Effect of Monetary Policy on Nigerian Stock Market Performance

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ABSTRACT
The study investigated the effect of monetary policies on stock market performance in Nigeria. The study covered a period of 28 years (1986 – 2013). Data were generated from the Central Bank of Nigeria Statistical Bulletin, 2013 edition. The ex post facto research design was adopted. The method of data analyses used are b the Johansen co-integration, OLS and granger causality tests. All Share Index was used as the indicator of stock market performance (ASI) while the explanatory variables included Monetary Policy Rate (MPR), Treasury bill rate (TBR), Lending interest rate (INT), Liquidity ratio (LR) and deposit rate (DR). The co-integration result indicates that there is long run relationship between monetary policy and stock market performance in Nigeria. The OLS regression result showed that monetary policy significantly explains 53% of changes stock market performances in Nigeria. However, Monetary Policy Rate (MPR) has insignificant positive effect on All Share Index (ASI) while Lending Rate (INT) has significant positive effect on All Share Index (ASI). Furthermore, Treasury Bill Rate (TBR) and Liquidity Ratio (LR) have insignificant negative effect on All Share Index (ASI) in Nigeria; and Deposit Rate (DR) has a significant negative effect on All Share Index (ASI) in Nigeria. The granger causality analyses showed that All Share Index (ASI) has no causal relationship with monetary policy rate (MPR), Treasury bill rate (TBR), and liquidity ratio (LR) in Nigeria. However, All Share Index (ASI) has causal relationship with lending and deposit rates in Nigeria. This indicate that monetary policy has the potential (53%) to influence the stock market, but the causality analyses showed that monetary policy cannot influence stock market performance but rather stock market performance has influenced the direction of monetary policy in Nigeria through lending and deposit rates. Among others, the study recommended that policy makers in Nigeria must be mindful of the unidirectional causality from stock market to the monetary policy variables in formulating monetary policies. This will enable them to sufficiently and timely adjust Nigerian stock market to economic conditions in the country.

Keywords: Monetary policy, Treasury bill rate, All share index, stock market performance, Nigeria.

INTRODUCTION

The stock market is supposed to play an important role in the economy in the sense that it mobilizes domestic resources and channels them to productive investments. The stock market is considered to be a concurrent part of economies since it allows redistribution of financial resources among separate economic entities (Pilinkus, 2010).

The stock market performance is supposed to illustrate the state of the country's economy: if stock prices start to fall, economic depression is likely to take place and, conversely, rising stock prices show possible economic growth. Stock market indices are the statistical indicators which show the state of the stock market and its dynamic tendencies. Considering the state of the world financial system which is getting more and more complicated, it is important to find out the extent to which monetary policies can influence the direction of stock market performances in Nigeria.

Monetary policy is a measure designed to influence the availability, volume and direction of money and credits to achieve the desired economic objectives. It covers gamut of measures or combinations of packages intended to influence or regulate the volume, prices as well as direction of money in the economy per unit of

time; and specifically, it permeates all the efforts by the monetary authorities to control the money supply and credits conditions for the purpose of achieving diverse macroeconomic objectives (Ajie & Nenbee, 2010).

Ologunde Elumilade and Asaolu (2006) posit that interest rate along with monetary aggregates form targets of monetary policy in Nigeria. Using the direct monetary policy measures, the monetary authorities directly influence items of the balance sheet of commercial banks. In such a system interest rates are set and credits are allocated by monetary authorities in accordance with the government's 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 credits (Okpara, 2010). On the other hand, there is a causal link 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 (Ncube, 2009).

Empirical evidences indicate that investors generally believe that monetary policy and macroeconomic events have a large influence on the volatility of the stock price. Christopher, Minsoo, HuaHwa and Jun (2006) opined that macroeconomic variables can influence inventors' investment decision and motivate many researchers to investigate the relationships between share returns and macroeconomic variable. Favourable macroeconomic policies are expected to impact positively on market and vice versa; which might be instantaneous, lagged or even anticipatory. Central authorities set macroeconomic performance targets every fiscal year and these targets are usually tied to two principal macro policy frameworks (fiscal and monetary).

