07712 | -3.568379 | (1) | Stationary |
| BDR | -3.118048 | -5.877186 | -3.103250 | -5.919022 | -3.568379 | (1) | Stationary |
| BMS | 1.184854 | -3.664295 | 1.184854 | -4.184854 | -3.568379 | (1) | Stationary |
| IFR | -3.433716 | -7.454586 | -3.173763 | -6.847273 | -3.518090 | (1) | Stationary |

Sources: researcher's compilation

The table 1 presents the Unit root test results showing the stationarity or non-stationarity of the variables. Stationary, means to remove or adjustment of trend in the time series (Iyoha, 2004 and Gujarati, 2013). Any model in a given study that did not test or adjust the trend (i.e. stationary) in the variables, the result of such model is spurious result and if used for prediction or forecasting, will be miss-leading.

The above unit root test shows that these variables; TMC, BDR, BMS and IFR are not stationary (i.e. they are not free from unit root syndrome), at level of the unit test both for ADF and PP applications respectively. On the other hand, the ADF and PP unit root test statistic results show that at first difference, TMC, BDR, BMS and IFR became stationary since their t-statistic value at first difference; were (i.e. -5.480501, -12.07712TMC,-5.877186, -5.919022BDR, -3.664295, -4.184854BMS, and -7.454586, -6.847273 IFR) for ADF, and PP-statistic value respectively, were greater than their 5% (-3.568379) critical value respectively. In fact all the variables were stationary at first difference. The implication is that these variables were stationary at first difference. However, it was found from both the ADF and PP results with trend and intercept indicated, that the time series are integrated of order 1(I) for all the variables. In other words, these variables were statistically significant in absolute terms at 5% level of significance. Thus, it means that the TMC, BDR, BMS and

IFR that exhibited unit root at levels test of ADF and PP have been removed after the ADF and PP test at the first difference.

Thus, the linear combination of series integrated of the same order is said to be co-integrated. In other words, the variables tested were all stationary at first difference order or at integration of order one [i.e. I(1)]. We then conclude that the difference in trend and intercept (unit root in these time series variables used) has been removed. In order words, we reject the null hypothesis and accept that the variables were all stationary at order one. The order of integration of the variables determines the next analytical procedure. We proceeded to carry out the co-integration test and other estimation models, in order to analysis the nature of short and long-run relationship among the variables.

4.2 Co-integration Test Result

Table 2: Cointegration Test Result

| Unrestricted Cointegration Rank Test (Trace) | | | | |
|--|-------------|--------------------|------------------------|---------|
| Hypothesized No. of CE(s) | Eigen value | Trace Statistic | 0.05 Critical Value | Prob.** |
| None * | 0.936408 | 251.7405 | 95.75366 | 0.0000 |
| At most 1 * | 0.903243 | 177.3483 | 69.81889 | 0.0000 |
| At most 2 * | 0.859144 | 114.2884 | 47.85613 | 0.0000 |
| At most 4 * | 0.588104 | 32.06322 | 15.49471 | 0.0001 |

Sources: Researcher's compilation

Under the Engle-Granger co-integration test, there are four co-integrating vectors. As we can see from the Eigen value statistics values, here all the absolute values of variables were found to be different from zero values. Again, (TMC, BDR, BMS and IFR) Rank statistic values were greater than the 5% level of critical value (i.e. $251.7405 > 95.75366$ TMC, $177.3483 > 69.81889$ BDR, $114.2884 > 47.85613$ BMS, $32.06322 > 15.49471$ IFR). We therefore conclude that there exists long-run relationship co-integration among four variables. In other words, the null hypothesis of no co-integration among the variables is rejected. The test result shows the existence of a long-run equilibrium relationship among the variables.

4.3 Error Correction Mechanism (ECM)

Table: 3 ECM Result

Included observations: 30 after adjustments

| Variable | Coefficient | Std. Error | t-statistic | Prob. |
|--------------------|-------------|-----------------------|-------------|----------|
| C | 4843.882 | 2090.362 | 2.317246 | 0.0286 |
| BDR | -296.3679 | 134.4514 | -2.204275 | 0.0366 |
| D(BMS) | 5.241470 | 0.831456 | 6.303967 | 0.0000 |
| D(IFR) | -16.74292 | 34.42824 | -0.486314 | 0.6308 |
| ECM(-1) | -0.851252 | 0.467636 | -1.820330 | 0.0807 |
| R-squared | 0.781838 | Mean dependent var | | 4421.707 |
| Adjusted R-squared | 0.746932 | S.D. dependent var | | 6246.377 |
| S.E. of regression | 3142.291 | Akaike info criterion | | 19.09430 |
| Sum squared resid | 2.47E+08 | Schwarz criterion | | 19.32784 |
| Log likelihood | -281.4146 | Hannan-Quinn criter. | | 19.16901 |
| F-statistic | 22.39848 | Durbin-Watson stat | | 1.717443 |
| Prob(F-statistic) | 0.000000 | | | |

