World Engineering & Applied Sciences Journal 7 (4): 250-259, 2016
ISSN 2079-2204

DOI: 10.5829/idosi.weasj.2016.250.259

Impact of Monetary Policy on Stock Returns in Nigeria

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Abstract: This paper investigates the impact of monetary policy on stock returns in Nigeria over the period 2003:01-2014:06. The empirical investigation was conducted using a six variable standard VAR model with six lags which includes consumer price index (CPI), inter-bank rate (IBR), open buy-back (OBB), Treasury bill rate (TBR), exchange rate (XGR) and all share index (ASI). The dynamic interactions among the variables are based on variance decompositions and impulse response functions generated from the VAR. The estimated results revealed that monetary policy variables did not have a significant impact on the prices of stock in Nigerian equity market. The implication of this result is that the Nigerian equities market do not significantly absorbs the monetary policy impulses and as such cannot be taken as being a good transmission channel yet for monetary policy implementation.

Key words: Monetary policy · Stock returns · CPI · IBR · OBB and XGR

INTRODUCTION

According to the discounted cash flow model, stock prices are equal to the present value of expected future net cash flows. Monetary policy should then play an important role in determining equity returns either by altering the discount rate used by market participants or by influencing market participants' expectations of future economic activity. These channels of influences are interlinked since more restrictive monetary policy usually implies both higher discount rates and lower future cash flows [1]. Thus, contractionary monetary policy should be associated with lower stock prices given the higher discount rate for the expected stream of cash flows and/or lower future economic activity. In contrast, an expansive monetary environment is commonly viewed as good news as these periods are usually associated with low interest rates, increases in economic activity and higher earnings for the firms in the economy. Consequently, stock market participants pay close attention to strategies based on the stance of the monetary authority as inferred by changes in indicators of central bank policy. Also, the financial press often interprets asset price movements as reaction to monetary policy shifts, attributing for instance increases in stock markets to low interest rates [2].

It is against this theoretical background that financial economists have sought to establish if and/or to what extent does monetary policy influences stock prices. Some of the notable studies done in this area include [1-5]. Much of these empirical literatures, which are more of developed economies and to a lesser extent, emerging market economies, conclude that there is a relationship between monetary policy and stock prices; however, the strength of relationship depends on structural and institutional features of the economy. The response of the financial markets towards monetary policy depends on market efficiency and the degree of development of both financial institutions and equity culture in the market. Few of the studies conducted on the efficiency of Nigerian capital market are on the weak-form efficiency. For example, [6], found evidence to support the weak-form efficiency hypothesis. Few other scholars have attempted to find reasons to justify the semi–strong form efficiency of the Nigerian capital market and the studies of [7], concluded that Nigerian capital market is not semi-strong efficient. On the other hand, almost all the studies on Efficient Market Hypothesis of developed capital market are semi-strong efficient. This explains the strong linkage between advanced/mature stock markets behavior and monetary policy, while it remained relatively weak for emerging markets.

With monetary policy increasingly becoming the policy choice the world over, understanding the link between monetary policy and stock prices in a developing country context is useful to both monetary authorities and investors [8]. Monetary authorities need to understand

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the relationship between monetary policy and stock prices so that they can appreciate the role that stock prices should play in monetary policymaking [8].

Thus, this study attempts to contribute further to the empirical inquiry for the Nigerian market and also to illustrate the role of the stock market as an alternate channel for transmitting monetary policy in the future. Adopting vector autoregressive (VAR) modeling approach and using monthly data, we rely on forecast error variance decompositions and impulse-response functions generated from the VAR result to gauge the strength of the interactions between monetary policy and stock prices in Nigeria. The variance decompositions indicate the percentage of a variable's forecast error variance attributable to its own innovations and innovations in other variables. From these, the relative strength of various shocks on a variable of interest may be judged. Moreover, the impulse response functions trace the directional responses of a variable to a one standard deviation shock in other variables.

The remaining parts of this paper are organized as follows: Section II reviews the related literature on relationship between monetary policy and the stock market. Section III describes the data and performs preliminary analyses. Then, Section IV presents estimation results of the VAR, which are summarized in variance decompositions and impulse response functions. Lastly, Section V concludes the paper.