The regulatory agencies in Nigeria have instituted numerous policies to stabilize the macroeconomic variables which are expected to have impact on the Nigerian capital market. In Nigeria, the Central Bank of Nigeria (CBN) Act of 1958 mandates the Bank to promote and maintain monetary stability and a sound financial system in Nigeria. The CBN generally implements its monetary policy programmes using the market-based and rule-based techniques (Chuku, 2009). When implementing monetary policy using the rule-based technique, the CBN uses direct instruments like selective credit controls, direct regulation of interest rates and moral suasion. While indirect instruments like the Open Market Operation (OMO), discount rate and the reserve requirements are used when implementing monetary policy programmes using the market-based approach.

Since its inception, the CBN has implemented monetary policy using various combinations of these two techniques with more or less emphasis on one. Depending on the emphasis placed on either of the techniques, the evolution of monetary policy in Nigeria can be classified into two phases: (I) the era of direct controls (1959-1986) and (II) the era of market-based controls (1986-date). This study is most concerned with the impact of the market-based monetary instruments of the CBN on stock market performance.

Using market based technique, the CBN indirectly influences economic parameters through its Open Market Operations (OMO). These operations are conducted wholly on Nigerian Treasury Bills (TBs) and Repurchase Agreements (REPOs), and are being complimented with the use of reserve requirements, the Cash Reserve Ratio (CRR) and the Liquidity Ratio (LR). These set of instruments are used to influence the quantity-based nominal anchor (monetary aggregates) used for monetary programming.

On the other hand, the Minimum Rediscount Rate (MRR) is being used as the price-based nominal anchor to influence the direction of the cost of funds in the economy. Changes in this rate give indication about the monetary disposition of the CBN, whether it is pursuing a concessionary or expansionary monetary policy. This rate has generally been kept within the range of 26 and 8 percent since 1986 (http://naijaedu.wordpress.com /2012/07/30/ monetary-policy-in-nigeria-2/). As a companion to the use of the MRR, the CBN latter introduced the Monetary Policy Rate (MPR) in 2006 which establishes an interest rate corridor of plus or minus two percentage points of the prevailing MPR. Since 2007, this rate has been held within the band of 10.25 and 6 percent, until last quarter of 2010 when it was increased to 10.30 percent, 12% in 2013. This changes in the MPR should aim to control all economic activities in Nigeria.

Thus this study investigated the effect price-based nominal anchor of the monetary policy instruments of the CBN on stock market performance indicators.

The stock market is supposed to play an important role in the economy in the sense that it mobilizes domestic resources and channels them to productive investments. However, to perform this role it must have significant relationship with the economy. Thus, efficient stock markets are hence essential indicator of an expanding economy (Akingunola, Adekunle, & Ojodu, 2012). Despite the theoretical assertion that macroeconomic variable are expected to affect returns on equities, the observed pattern of the influence of macroeconomic variables (in signs and magnitude) on share returns varies from one study to another in different capital markets (Maku & Atanda, 2009).

Also, the few empirical evidences in by Maku and Atanda (2009), Osisanwo and Atanda (2012), Asaolu and Ogunmakinwa (2011), and Adaramola (2011) Nigeria have produced conflicting results. Maku and Atanda (2009) posit that the Nigerian Stock Exchange (NSE) all share index is more responsive to changes in macroeconomic variables herein referred to as external shock; and is supported by Osisanwo and Atanda (2012); but Asaolu and Ogunmakinwa (2011) maintain that a weak relationship exists between Average Share Price (ASP) and macroeconomic variables in Nigeria. However, the disagreement seem to stem from dependent variables used. Both works have used the macro approach in their findings, Adaramola (2011) who used microeconomic approach asserted that macro-economic variables have varying significant impact on stock prices of individual firms in Nigeria.

The methodological gaps in the previous works in the literature stems from variables of monetary policies included in the studies. Previous studies in Nigeria have included inflation at rate and level (CPI), money supply, exchange rate, per capita income or real GDP, interest rate or Treasury bill rate while Adaramola (2011) include the oil in his own study. These indicate that previous studies use key monetary policy outcomes of the CBN as the measure of monetary policy. Of all these studies, none has used only the market-based monetary instruments (the minimum rediscount rate/monetary policy rate, Treasury bill rate, cash reserve ratio, liquidity ratio, lending and deposit rates). This study then intend to understand the effect of these price based monetary policy instruments capable of influencing the direction of the cost of funds in the economy. Thus this study is an improvement in existing extant literature in Nigeria which adopted different proxies for stock market and produced conflicting findings.