$R^2 = 0.781838$, F-Statistics = 22.39848 and Durbin-Watson Statistics = 1.717443

t- Critical value at 5% = $\alpha/2t_{0.025} = 2.056$ with reference to n-k, where n is the number of observation = 30 and k is the number of parameters = 4: 30 - 4 = 26

F- Critical = k-1 and n-k value. Where k = 4-1 = 3 and n-k = 30-4 = 26.

$F_{0.05}(4, 26) = 2.98$.

From result in table 3 above the ECM was consistent with the assumed theoretical negative coefficient value of -0.851252 with t-statistic value of -1.820330 approximate to 2% of its t-statistic which is too short for it to adjust or correct. This implies that following short-run disequilibrium, 2% approximately of the adjustment to the long-run takes place within two years. The above equation estimated BDR, BMS and IFR as functions of TMC. The coefficient of the constant term shows positive; this implies that at zero performance of the independent variables used, TMC will stand at 4843.882 percent.

The coefficient of Board Money Supply (BMS) has a positive linear relationship with Total Market Capitalization (TMC) of the Nigerian stock market. It means that if the Board Money Supply (BMS) in Nigeria increases, and then, the inflow of Total Market Capitalization in Nigerian stock market will increase by 5.241470 percent respectively. The result is in line with initial expectation because theoretically, the sign of the coefficients are expected to be positive (i.e. directional relationship with that of aggregate Nigeria Market Capitalization). The implication is that an economy with a good positive growth of Board Money Supply

(BMS) and other globalization affair in her stock market, real sector output, technology and other services will experience increase in her Total Market Capitalization as trade transactions become favourable to the domestic economy. Thus, this variable (Board Money Supply), if viewed from the statistical criteria's standpoint, we observed that Board Money Supply was statistical significant at five (5%) percent level of significance. Thus, the variables were in conformity to the economic theory.

The coefficients of bank deposit rate (BDR) and inflation rate (IFR) show that there exists a negative relationship with the Total Market Capitalization (TMC). This implies that a percent change (decrease) in inflation rate (IFR) would bring about change (increase) in the Total Market Capitalization, while a positive change on BDR will result in a decrease in Total Market Capitalization inflow by -296.3679 percent. Base on this, inflation rate (IFR) is in line with the a-prior assumption while BDR is not.

The implication is that negative (increase) changes in inflation rate (IFR) will boost the value of money in the economy and encourage the investors, investment and business sector for expansion with the presence of increase in the value of stock. In return, aggregate economic activities of Nigeria will increase as well as Total Market Capitalization inflow. Meanwhile viewing these variables (IFR and BDR) from the statistical criteria, we found that inflation rate (IFR) was not statistical significant at five (5%) percent level of significance. That notwithstanding, the result is theoretically in conformity to the economic theory.

However, the regression results reveal that about 78% of the systematic variation in the dependent variables is explained by the three independent variables, while the variables not capture in the model accounted about 22%, which was due to the error term. Based on the R^2 , we conclude that the model had a good fit and could be used for forecasting.

The F-statistic value is 22.39848 significant at the 5% level of significance. This shows that there is a linear relationship between the Total Market Capitalization and the three independent variables. From the results we found that there is no presence of autocorrelation since the Durbin-Watson statistic stood at 1.717443 is approximately equal to 2.

Conclusion, Policy Implications and Recommendations

The results revealed that monetary policy variables (BDR and BMS) have short-run and long-run significant impact on the stock market except inflation rate (IFR), which impact is insignificant in the long-run but very significant in the short-run. The result of the ECM shows that the speed of adjustment of the error correction term has the right sign indicating that the stock market returns reacts speedily to the impact of the monetary policy shocks. Given the short-run disequilibrium, the stock market has a speedy adjustment of approximately two per cent to the long-run monetary shock in two years. The paper therefore, concludes that the stock market returns react speedily to monetary policy variables in Nigeria

implying that monetary policy is very effective in stabilizing the stock market through the monetary policy instruments.

This study reveals that the overall long-run behaviour of stock market returns in Nigeria is significantly influenced by monetary policy instrument in Nigeria and that the stock market returns adjusts (reacts) speedily to the long-run impact against any short-run disequilibrium shock. We also discovered that bank 12-month deposit interest rate has a strong significant long-run negative impact on stock market returns. This implies that any increase in the deposit interest rate attract more savings and discourages the flow of capital to the stock market, leading investors to demand for money balances rather than investing in capital stock, thereby slowing down economic activities.