Theoretical and Empirical Review

Theoretical Review: Monetary policy is a set of actions through which the monetary authority determines the conditions under which it supplies the money that circulates in the economy. Central banks are the monetary authorities responsible for providing currency and implementing monetary policy. Monetary policy therefore has an effect on short-term interest rates. Setting monetary policy goals has been a defining issue for economists and public opinion since the consolidation of central banks as the entities responsible for providing the economies with domestic currency and for implementing monetary policy. Parallel with academic progress and experience in this matter, the understanding of monetary policy has advanced significantly over the last few decades. Currently, it is clear that in both academic circles and among the world's monetary authorities, monetary policy's best contribution to sustained growth is to foster price stability. For that reason, in recent years, the central banks of many countries have reoriented their monetary policy objectives, setting price stability as their main goal. This goal has been formalized, in most cases, by establishing low-level inflation targets. The central bank does not control prices directly because these are determined by the supply and demand of many goods and services. Nevertheless, through monetary policy the central bank can influence the price-determination process and thus attain its inflation target. This suggests the extreme need for the monetary authority to identify the effects that its actions have on the general economy and, particularly, on the price-determination process.

In general terms, central banks conduct monetary policy by affecting the conditions under which they satisfy the economy's liquidity needs. This stage can be defined as the first stage of the transmission mechanism. The monetary authority provides liquidity to money market participants via changes in some items of the central bank balance or some measures that can influence interest rates more directly. The second stage of the transmission mechanism consists of four channels under which short-term interest rates can influence aggregate demand and supply and, therefore, prices.

Interest Rate Channel: Medium and long-term interest rates depend, among other factors, on expectations for short-term interest rates in the future. When the central bank induces changes in short-term interest rates, they affect the entire interest rate curve. Nominal interest rates for different time horizons also depend on inflation expectations for those time periods (higher inflation expectations lead to higher nominal interest rates). In general terms, real interest rate increases act as a disincentive to expenditure in an economy. On the one hand, when the cost of capital to finance projects increases, investment decreases. On the other hand, when real interest rates increase, the opportunity cost of consumption does also and therefore, consumption tends to slow. Both elements affect aggregate demand and, eventually, inflation.

Credit Channel: When interest rate increases, credit available for investment and consumption decreases. On the one hand, interest rate increases also raise the cost of credit and the demand for credit diminishes; on the other, the supply of credit can decline, because higher real interest rates may increase the risk of portfolio recovery and financial intermediaries typically react to this risk by tightening credit. The decline in consumption and investment leads to a decline in aggregate demand and, consequently, to lower inflation.

Exchange Rate Channel: The increase in interest rates can make domestic financial assets more attractive to investors than foreign financial assets. This situation can trigger an appreciation of the nominal exchange rate, thus reallocating expenditure in the economy. The latter takes place because this exchange rate adjustment tends to diminish the price of imports and raise the price of exports, which tends to slow aggregate demand and eventually reduce inflation. When the exchange rate appreciates, the cost of imported inputs declines and thus firms' costs in general. These developments have a favorable effect on inflation.

Other Asset-price Channel: An interest rate increase tends to make bonds more attractive for investors and reduces the demand for equity, making the value of these and other assets decrease. In a situation where the market value of firms decreases, these firms can face lower capacity to access financing, therefore hindering the consolidation of new investment projects. The latter also slows aggregate demand and therefore reduces in inflation.

A share price on the other hand, is the present value of its future cash flows. The higher the cash flows (revenues, collection of accounts receivables, etc) the higher the stock price. This is because investors care about the cash flows and what these flows mean to them in the present. Cash flows are crucial in determining the value of a stock since the ability to pay dividends depends on it. This practice has its basis in the presumption that investors act rationally and without biases and that at any moment they estimate the value of an asset based on future expectations. Under these conditions, all existing information (including monetary policy information), affects the price, which changes only when new information comes out. By definition, new information appears randomly and influences the asset price randomly.