THEORETICAL FRAMEWORK

The theoretical foundation of this work is based on McKinnon-Shaw (1973) theories on finance and development which posit that macroeconomic and fiscal environment is one of the building blocks which determine the success or otherwise of securities market (Paddy, 1992). McKinnon (1973) advances an argument in favour of a complementary relationship between financial and physical assets. This presupposes that macroeconomic environment determine the performance of securities market. This follows from the notion that a conducive macroeconomic environment promotes the profitability of business which propels them to a stage where they can access securities for sustained growth.

On the basis of the above postulations, we note that monetary policy can influence the activities of other sectors of the economy. Thus, the monetary authority can influence other macroeconomic indicators by altering some monetary policy instruments by the Minimum Rediscount Rate (currently known as the Monetary Policy Rate). Generally, the barometers for measuring the performance of the economy include among others real GDP growth rate, rate of inflation, the exchange rate, fiscal position and the debt position. By changing the Monetary Policy Rate, these monetary economic indicators can be manipulated. Of these, the exchange rate, interest rate and the rate of inflation can be singled out to affect stock market activity as they impinge directly on the state of corporate activity in the country.

Interest and exchange rates are financial prices for credit and foreign currencies, respectively. They both affect resource allocation, production levels, prices and profitability. Ultimately, fluctuations in these reflect in share prices – an indicator of market performance. For instance, lowering of interest rate on demand and savings deposits will improve returns to investing on the exchange relative to investing in deposit money banks (DMBs) holding factors such as risk, transaction costs constant. This will therefore increase the demand and share price of affected equities on the exchange thereby affecting its performance. The

phenomenon of dollarization (investing in dollars) also becomes pervasive in an atmosphere of persistent exchange rate depreciation. This diverts resources that could be invested on the exchange into non-functioning assets (such as dollars). Real exchange rate depreciation could also result in capital flight thereby depriving the domestic economy of its investable financial resources.

Also, Fiscal deficits lead to government interference in the financial markets with more attractive instruments that will crowd-out stocks (Pilbeam, 1992). An increase in government borrowing through the issuance of treasury bills affects the stock market through investors' re-adjustment of portfolio balances. Low Treasury bill rates are expected to stimulate transfers of domestic funds from the money market to the stock market (Pilbeam, 1992). High and persistent fiscal deficits accommodated by the issuance of high yielding but less-risky government instruments like the Treasury bill adversely affect the demand for securities being issued by private firms for long-term capital.

High-treasury bill rates tend to encourage investors to purchase more government instruments. Treasury bills thus tend to compete with stocks and bonds for the resources of investors. This tends to reduce the demand for stock market instruments and cause an eventual reduction in stock prices. The expected relationship between stock prices and Treasury bill rates is thus negative. The impact of Treasury bill rate also affects stock market activity much in the same way as interest rate. Agenor (2000) captures these views by stating that interest rate, high inflation, large fiscal deficits and real exchange rate over-valuation are often key symptoms of macroeconomic instability which constraints private sector investment and savings and thereby results in inefficient allocation of resources on the exchange thereby affecting its performance. As core investors in stock market considers prevailing economic realities, thee opportunity cost of investing in the stock market can be influence by monetary policy.

REVIEW OF EMPIRICAL LITERATURE

The relationship between monetary policy and stock market performance has been a topic of intense research by both monetary and financial economists in Nigeria from the period of deregulated economy (Structural Adjustment era of 1986) till date. While monetary economists are mostly concerned with whether monetary policy has any bearing on stock market performance, financial economists are concerned with whether equity is a good hedge against inflation (Galebotswe & Tlhalefang, 2012). In this section, the monetary policy stances used to form the objectives of this study has not been used empirically to measure the impact of monetary policy on stock market performance.

Amadi, Oneyema and Odubo (2002) employed multiple regression to estimate the functional relationship between money supply, inflation, interest rate, exchange rate and stock prices. Their study revealed that the relationship between stock prices and the macroeconomic variables are consistent with theoretical postulation and empirical findings in some countries. Though, they found that the relationship between stock prices and inflation does not agree with some other works done outside Nigeria.

Nwokoma (2002), attempts to establish a long-run relationship between the stock market and some of macroeconomic indicators. His result shows that only industrial production and level of interest rates, as represented by the 3-month commercial bank deposit rate have a long-run relationship with the stock market. He also found that the Nigeria market responds more to its past prices than changes in the macroeconomic variables in the short run.