We also discovered that broad money supply is rightly signed with stock market capitalization both in the long-run and short-run and has a very high positive impact on the impact on stock market returns. The finding is in consonance with Ordio and Nwaogwugwu, 2016. The implication is that expansionary monetary policy is required to stimulate and stabilize the stock market in Nigeria. The restrictive monetary policy currently pursued by the monetary authorities as economic tightening measure to stabilize the economy against the current inflationary pressure and economic recession is not really helping the economy as evidenced in the continuous poor performance of the stock market. Policy makers should see the need to stimulate the economy via realistic expansionary policy measures. Government expenditure should be increased through effective budget implementation. The impact of inflation rate as revealed in this study is expectedly negative on the stock market but insignificant. That suggests that the only way out of the current economic recession facing the country is for the authorities and policy makers to adopt and effectively implement both expansionary monetary and fiscal policy measures. The monetary authorities should also review the exchange policy to ensure effective mobilization of surplus funds from abroad to be injected into the stock market. In summary, this study recommends expansionary monetary policy measures as panacea for revamping the economy from the recession and improving stock market performance in Nigeria.

References

- Abaenewe, Z. C. and Ndugbu, M. O. (2013). Analysis of the effect of monetary policy development on equity prices in Nigeria. *West African Journal of Industrial and Academic Research*, 5(1), pp. 140-155.
- Agie, H. A. and Nenbee, S. G. (2010). An econometric analysis of monetary policy and stock market prices in Nigeria. *International Journal of Economic Development Research and Investment*, Vol. 1, No. 1, April, pp. 175-192.
- Al-Faki, M. (2005). The Nigerian capital market and socio-economic development. *Securities and Exchange Commission Annual Report and Accounts*, pp. 56-66.
- Central Bank of Nigeria (1999). *Monetary policy brief*.

- Ekene, O. C. (2016). Impact of monetary policy on stock returns in Nigeria. *Middle-East Journal of Scientific Research*, 24(5), pp. 1778-1789.
- Fama, E. and Schwert, G. (1977). Asset returns and inflation. *Journal of Financial economics*, Vol. 5, pp. 115-146.
- Friedman, M. (1956). The quantity theory of money – A restatement. Reprinted from studies in the quantity theory of money, University of Chicago Press.
- Ghani, M. and Chauhary, G. M. (2016). Stock market response to policy announcement: Evidence from banking sector of Pakistan. *Developing Country Studies Paper*, Vol. 6, No. 1 (Online)
- Gbosi, A. N. (2002). Financial sector instability and the challenges to Nigeria's monetary authorities. Lagos: African Heritage Publishers.
- Kim, K. (2003). Dollar exchange rate and stock price: Evidence from multivariate cointegration and error correction model. *Review of Financial Economics*, 12, pp. 301-313.
- MacKinlay, A. C. (1997). Events studies in economics and finance. *Journal of Economic Literature*, Vol. 1(35), pp. 1625-1631.
- Maku, E. O. and Atanda, A. A. (2009). Does macroeconomic indicators exert shock on the Nigerian capital market? Paper no. 17917, Munish Publication, University of Denmark.
- Nwankwo, G. O. (1991). The money and capital market in Nigeria. Ibadan, in Agie, H. A. and Nenbee, S. G. (2010). An econometric analysis of monetary policy and stock market prices in Nigeria. *International Journal of Economic Development Research and Investment*, Vol. 1, No. 1, April, pp. 175-192.
- Okpara, G. C. (2010). Monetary policy and stock market returns: Evidence from Nigeria. *Journal of Economics*, 1(1), pp. 13-21.
- Osisanwo, B. G. and Atanda, A. A. (2012). Determinants of stock market returns in Nigeria: A time series analysis. *African Journal of Scientific Research*, 9(1).
- Osuagwu, E. S. (2009). The effect of monetary policy on stock market performance in Nigeria. *Nigerian Journal of Securities and Finance*, Vol. 14 (2), September.
- Ordio, E. S. and Nwaogwugwu, I. C. (2016). Efficiency of the Nigerian stock market with respect to pure contemporary monetary policy instruments: A dynamic weighted least squares approach. *Journal of Applied Finance and Banking*, Vol. 6, No. 4, pp. 83-105 (Online).
- Patelis, A. (1997). Stock return predictability and the role of monetary policy. *Journal of Finance*, 52, pp. 1951-1972.
- Uchendu (1996). The transmission of monetary policy in Nigeria. *Central Bank of Nigeria: Economic and Financial Review*, 34 (2), 606-625.