Empirical studies have demonstrated that prices do not completely follow random walks [9]. Low serial correlations (around 0.05) exist in the short term and slightly stronger correlations over the longer term [9]. Their sign and the strength depend on a variety of factors. Researchers have found that some of the biggest price deviations from random walks result from seasonal and temporal patterns. In particular, 6returns in January significantly exceed those in other months (January effect) and on Monday's stock prices go down more than on any other day. Observers have noted these effects in many different markets for more than half a century, but without succeeding in giving a completely satisfactory explanation for their persistence.

Technical analysis uses most of the anomalies to extract information on future price movements from historical data. But some economists, for example Eugene Fama, argue that most of these patterns occur accidentally, rather than as a result of irrational or inefficient behavior of investors, the huge amount of data available to researchers for analysis allegedly causes the fluctuations.

Another school of thought, behavioral finance, attributes non-randomness to investors' cognitive and emotional biases. This can be contrasted with fundamental analysis. When viewed over long periods, the share price is related to expectations of future earnings and dividends of the firm [10].

Empirical Review: Empirically, many financial economists have examined the relationship between monetary policy and stock prices to ascertain the level of their interactions. A comprehensive review of the literature in this field was done by [11, 12]. Here we only provide a brief review of some of the empirical literature.

Patelis [2], examined whether shifts in the stance of monetary policy can account for the observed predictability in excess stock returns. Using long-horizon regressions and short-horizon vector autoregressions, he concluded that monetary policy variables are significant predictors of future returns, although they cannot fully account for observed stock return predictability.

Thorbecke [1], used a standard VAR in which monetary policy innovations are identified by Cholesky decomposition to investigate the relationship between monetary policy and asset prices in the U.S. Using various measures of monetary policy stance, he found evidence indicating that expansionary monetary policy increases ex-post stock returns. Specifically, he found that a one-standard deviation positive innovation in the federal funds rate depressed stock returns by an average of -0.80 percent per month and a one-standard deviation positive innovation in non-borrowed reserves increased stock returns by an average of 1.79 percent per month.

Ioannidis and Kontonikas [5], investigated the effect of the monetary policy on stock returns in thirteen OECD countries over the period 1972-2002. They regressed the stock market variable on the monetary policy variable and found that stock returns decrease when money supply decreases. Their findings indicate that monetary policy

shifts have significant negative impact on both nominal and inflation-adjusted stock returns. This relationship was significantly different from zero at the 5 percent level in 10 out of 13 countries. However, the strengths of the links differed from one country to another possibly because of their inherent structural differences.

Obonye and Jonah [8], used standard vector autoregressions (VAR) technique to quarterly data for Botswana for the period 1993-2010 to investigate the impact of monetary policy shocks on stock returns. Their results indicated that positive interest rate innovations are associated with increases, rather than decreases, in the aggregate stock returns of companies listed on the Botswana Stock Exchange (BSE). They noted that a possible explanation for the counter-intuitive result is that the market capitalization in BSE is dominated by commercial banks, which are also the main beneficiaries of the interest income from investment in risk-free Bank of Botswana Certificates. They also observed that the positive reaction of aggregate stock returns to monetary policy tightening suggests that the increase in returns to bank stocks offsets the negative reactions of non-bank stock returns. Variance decomposition shows that monetary policy shocks explain a relatively small proportion of stock returns variability in BSE.

Daferighe and Aje [13], examined the link between stock prices and monetary policy using Nigerian data for the period 1997-2006 and found evidence of a negative, albeit weak relationship.

Maku and Atanda [14], examined the long-run and short-run macroeconomic shocks effect on the Nigerian capital market between 1984 and 2007. They examined the properties of the time series variables using Error Correction Model (ECM). However, the empirical analysis showed that the NSE all share indexes is more responsive to changes in exchange rate, inflation rate, money supply and real output. Therefore, all the incorporated variables that serve as proxies for external shock and other macroeconomic indicators have simultaneous significant impact on the Nigerian capital market both in the short and long-run.