Ologunde, Elumilade and Asaolu (2006), examined the relationships between stock market capitalization rate and interest rate. They found that prevailing interest rate exerts positive influence on stock market capitalization. They also found that government development stock rate exerts negative influence on stock market capitalization rate and prevailing interest rate exerts negative influence on government development stock rate. Their findings seem to take interest rate as the lending rate. If deposit rate increases, theoretically, investors will switch their capital from share market to banks. This will exert a negative impact on stock prices. Therefore this work used the deposit rate to express interest rates in Nigeria.

With the help of vector error correction model (VECM), Aziza (2011) examined the effects of monetary policy on stock market performance and verified whether monetary policies in various countries affect their

own stock market performance and development in in Australia and New Zealand representing Australia; India and Indonesia representing Asia; Nigeria and South Africa representing Africa; Chile and Trinidad and Tobago representing South America and Jamaica and the United States representing North America. The study used data from 1988 to 2008. The study found out that monetary policy variables such as money and quasi money growth and interest rates proxied by lending rate as well as intermediate target of monetary policy inflation rate measured at consumer price index have long run relationship with stock market performance measured by growth of market capitalization. This was observed using unit root tests to test for the stationarity of the data as well as cointegration analysis to test for long run equilibrium relationship between the variables. Furthermore, the study employed vector error correction model (VECM) and generated the impulse-response function and graph for each country as well as their forecast error variance decomposition. Thought, result show that monetary policy has long run relationship with stock markets; this relationship is different in various countries thus rendering the notion of 'one rule fits all' invalid.

Chude and Chude (2013) investigated the effect of broad money supply on the stock market returns in Nigeria. Stationarity test, co-integration test and error correction model were used as a model. It was discovered that there is long run relationship between broad money supply and stock market returns in Nigeria and that broad money supply has been relatively high over the years and has significant positive impact on the stock market returns in Nigeria.

Eze (2011) investigates the effect of monetary policy on stock market performance in Nigeria using ordinary least square; co-integration and error correction model. It was discovered that stock market performance is strongly determined by broad money supply, exchange rates and consumer price index in the short and long-run.

Maku and Atanda (2010) examined the determinants of stock market performance in Nigeria using Augmented Dickey-Fuller unit root test, Augmented Engle Granger Co-integration test and Error Correction Model. The empirical analysis showed that the NSE all-share index is more responsive to changes in exchange rate, inflation rate, money supply, and real output. While, the entire incorporated macroeconomic variables were found to have simultaneous and significant impact on the Nigerian capital market performance in the long-run.

Asaolu and Ogunmuyiwa (2011) investigated the impact of macroeconomic variables on Average Share Price (ASP) and goes further to determine whether changes in macroeconomic variables explain movements in stock prices in Nigeria. Various econometric analysis such as Augmented Dickey Fuller (ADF) test, Granger Causality test, Co-integration and Error Correction Method (ECM) were employed on time series data from 1986-2007 and the results revealed that a weak relationship exists between ASP and macroeconomic variables in Nigeria. The findings further point that ASP is not a leading indicator of macroeconomic performance in Nigeria, albeit, a long run relationship was found between ASP and macroeconomic variables for the period under review.

Omotor (2011) noted that the linkage between stock market prices and inflation has been subjected to extensive research in the past decades and has aroused the interests of academics, researchers, practitioners and policy makers globally, particularly since the 1990s. Omotor (2011) thus investigated this relationship using monthly and quarterly data of Nigeria for the period 1985 to 2008, and his findings posited that stock market returns may provide an effective hedge against inflation in Nigeria.

Adaramola (2011) investigated the impact of macroeconomic indicators on stock prices in Nigeria. This work has unique interest on the individual firm's level. Secondary data on stock prices of selected firms and six macroeconomic variables between 1985:1 and 2009:4 were used for the analysis. The macroeconomic indicators used in the research work are: money supply, interest rate, exchange rate, inflation rate, oil price and gross domestic product. The panel model was used to examine the impact of macroeconomic variables on stock prices of the selected firms in Nigeria. The model was considered appropriate for its ability to combine both time series and cross-sectional data. The empirical findings of the study revealed that macro-economic variables have varying significant impact on stock prices of individual firms in Nigeria. Apart from inflation rate and money supply, all the other macroeconomic variables have significant impacts on

stock prices in Nigeria. The study therefore concluded with empirical evidences that trends in macroeconomic variables can be used to predict movement of stock prices to a great extent in Nigeria.

