STOCK MARKET RESPONSE TO MONETARY AND FISCAL POLICIES IN NIGERIA

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ABSTRACT

Unlike most studies that examined the stock market response to variations in monetary policy and fiscal policy in isolation, this study analyzes Nigeria's stock market response to the joint interactions between fiscal and monetary policies. Employing the SVAR model on quarterly data from 1990Q1 to 2016Q4, the accumulated impulse response shows that both fiscal and monetary policies influence the stock market in Nigeria. Evidence also shows that the interaction between the two policies is very important in explaining the developments in the stock market. Business analysts and investors reviewing the stock market performance in relation to macroeconomic policies are therefore advised to consider the joint, not separate, effects of fiscal and monetary policies on the stock market.

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1. INTRODUCTION

As they are meant to influence the behaviour of the same economy, fiscal and monetary policies are not taken in isolation. This makes it difficult to isolate the separate effects of each policy on the economy. It is for this reason that this paper seeks to examine the combined effect of monetary and fiscal policies on stock market performance using stock prices as an indicator.

While monetary policy involves the actions of a central bank, currency board or other regulatory committee that determine the size, growth rate of money supply and cost and availability of credits, fiscal policy is the means by which a government adjusts its expenditure and revenue to monitor and influence a nation's economy. The two policies therefore aim to achieve price stability, low unemployment and sustainable economic growth among other major economic goals. Monetary authorities might choose to reduce interest rate in order to inject funds into sectors that could provide employment while the government could decide to increase its expenditure to achieve reduced unemployment. As monetary and fiscal authorities have to work hand in hand to achieve broad economic goals, the effect of monetary and fiscal policies are difficult to separate (Chatziantoniou,et al.,2013). Thus it is imperative to examine the joint effects of both policies on key macroeconomic variables, basically prices and output, in order to have an accurate picture.

As in many countries, Nigeria has employed the two policies to achieve desirable economic outcomes. For example, the financial sector reform that led to the consolidation of the banking and insurance sectors had a profound effect on the capital market, with the stock market registering impressive growth (Orekoya, 2015).

This paper seeks to examine the joint effects of monetary and fiscal policies on the Nigeria's stock market. On the basis of empirical results emanating from the study, the paper aims to proffer policy recommendations on ways to promote the development of the capital market with appropriate combination of fiscal and monetary policy tools. A developed stock market is an essential avenue for raising funds for long-term investment at comparatively lower cost. It would bring together the savers and investors and by the interaction of these two groups in the market, the available accumulated savings are channeled as investment into viable and most desirable sectors in the economy for the growth and development of the economy (Nwakobi and Alajekwu, 2017).

Moreover, a developed stock market would contribute to economic growth through the specific services it performs either directly or indirectly. The important services that the stock market provides include savings mobilization, liquidity creation, risk diversification, improved information dissemination and enhanced incentive for corporate control. Implementing fiscal and monetary policies that would improve stock market performance would definitely augment economic growth rate as these functions of the stock market would be performed more effectively (Handayo, et al., 2015). This study is based on the realization that there is paucity of empirical evidence from Nigeria on the joint effect of fiscal and monetary policies. The motivation for this study therefore lies in aiming to cover this void.

In order to achieve the aforementioned objective, the rest of the paper is divided into five sections. Section two explores the literature on monetary and fiscal policies as they relate to the stock market. Section three provides the methodology for the study while data, sources and measurement of variables are presented in section four. Following the empirical findings and analysis in section five, the paper offers a conclusion in section six.

2. LITERATURE REVIEW

Various studies have investigated the isolated effect of monetary and fiscal policies on the stock market. While these studies (Laopodis, 2006; Bjornland and Leitemo, 2005; Bernanke and Kuttner, 2004; Crowder, 2004; Bernanke and Gertler, 2000; and Thorbecke, 1997) focused on the effect of monetary policy shocks on the stock market, others (Agnello and Sousa, 2010; Afonso and Sousa, 2009; Ardagna, 2009; Akitoby and Stratmann, 2006; Darrat, 1988) emphasized the fiscal counterpart. Thus, little has been done to unravel the effect of the interaction between monetary policies and fiscal policies on the stock market performance.

On the relationship between monetary policies and the stock market, Chatziantoniou, Duffy & Filis (2013), argued that monetary policies can influence stock market prices in a number of ways:

The credit channel explains that changes in interest rates can influence the level of corporate investment in a country by increasing the cost of borrowing. The level of corporate investment would influence the market value of firms and thereby influence their stock prices. An increase in interest rate would increase the cost of borrowing thereby making capital for corporate investment more expensive. This would discourage companies and firms from borrowing from banks for expansion hence they would prefer to source for capital from the financial markets through the sale of shares. The increase in the supply of stocks without an increase in the supply of money is bound to drive stock prices down.