Udegbunam and Eriki [15], in their study on the Nigerian Stock Market, examining the relation between stock prices and inflation found a strong evidence to support the proposition that inflation exerts a significant negative influence on the behaviour of stock prices. The study further revealed that stock prices are also strongly driven by the level of economic activity measured by Gross Domestic Product (GDP), interest rate, money stock and financial deregulation.

Osuagwu [16], investigated the impact of monetary policy variables on the performance of the stock market in Nigeria using quarterly data for twenty four years (1984:1 – 2007:4). He found that stock market performance is strongly determined by broad money supply, exchange rates and consumer price index in the short and long-run. Hence, the liquidity, exchange rate and price level channel of monetary policy transmission is supported by evidence as determinants of stock price movements in Nigeria. On the other hand, minimum rediscount rate and Treasury bill rates show mixed results, they were unable to demonstrate significant relationship to changes in stock market index, though their coefficients follow expectations.

Osisanwo and Atanda [17], also examined using time series analysis, the determinants of stock market returns in Nigeria. Their findings indicated that interest rate, previous stock return levels, money supply and exchange rate are the main determinants of stock returns in Nigeria.

Methodology: A popular approach to identify the linkages between monetary policy and stock returns behaviour is to estimate the vector-autoregressive (VAR) model of various monetary indicators and stock returns. This methodology was first developed by [18], after he criticized the methodological concepts of large-scale structural simulations models which failed to forecast for unprecedented events. Empirical analysis in this paper followed the work of [3], which is based on a vector autoregression (VAR) model. Being a reduced-form model, VAR framework treats all variables in the system as potentially endogenous and allows for very general patterns of interactions among them. The model is particularly well suited for addressing issues related to the strength and nature of the transmission of shocks and dynamic linkages among variables of interest in an unconstrained fashion. Compactly, the VAR model can be written as follows:

$$A(L)Z_t = e_t \quad (1)$$

where Z_t is an n x 1 vector of n time series included in the model and et is an n x 1 vector of serially uncorrelated but contemporaneously correlated residuals with mean zero and variance-covariance Ω. A(L) is a matrix of polynomials in the lag operator L. Note that the residual vector e_t represents innovations or shocks of the variables making up Z_t. Accordingly, Z_t may be viewed as the response to these innovations with the adjustment process represented by A(L).

While the coefficients of the VAR can be estimated easily using standard estimation procedures, the results from a specified VAR are more easily interpreted based on its moving average representation. By inverting or successive substitution, model (1) has a moving average representation as follows:

$$Z_t = B(L)\, e_t \quad (2)$$

where $B(L) = A(L)^{-1}$. Since the residual vector e_t is contemporaneously correlated, it is impossible to account for variations in Z_t that are attributed to any specific variable in the model. We follow Sims' (1980) empirical strategy by further transforming specification (2) into an orthogonal form using the Choleski decomposition of the variance-covariance matrix of e_t. This transformation expresses Z_t as a function of orthogonalized innovations as follows:

$$Z_t = C(L)u_t \quad (3)$$

where $C(L) = A(L)^{-1}Q$, u_t is a vector of orthogonalized innovations and Q is a lower-triangular matrix. From this representation, we may generate variance decompositions and impulse-response functions, which are useful tools for evaluating the dynamic interactions among the variables. The variance decomposition measures the proportion of the forecast error variance of a variable that can be attributed to innovations in other variables in the system. It serves as a tool for evaluating the strength of causal linkages among variables as well as relative importance of various innovations to variations in a variable of interest. Meanwhile, the impulse-response function provides information on how innovations in Z_t influence the time path of a concerned variable. As we have noted, these measures incorporate both the direct effects of a shock to a variable of interest and the indirect effects of the shock that is propagated first through other remaining variables in the system. Accordingly, the question of dynamic linkages among the variables considered can be properly addressed.