Osisanwo and Atanda (2012) analysed the determinants of stock market returns in Nigeria using the OLS method based on the sourced time series variables from the Central Bank of Nigeria (CBN) between 1984 and 2010. The findings indicated that interest rate, previous stock return levels, money supply and exchange rate are the main determinants of stock returns in Nigeria. Therefore, this study proffer the need to adopt a mixed policy approach between capital and monetary market instruments in order to enhance the returns in the Nigerian Stock Exchange.

Osamwonyi and Evbayiro-Osagie (2012) attempted to determine the relationship between macroeconomic variables and the Nigerian capital market index. The study considered the yearly data of several macroeconomic variables of interest rates, inflation rates, exchange rates, fiscal deficit, GDP and money supply from 1975 to 2005; and tries to reveal the relative influence of these variables on the 'All Share Index' of the Nigerian capital market. In pursuance of this, the Vector Error Correction Model (VECM) was used to study the short-run dynamics as well as long-run relationship between the stock market index and the six selected macroeconomic variables from the Nigerian economy. The major finding is that macroeconomic variables influence stock market index in Nigeria.

Ogbulu and Uruakpa (2011) investigated the link between monetary policy and stock prices in the Nigerian capital market as well as the direction of causality between monetary policy variables and asset prices using quarterly data from second quarter of 1986 to fourth quarter of 2011. The empirical results show that there is one co-integrating long run dynamic relationship between stock prices and the set of broad money supply, interest rate, foreign exchange rates and inflation. The parsimonious ECM estimates indicate that broad money supply has a positive and significant impact on stock prices while interest rate depicts a weak relationship with stock prices. In addition, the study reported uni-directional causality from stock prices to broad money supply and also from foreign exchange rate to stock prices. The impulse response and variance decomposition analyses reveal that own shocks from stock prices are the dominant source of variations in the forecast error decomposition.

Okpara (2010) analysed the effect of monetary policy on the Nigerian stock market returns using the Two Stage Least Squared Method on a set of simultaneous equations which were found to be over identified. The reduced form equation was tested for stationarity using the Augmented Dickey Fuller Unit Root Test and Cointegration Test. A Vector Error Correction Model and the Forecast Error Decomposition Analysis were also used to determine the long and short run dynamic properties of the equations. The major findings are that, monetary policy is a significant determinant of long-run stock market returns in Nigeria. Specifically, high Treasury bill rate reduces stock market returns and thus, shows an evidence of monetary policy efforts to slow down the economy. While current and one period lag interest rate exert a positive and significant influence on the stock market returns. The lagged error correction term is negatively signed, suggesting that about 32 percent of deviation from the long-run equilibrium between stock returns and the Treasury bill rate cum interest rate is corrected periodically. Also the salient feature of the variance decomposition results is that the predominant sources of returns fluctuations are due largely to stock returns shocks and interest rate shocks. Thus the innovations of rate of interest can be a better predictor of stock market returns in Nigeria.

RESEARCH METHODS
Research Design and Sources of data
This study is based on ex-post facto research design because the data used for this study have already been documented by a highly research based institution like the CBN. It is a time series data sets that included the annual frequencies of All Share Index (ASI), Monetary Policy Rate (MPR), Treasury bill rate (TBR), Lending interest rate (INT), Liquidity ratio (LR) and deposit rate (DR) from 1986 to 2013. The data was sourced from the Central Bank of Nigeria Statistical Bulletin, 2013 edition.

Model Specification
Theoretical framework has noted that interest rate is the most influential monetary policy tool. An important issue that arises when measuring the effect of monetary policy on capital markets is the correct *identification*

of monetary policy. Many papers in literature (e.g., Maku & Atanda, 2009) and Lamont, Polk & Saa-Requejo 2001), use changes in market interest rates or official rates as their measures of monetary policy. The present study is a modification of both studies wherein other price based monetary policy anchors are added to ascertain the effect of monetary policy directives on stock market movement. The function of the relationship can be shown as:

All Share Index (ASI) = f (monetary policy variables)   (1)

This can be rewritten in equation form as:

$LnASI = \beta_0 + \beta_1 MPR + \beta_2 TBR + \beta_3 INT + \beta_4 LR + \beta_5 DR + \mu$ (2)