The exchange rate channel suggests that alteration of interest rate would alter the country's domestic exchange rate and cause changes in the amount of imports and exports. A higher interest rate would increase the quantity of funds flowing into the country as investors are attracted to higher interest rates, this would result in the increase of the domestic exchange rate resulting in higher imports and lower exports. Increase in the domestic exchange rate reduces the competitiveness of the country's exports and leads to reduced demand and reduced production. Reduction in production would lead to lower stock returns and reduce the attractiveness of stock thereby reducing the demand of stocks and eventually stock prices.

The wealth effect channel explains that a rise in interest rates would cut the value of long-term assets (stock prices). Stocks are important components of household wealth. An increase in interest rates would result in the reduction of the amount of money in circulation. Household would therefore withdraw money from stocks because they would give more value to cash in hand and cash at bank than money tied up in investment in

stocks. Mass withdrawal of money from the stock market would drive down stock prices (Mishkin, 2001).

The monetary channel explains that a monetary shock provides a wedge between money supply and demand which triggers adjustment in portfolio holdings and consequently alters spending decisions. (Orekoya, 2014).

The research works of Laopodis (2006), Bjornland and Leitemo (2005), Bernanke and Kuttner (2004), Crowder (2004), Bernanke and Gertler (2000), Thorbecke(1997), Nwakobi and Alajekwu (2017) all agree that monetary policy can influence asset prices particularly stock prices through one or all of the above channels. Bjornland and Leitemo (2005) estimate the relationship between US monetary policy and the S&P 500 index using structural VAR methodology for monthly data from 1983M1 to 2002M12. They argued that monetary policy shocks that increase interest rate have an immediate and significant negative effect on stock prices. They also argue that stock returns are higher under monetary policy shocks but gradually fall back to average returns. Crowder (2004) and Bernanke and Kuttner (2004) also examined the reaction of stock market to Federal Reserve policy but distinguished between the effects of expected and unexpected monetary policy actions on the stock market. They argued that asset markets are forward looking and tend to incorporate any information about anticipated policy changes. Therefore only unexpected policy actions would have a plausible effect on stock prices. Thorbecke (1997) uses innovations in monthly federal funds rate and non-borrowed reserves to capture the effects of monetary shocks on industry level returns over the period 1967 to 1990 using Dow Jones Industrial Average (DJIA) and Dow Jones Composite Average (DJCA.

As MP impacts the stock market, Laopodis (2006) explains that the stock market can also influence monetary policy via two general effects. Increase in stock prices would increase household wealth and consequently consumption. This might cause the central bank, from fear of rising inflationary expectations, to raise interest rate in order to curtail spending. Also, increase in stock prices would make borrowing easier for many sectors of the economy and therefore increase investment and aggregate spending. If the trend continues, the monetary authority might respond by applying restrictive monetary policy to prevent the economy from overheating. The empirical work of Bernanke and Gertler (2000) provides further evidence that changes in stock prices can trigger monetary actions.

Bohl, Siklos & Sondermann (2008) analyze the reaction of European stock market returns to unexpected interest rate decisions by the European Central Bank (ECB) through the heteroskedasticity approach of Rigobon and Sack (2004) using daily data from January 1, 1999 to February 28, 2007. They made use of the indices of the four largest stock markets in the euro area: French CAC 40, German DAX 30, Spanish IBEX 35 and Italian MIB 30 and Euro Stoxx 50 as proxy for the aggregate European stock market while using the EURIBOR as interest rate proxy. Their findings for Europe indicate a negative and significant response of European stock returns to MP shocks induced by the ECB.

For Nigeria, Ajie & Nenbee (2010) and Okpara (2010) examine the relationship between monetary policy and stock prices in the Nigerian Stock Exchange. The authors used the

method of co-integration and error correction modelling on time series data from 1986 to 2008 and argued that increase in the Nigerian interest rate resulted in decrease in stock prices on the NSE. Okpara (2010) used the average of end of the month quoted stock prices from 1985M1 to 2006M12 and found that high Treasury bill rate reduces stock market returns.

Notwithstanding the overwhelming studies on the effect of monetary policy shocks on the stock market, some attempts to explore the effect of fiscal policy shocks on the stock market include: Chatziantoniou, et al (2013); Agnello & Sousa (2010); Afonso & Sousa (2009); Ardagna (2009); Akitoby and Stratmann (2006) and Darrat (1988). From a theoretical perspective, the economic effect of fiscal policy on the stock markets may be negative, positive or inconsequential depending on the school of thought (Keynesian, Classical or Ricardian). Keynesians believe fiscal policy can support aggregate demand to boost the economy and potentially drive stock prices higher. Classical economics however focus on the crowding out effects of fiscal policy in the market for loanable funds and of the productive sector of the economy. Therefore, fiscal policy could potentially drive stock prices lower through the crowding out of private sector activity. However, the adherents of Ricardian policy feel that fiscal policy is impotent and would therefore have no effect on the stock markets (Chatziantoniou et al, 2013).