The VAR modeling necessitates taking into consideration various statistical issues. Before estimating a specified VAR model, we need to test for the existence of nonstationarity in levels of the variables. Then, we have to evaluate the presence of cointegration among them. These preliminary tests for the stochastic properties of the data series are highly important for proper specification of the VAR model. Namely, if the variables are non-stationary integrated of order 1 and are not cointegrated, then the variables in the VAR have to be first-differenced. However, if they are cointegrated, then a vector error correction model should be used. Equivalently, the VAR can be modeled using the levels of the variables [3]. In this analysis, we employ standard augmented Dickey-Fuller (ADF) and Phillips-Perron (PP) unit root tests for establishing the variables' orders of integration and the multivariate approach of [19], to evaluate the cointegration among the variables. Another important issue in the estimation of VARs is the selection of the lag order. A long lag quickly exhausts degrees of freedom and reduces the precision with which effects can be estimated, while too few may not mop up serial correlation. For this study, we therefore choose six lags as suggested by Akaike Information Criteria (AIC) and LR so as to ensure that our model's residuals are serially uncorrelated. Then, given the nature of the Choleski factorization, variance decomposition and impulse response function results may be sensitive to the ordering in the decomposition. The exchange rate and stock returns are placed last because as forward-looking asset prices they react quickly to all available information. Ordering stock returns last is also consistent with the efficient market hypothesis suggested by [20], which show that the stock market reacts sensitively to shocks in macroeconomic variables. Having ordered the variables in this manner, we proceed to computation of variance decompositions and impulse-response functions.

Data and Choice of Variables: The data sets used for this analysis is the monthly series of the selected variables from 2003:01 to 2014:06. The data was extracted from the Central Bank of Nigeria statistics database and whenever necessary, is supplemented with author's computations.

Since VARs are data intensive, one has to decide on the set of variables to model, which might be regarded as capturing the principal interactions in the monetary policy-asset price relationships. This paper estimates a six-variable VAR that includes the inflation rate proxied by Consumer Price Index (CPI), a measure of monetary policy given by 91-day Treasury Bill Rate (TBR), Open Buy-Back (OBB) and Inter-Bank Rate (IBR), The exchange rate (XCHR) is represented by the Retail Dutch-Auction System/Wholesale Dutch-Auction (RDAS/WDAS) between Nigerian naira and US dollar and finally, a measure of stock returns given by All Share Index (ASI). The variables XCHR and ASI are incorporated into the model in their natural logs. This is to enable us index all the variables and to aid interpretation of results.

Table 1: Summary of Augmented Dickey-Fuller (ADF) Unit Root Test

Variables	T-Statistics	Test Critical Values		Order of Integration
CPI	-2.633669	1%	-4.0273	I(0)
		5%	-3.443	
		10%	-3.146	
CPI	-10.26144**	1%	-2.5808	I(1)
		5%	-1.9422	
		10%	-1.6169	
IBR	-5.686929**	1%	-3.48	I(0)
		5%	-2.883	
		10%	-2.5781	
OBB	-5.332573**	1%	-3.48	I(0)
		5%	-2.883	
		10%	-2.5781	
TBR	-2.092244	1%	-3.4804	I(0)
		5%	-2.8832	
		10%	-2.5782	
TBR	-10.14823**	1%	-3.4807	I(1)
		5%	-2.8833	
		10%	-2.5783	
XGR	-0.773096	1%	-3.4789	I(0)
		5%	-2.8825	
		10%	-2.5778	
XGR	-7.628705**	1%	-3.4793	I(1)
		5%	-2.8827	
		10%	-2.5779	
ASI	-1.845714	1%	-3.4789	I(0)
		5%	-2.8825	
		10%	-2.5778	
ASI	-10.17238**	1%	-3.4793	I(1)
		5%	-2.8827	
		10%	-2.5779	

Note: (1) ***Indicate that the corresponding null hypothesis is rejected at 1% significance level. (2) The stochastic time series properties are integrated of order one, I(1) and; order zero I(0) (3) The test is performed using E-views 3.1*

Inflation accounts for the forward-looking monetary policy and its omission is argued to often result in *price-puzzles* – positive interest rate innovations being associated with increases, rather than decreases, in the price level [21]. Inflation is proxied by CPI. While most studies on the Nigerian economy use the Minimum Rediscount Rate/Monetary Policy Rate (MRR/MPR), as a measure of monetary policy, this study uses the 91 day TBR, OBB and IBR as a measure of the short-term interest rate. This is because the former is an administrative and deterministic rate which seldom changes, while the latter are market rates interest, determined by the forces of supply and demand. The exchange rate is included as a transmitter of external shocks on the economy's purchasing power. The All Share Index (ASI) is used as a proxy for stock prices and captures the movement of prices of stocks listed on Nigerian Stock Exchange (NSE).