Where: ASI = All Share Index, MPR = Monetary Policy Rate (formerly Minimum Rediscount Rate),

TBR = Treasury bill rate,

INT = Lending interest rate,

LR = Liquidity ratio,

DR = deposit rate and

Ln = natural log of the variable. β_0 is the intercept, while $\beta_1, \beta_2, \beta_3, \beta_4$ and β_5 are the slope (coefficients) of the explanatory variables. μ is the stochastic or error term assumed to capture the influence of other exogenous factors that are capable of influencing dependent variable in each model

Method of Data Analysis

The estimated regression results are based on the OLS technique and supported with the Johansen co-integration and the granger causality tests. The procedure involved the investigation and determination of the time series properties of all variables included in the regression model.

RESULT AND INTERPRETATION

Table 1: Summary of Statistics of Variables Applied in the Regression Analysis

	ASI	MPR	TBR	INT	LR	DR
Mean	8.52	13.74	12.72	19.05	45.70	12.82
Median	8.90	13.50	12.37	18.29	45.75	12.72
Maximum	10.93	26.00	26.90	29.80	64.10	23.99
Minimum	4.99	6.13	3.72	10.50	29.10	4.70
Std. Dev.	1.87	4.06	4.94	3.97	9.22	5.29
Skewness	-0.59	0.72	0.67	0.75	0.10	0.54
Kurtosis	2.01	4.41	3.91	4.09	2.63	2.51
Jarque-Bera	2.78	4.78	3.08	4.03	0.20	1.67
Probability	0.24	0.09	0.21	0.13	0.90	0.43
Observations	28	28	28	28	28	28

Source: Researcher's Estimation using Eviews version 5.1

The characteristics of the data series used in the regression analysis are presented in Table 1. The table reports the summary of statistics used in the analysis. It provides information about the means and standard deviations of the main variables. The mean ASI stood at 8.52, while those of MPR, TBR, INT, LR and DR are 13.74, 12.72, 19.05, 45.70 and 12.82 respectively. All of these variables recorded values of standard deviation that is lower than the values of their respective means. This indicates that these variables recorded normal distribution within the period under study. The probability values of the Jarque-Bera Statistics as presented in the table show that ASI, MPR, TBR, INT, LR and DR are normally distributed. All the employed variables have 28 data point observations. Thus, the data set is a long term data.

Table 2: Stationarity Test for Variables Monetary Policy and Stock Market Performance

Variables		ADF test		Philips-Perron test		
		At Level 1(0)	First Difference 1(1)	At Level 1(0)	First Difference 1(1)	Order of Integration
LnASI		-1.7772	-3.5734**	-2.0352	-4.0957*	1(1)
MPR		-2.1574	-5.4261*	-2.8590	-7.1962*	1(1)
TBR		-2.2156	-4.7608*	-2.6605***	-6.2628*	1(1)
INT		-2.6647***	-5.1484*	-4.4661*	-9.2329*	1(1)
LR		-2.3623	-3.7171**	-2.4657	-4.7600*	1(1)
DR		-1.3121	-4.4355*	-1.8165	-6.1346*	1(1)
Critical values	1%	-3.7076	-3.7204	-3.6959	-3.7076	
	5%	-2.9798	-2.9850	-2.9750	-2.9798	
	10%	-2.6290	-2.6318	-2.6265	-2.6290	

*1% level of significance, **5% level of significance, ***10% level of significance.
Source: Researcher's Estimation using Eviews version 5.1

The results of the unit root tests are done and presented in Table 2. The variables employed in the analysis are tested for stationarity using two unit root tests, namely, Augmented Dickey-Fuller test and Phillips-Perron test, to determine whether they are stationary or non-stationary series. The two tests are employed to reinforce one another, to ensure their robustness and boost confidence in their reliability. The tested hypotheses for the unit root test is the null hypothesis the "there is presence of unit root" tested at 5% level of significance. The decision rule is that the critical value should be larger than the test statistical value for unit root to exist. The results for the test of stationarity of the variables are shown on Table 2for ADF and P-P tests respectively. ADF and P-P were jointly used so that one will confirm the other.

From the results of ADF on Table 2 above, all the variables do not have unit roots (that is, are stationary) at 5% in their first differences. Thus, variables are said to be integrated in the order of 1(1) using the ADF test. Again, the P-P test results shows that INT is stationary at level (that is integrated in the order of 1(0)). Moreover, the other variables (ASI, MPR, TBR, LR and DR) are stationary in their first differences.