Diagnostic Analysis: The starting point in the empirical method outlined in the preceding section before the last one is to establish the stochastic properties of the variables. We implement the normally used Augmented Dickey-Fuller (ADF) unit root tests for testing the stationarity of the variables. The results reported in Table 1 show that only IBR and OBB are stationary at levels, whereas other variables became stationary after their first differences. Having established the integration order of the variables, we apply multivariate cointegration tests of [22, 19], to examine whether the variables are cointegrated. The result of the cointegration test given in Table 2 indicates that there are 2 cointegrating equations at 5% significance level among the variables. An important implication from these integration and cointegration tests is that the dynamic interactions among these variables need to be based on vector error correction modeling (VECM). Alternatively, the finding of cointegration among the variables validates the standard VAR in levels, since VECM is derivable from VAR in levels. In line with the work of [3], we work with the VAR in levels for our purpose.

Table 2: Johansen Test for Cointegration

Date: 08/21/14 Time: 04:15
Sample: 2003:01 2014:06
Included observations: 133
Test assumption: Linear deterministic trend in the data
Series: ASI CPI IBR OBB TBR XGR
Lags interval: 1 to 4

Eigen value	Likelihood Ratio	5 Percent Critical Value	1 Percent Critical Value	Hypothesized No. of CE(s)
0.319189	136.4768	94.15	103.18	None **
0.264866	85.34216	68.52	76.07	At most 1 **
0.216477	44.41764	47.21	54.46	At most 2
0.052975	11.97163	29.68	35.65	At most 3
0.033137	4.732527	15.41	20.04	At most 4
0.001883	0.250665	3.76	6.65	At most 5

*(**) denotes rejection of the hypothesis at 5%(1%) significance level
L.R. test indicates 2 cointegrating equation(s) at 5% significance level

VAR Results

Impulse Response Function: For the purpose of our study we leave aside other interesting issues related to interactions in other variables and focus only on the interactions between All Share Index (ie stock prices) and other variables. Therefore we are concerned with the panels in the last row of Figure 1. We report impulse response functions computed from VAR results for up to 30 months horizons. According to the figure, stock prices responded positively to a positive shock in inflation (CPI), although the response was not significant. This positive relationship between inflation and stock prices is in line with Tobin q and fisher effect hypothesis that suggest that nominal asset returns should move in the same direction with inflation rate and in contrast with the inflation expectation hypothesis introduced by [23]. On Inter-Bank Rate (IBR) and Treasury Bill Rate (TBR), stock prices responded negatively to both their positive shocks almost in the same manner, except that the shock from TBR was more significant than that from IBR. This result is consistent with theory as increase in interest rate results in high cost of borrowing which will in turn impact negatively on the output and eventually expected future dividends and ultimately on the stock prices, just as increase TBR as an alternative source of investment will impact negatively on stock prices. Stock price response to a positive shock in Open Buy-Back (OBB) is positive and significant. This result is however, counterintuitive. This is because OBB as a tool used by CBN to mop up liquidity is expected to have a negative relationship with stock prices. A possible reason for this result is because of fiscal policy of Nigerian governments as pointed out by [24]. According to their finding, CBN contractionary monetary policy is often neutralized by the government deficit spending. On the other hand, stock prices sharply responded negatively to a positive shock in exchange rate (XGR), the shock however did not last as stock prices returned to equilibrium at about the 5th month, it slightly went positive and quickly returned to equilibrium and thereafter remained insignificantly above equilibrium for the remaining part of the horizon under consideration. The sharp response of stock prices to a shock in exchange rate is an indication that stock prices are quite sensitive to exchange rate in Nigeria.