From the analyses, both ADF and P-P confirm that the variables (ASI, MPR, TBR, INT, LR and DR) are stationary at least, at 5% level of significance in their first differences. Since all the variables for the study is stationary, we, therefore, proceed to test for actual number of cointegration equations that exist among the series in the models as stipulated in line with the objective of the study.

Table 3 Test of Co-integration among Variables Monetary Policy and Stock Market Performance

	Likelihood	5 Percent	1 Percent	Hypothesized		
Eigenvalue	Ratio	Critical Value	Critical Value	No. of CE(s)		
0.749467	120.4557	94.15	103.18	None **		
0.644554	84.46748	68.52	76.07	At most 1 **		
0.574406	57.57358	47.21	54.46	At most 2 **		

0.514186	35.36255	29.68	35.65	At most 3 *
0.317821	16.59238	15.41	20.04	At most 4 *
0.225630	6.648347	3.76	6.65	At most 5 *
*(**) denotes rejection of the hypothesis at 5%(1%) significance level				
L.R. test indicates 6 cointegrating equation(s) at 5% significance level				

Source: Researcher's Estimation using Eviews version 5.1

Co-integration test is carried out to ascertain the existence of long run relationship among the variables employed for the model specified. Specifically, the co-integration test is carried out based on Unrestricted Co-integration Rank Test Likelihood Ratio and Maximum Eigenvalue.

The model is specified to examine the effect of monetary policy on stock market performance in Nigeria and tested for the null hypothesis of no co-integration assuming linear deterministic trend. The model comprised ASI, MPR, TBR, INT, LR and DR. Table 4.3 illustrates the outcome of the co-integration test for the model. From the results, Likelihood Ratios for each is greater than the critical values. The Likelihood Ratio indicates that there are six co-integrating equations among the variables in the model. This implies that there is long run relationship between monetary policy and stock market performance in Nigeria

Table 4: OLS Regression for Analyses of the Contributions and Significance of the variables of Stock Market Performance on Monetary Policy

Dependent Variable: ASI			
Sample: 1986 2013			
Included observations: 28			
Variable	Coefficient	Std. Error	t-Statistic
MPR	0.3255	0.2681	1.2140
TBR	-0.2217	0.1820	-1.2179
INT	0.2144	0.1007	2.1293**
LR	-0.0068	0.0427	-0.1594
DR	-0.3784	0.1194	-3.1702*
C	7.9503	2.0678	3.8447*
R-squared	0.529114		
Adjusted R-squared	0.422094		
F-statistic	4.944086*		
Durbin-Watson stat	1.716422		

Note: * denotes significant at 1%, ** denotes significant at 5%; *** denote significant at 10%
Source: Researcher's Estimation using Eviews version 5.1

The results of the estimated model based on OLS technique was analysed to show the contributions of each of the variables of monetary policy (ASI, MPR, TBR, INT, LR and DR) on Stock market performance (ASI) in Nigeria. The coefficient of determination (R^2) is 0.5291 which indicate that about 52.9% of changes in stock market movement are explained by monetary policy indicators (MPR, TBR, INT, LR and DR). The F-statistics explains the overall significance of the variable of monetary policy (MPR, TBR, INT, LR and DR) on stock market movement (ASI). The F-value is 4.944086 and significant at 5% level. Since the F-probability is less than 5% level of significance, we conclude that monetary policy has overall significant effect on stock market performance in Nigeria. This implies that monetary policy could have 52.9% effect

on stock market performances in Nigeria. As the coefficient of Durbin-Watson (1.716422), it shows that the model is free of autocorrelation.

The coefficient of MPR is 0.3255 with a t-value of 1.2140 (p > 0.05). This indicates that monetary policy rate (MPR) has positive relationship with stock market performance in Nigeria. The result shows that one percentage increase in monetary policy rate could lead to 32.55% increase in stock market all share index. Since the p-value is greater than the 5% level of significance, we do not reject the null hypothesis that "Monetary Policy Rate does not have significant effect on the Nigerian stock market All Share Index". Thus that study conclude that monetary policy rate (MPR) has insignificant positive effect on stock market performances in Nigeria.

The coefficient of TBR is -0.2217 with a t-value of -1.2179 (p > 0.05). This indicates that Treasury bill rate (TBR) has negative relationship with stock market performance in Nigeria. The result shows that one percentage increase in Treasury bill rate could lead to 22.17% increase in stock market all share index. Since the p-value is greater than the 5% level of significance, we do not reject the null hypothesis that "Treasury bill Rate does not have significant effect on the Nigerian stock market All Share Index". Thus that study conclude that Treasury bill rate (TBR) has insignificant negative effect on stock market performances in Nigeria.

The coefficient of INT is 0.2144 and a t-value of 2.1293 (p < 0.05). This indicates that lending rate (INT) has positive relationship with stock market performance in Nigeria. The result shows that one percentage increase in lending rate could lead to 21.44% increase in stock market all share index. Since the p-value is less than the 5% level of significance, we reject the null hypothesis that "Deposit Money Banks' Lending Rate does not have significant effect on the Nigerian stock market All Share Index". Thus that study conclude that lending rate has significant positive effect on stock market performances in Nigeria.

The coefficient of TBR is -0.0068 with a t-value of -0.1594 (p > 0.05). This indicates that Liquidity Ratio (LR) has negative relationship with stock market performance in Nigeria. The result shows that one percentage increase in Liquidity Ratio could lead to 0.68% increase in stock market all share index. Since the p-value is greater than the 5% level of significance, we do not reject the null hypothesis that "Liquidity Ratio does not have significant effect on the Nigerian stock market All Share Index". Thus that study conclude that Liquidity Ratio has insignificant negative effect on stock market performances in Nigeria.

The coefficient of DR is -0.3784 with a t-value of -3.1702 (p < 0.05). This indicates that Deposit rate (DR) has negative relationship with stock market performance in Nigeria. The result shows that one percentage increase in Liquidity Ratio could lead to 37.84% increase in stock market all share index. Since the p-value is less than the 5% level of significance, we reject the null hypothesis that "Deposit rate does not have significant effect on the Nigerian stock market All Share Index". Thus that study conclude that Deposit rate has a significant negative effect on stock market performances inNigeria.

Table 5: Results of the Granger Causality for Stock Market Performance (ASI) and Monetary Policy (MPR, TBR, INT, LR and DR)

Pairwise Granger Causality Tests				
Date: 05/27/15 Time: 05:54				
Sample: 1986 2013				
Lags: 2				
Null Hypothesis:	Obs	F-Statistic	Probability	Interpretation
MPR does not Granger Cause ASI	26	3.06561	0.06790	No causality

ASI does not Granger Cause MPR		2.71404	0.08946	
TBR does not Granger Cause ASI	26	2.43518	0.11191	No causality
ASI does not Granger Cause TBR		3.01238	0.07076	
INT does not Granger Cause ASI	26	2.05014	0.15370	Uni-directional causality (ASI --> INT)
ASI does not Granger Cause INT		3.95215	0.03493**	
LR does not Granger Cause ASI	26	0.78059	0.47098	No causality
ASI does not Granger Cause LR		1.05644	0.36546	
DR does not Granger Cause ASI	26	1.11689	0.34598	Uni-directional causality (ASI --> DR)
ASI does not Granger Cause DR		4.68476	0.02078**	

Note: * denotes significant at 1%, ** denotes significant at 5%; *** denote significant at 10%
Source: Researcher's Estimation using Eviews version 5.1
The result on Table 5 show nature and direction of causality between Stock market performance (ASI) and monetary policy variables (MPR, TBR, INT, LR and DR) are significant at 5% level. At 5% level of significance, we found the following causal relations: Stock market performance (ASI) has no causal effect with monetary policy rate, Treasury bill rate and liquidity in Nigeria. However, stock market performance (ASI) granger causes lending interest rate and deposit rate in Nigeria. This the study concludes stock market activities in Nigeria has been the determinant of monetary policy stance over the years under study.

CONCLUSION AND RECOMMENDATIONS

The study has investigated that effect of monetary policy on stock market performance in Nigeria. It was found that long run relationship existed between monetary policy and Nigerian stock market. The granger causality analyses equally showed that this relationship runs from stock market to monetary policy implying that it is the stock market activities that influences the nature and direction of monetary policy to follow. This indicates that in Nigeria, monetary policies rather adjusts to stock market activities. On the other hand, the OLS result indicated that monetary policy significantly explains 53% of the activities of the Nigerian stock market. This implies that monetary policy in Nigeria can be geared towards repositioning the activities of the stock market in Nigeria.

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