Variance Decompositionp: Table 3 reports Variance Decomposition for 15-month horizons. In order to have a more realistic understanding of the impact of monetary policy on stock prices in Nigeria, we hold Open Buy-Back (OBB), constant since it is not correctly signed (ie its relationship with stock prices is counterintuitive). Inflation (CPI) accounted for 1.76% variations in stock prices (ASI) in the first month, 5.67% in the fifth month (when it peaked) and 3.14% in the fifteenth month. Inter-Bank Rate (IBR) in the first month accounted for 0.87% variations in stock prices, peaked in the sixth month with 5.19% and thereafter 3.78% in the fifteenth month. Treasury Bill Rate (TBR) explained 2.92% variations in stock prices in the first month, 1.31% in the fourth month and continuously increased to 13.67% in the fifteenth month. Exchange Rate on its own part explained 10.58% variations in stock in the first month, 11.96% in the second month and substantially decreased until the fifteenth month when it explained only 2.02% variations in stock prices.

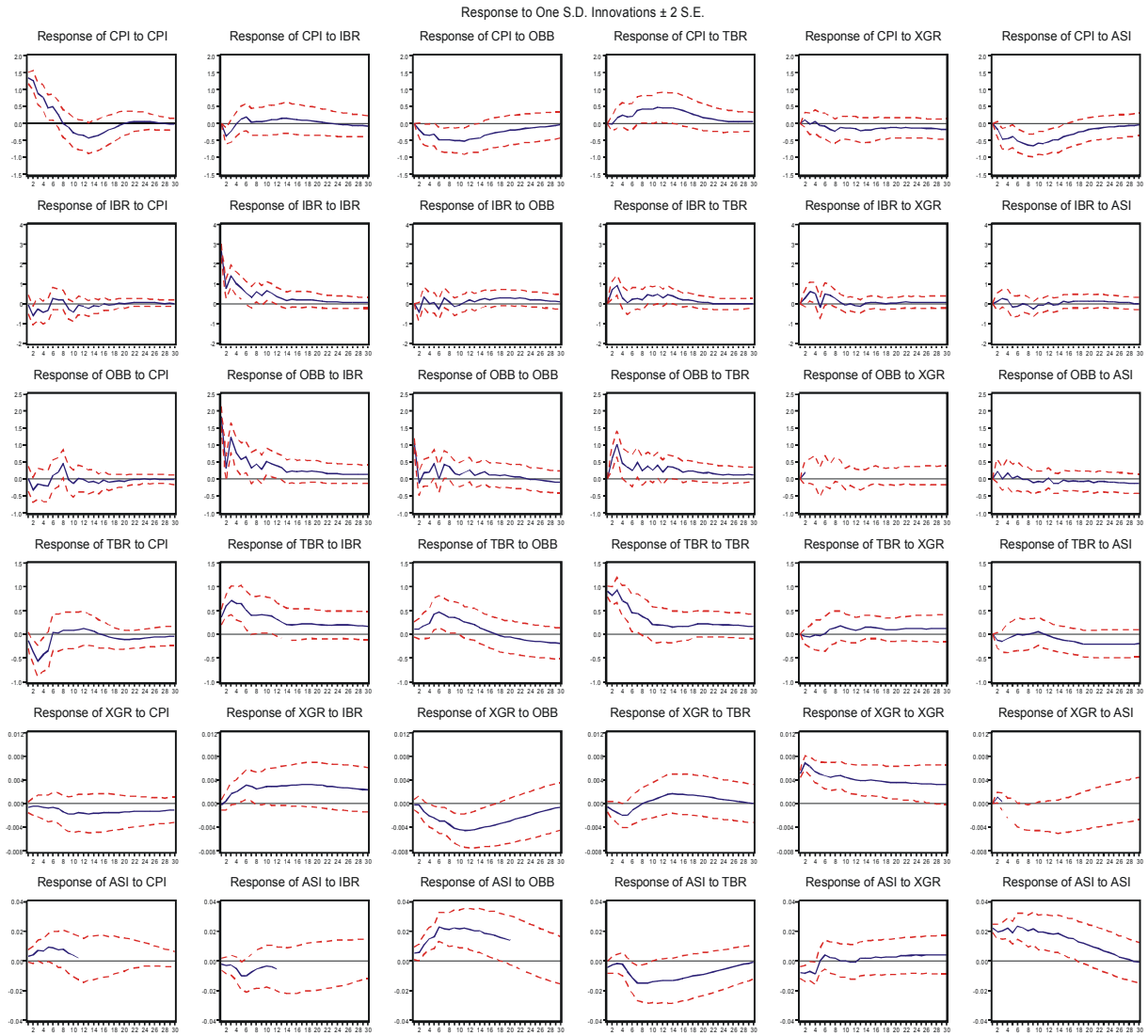

Fig. 1: Impulse Response Function

Table 3: Variance Decomposition of ASI:

Period	S.E.	CPI	IBR	OBB	TBR	XGR	ASI
1	0.024588	1.760274	0.868559	4.621566	2.919005	10.58285	79.24774
2	0.033571	2.356588	1.333681	5.323991	2.232307	11.95882	76.79462
3	0.042002	4.237721	1.355729	10.15258	1.672768	10.34931	72.23189
4	0.051122	4.422397	1.990016	15.32161	1.314124	9.926834	67.02501
5	0.058899	5.671240	4.436945	19.14143	2.392642	7.481236	60.87651
6	0.069713	5.638397	5.191466	24.29780	4.455378	5.691547	54.72541
7	0.078568	5.413448	5.011525	26.81381	7.170531	4.560719	51.02997
8	0.085727	5.373573	4.634711	28.60839	9.132049	3.862290	48.38899
9	0.092685	4.924959	4.230447	30.20818	10.49437	3.304509	46.83754
10	0.098240	4.522925	3.906371	31.72258	11.38587	2.941436	45.52082
11	0.103549	4.107462	3.664111	33.09643	12.04868	2.651222	44.43210
12	0.108370	3.750735	3.601716	34.11915	12.52558	2.425014	43.57781
13	0.112742	3.493776	3.639752	34.81437	12.98722	2.258776	42.80611
14	0.116980	3.278625	3.704910	35.35904	13.33850	2.121917	42.19701
15	0.120520	3.136450	3.785446	35.74431	13.67440	2.024052	41.63534

Summarily, holding OBB constant, monetary policy explained 16.13% variations in stock prices in the first month and 22.84% in the fifteenth month.

DISCUSION

This paper examined the impact of monetary policy on stock returns of firms listed on the Nigerian Stock Exchange. The existence of such a relationship has important implications for both stock market participants and Central Bank of Nigeria (CBN). Central bank is interested in whether monetary policy actions are propagated through the financial markets, while market participants use the information for stock price determination and portfolio formation. Theory postulates that stock prices equal the expected present value of future net cash flows. Thus a contractionary monetary policy decrease future cash flows or increase the discount factors at which those cash flows are capitalized, hence is negatively related to stock prices. This study applied a six variable standard VAR model with six lags in its analysis, which includes consumer price index (CPI), inter-bank rate (IBR), open buy-back (OBB), Treasury bill rate (TBR), exchange rate (XGR) and all share index (ASI).

The estimation results provided evidence that monetary policy variables did not have a significant impact on the stock market performance for the period under study, from January 2003 to June 2014. The implication of this result is that the equities market has not significantly absorbs the monetary policy impulses and cannot be taken as being a good transmission channel for monetary policy implementation in Nigeria. In other words the Nigerian securities market is still underdeveloped and not yet efficient enough to absorb the informational content of the monetary policy of the CBN. Another possible reason why monetary policy has insignificant impact on stock prices in Nigeria is because of misalignments between monetary and fiscal policy. While the former is within the purview of the central, the latter is not and that is why contractionery policy of the CBN is often neutralized by the (deficit) fiscal spending of the government hence the insignificance relationship between monetary policy and the Nigerian stock market.

It is therefore evident from the result of this study that the stock market is not yet an efficient transmission mechanism of monetary policy in Nigeria. To that extent, the CBN cannot significantly influence the performance of the Nigerian equity market through its monetary policy.

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