Darrat (1988) investigates the empirical relationship between aggregate quarterly stock returns and fiscal policy actions in the case of Canada and found out that fiscal deficit has a highly negative effect on current stock prices. Ardagna (2009), using yearly data of OECD countries from 1960 to 2002, discovers that stock market prices tend to surge around times of substantial fiscal tightening and fall in periods of very loose fiscal policy and that the response depends on countries' initial fiscal conditions and on the type of fiscal consolidations. Afonso & Sousa (2009), using quarterly data for variables such as the S&P 500 (for the U.S.A), FTSE- all share index (for the UK), and the MSCI (for Germany and Italy) as representations of the respective stock markets, found that government spending shocks lead to a quick fall in stock prices while government revenue shocks have a positive effect. Agnello and Sousa (2010) analyze quarterly data from 10 industrialized countries: the U.S.A, U.K, Spain, Portugal, Netherlands, Italy, Germany, France, Finland, Belgium using panel-data Vector auto-regression (PVAR) methodology. The study discovered that positive fiscal policy shock has a negative effect on stock prices.

From the foregoing literature, it seems plausible to infer that stock markets tend to favour contractionary fiscal policy than expansionary one. However, Hsing (2013) refutes this claim in his study using the GARCH model to estimate the effect of monetary and fiscal policies in Poland. He holds that fiscal policy does not have any effect on the Poland's stock market. He also found that contractionary monetary policy tended to exert a negative effect.

In line with the submission of Chatziantoniou et al (2013), examining the isolated effect of monetary or fiscal policy on stock market performance will offer only half of the picture. The other half requires examining the interaction between the two policies. Fiscal policy can interact with monetary policy through: (i) the impact of the government inter-temporal budget constraint on monetary policy and (ii) the effect of fiscal policy on

monetary variables such as interest rate, exchange rate and inflation. The inter-temporal budget constraint requires that government expenditure be financed through taxation, borrowing or seigniorage. Sargent & Wallace (1981) point out that in a fiscal dominant regime, where the fiscal authority sets its budget independently of public sector liabilities; a fiscal expansion may eventually require monetization and result in higher inflation.

In sum, the effects of fiscal and monetary policies cannot be effectively separated because they are both critical in economic management of any country. Hence there is need to align the goals of the two policies. Thus, given the interdependence of monetary and fiscal policies, especially in the Nigerian context, and the effects of both policies on stock market prices, it is imperative to integrate the two into one framework in which the interactions and effects of both on the stock market can be analysed.

3. METHODOLOGY

For this study, the Structural Vector autoregressive (SVAR) methodology was employed to capture the dynamic response of stock market to variations in monetary and fiscal policies. To do this, the following variables were used in the model: index of industrial production (IIP) as proxy for aggregate economic output; consumer price index (CPI); money supply (M2); Treasury bills (TB) rates; all share index (ASI) for Nigeria; and government expenditure (GEXP) as proxy for fiscal policy. As proxy for fiscal policy, government expenditure (GEXP) is considered superior to government revenue, because the modelling of contemporaneous interactions between taxes and economic activities will not be necessary. Given the monetary authority's variation in policy as explained earlier in the literature, aggregate economic output (GDP) and price level (CPI) were introduced into the model to capture the full dynamics of monetary and fiscal policy impulse mechanisms. Leveraging on this, the study's analysis focus on the interaction between the macroeconomic policies and the developments in the stock market.

Equation (1) is the general form of the Structural representation of the VAR model:

$$A_0 Y_t = c_0 + \sum_{i=1}^{p} A_i Y_{t-1} + \varepsilon_t \text{ -----(1)}$$

where Y_t is a column vector of variables, A_0 is the square matrix of simultaneous coefficients, A_i is the square matrix of auto-regression coefficients and ε_t is the column vector of structural disturbance reduced form estimated by multiplying the equation (1) by A_o^{-1};

$$Y_t = a_0 + \sum_{i}^{p} B_i Y_{t-1} + \varepsilon_t \text{ -----(2)}$$

In this equation, Y_t contains all the variables specified above so that $\varepsilon_t = A_o e_t$, $B_i = A_0^{-1} A_i$ and $a_0 = A_0^{-1} c_0$

$$\begin{bmatrix} e^{iip_t} \\ e^{cpi_t} \\ e^{g\exp_t} \\ e^{m2_t} \\ e^{tbr_t} \\ e^{asi_t} \end{bmatrix} = \begin{bmatrix} 1 & 0 & 0 & 0 & 0 & 0 \\ a_{21} & 1 & 0 & 0 & 0 & 0 \\ a_{31} & a_{32} & 1 & 0 & 0 & 0 \\ a_{41} & a_{42} & a_{43} & 1 & 0 & 0 \\ a_{51} & a_{52} & a_{53} & a_{54} & 1 & 0 \\ a_{61} & a_{62} & a_{63} & a_{64} & a_{65} & 1 \end{bmatrix} * \begin{bmatrix} \varepsilon^{iip_t} \\ \varepsilon^{cpi_t} \\ \varepsilon^{g\exp_t} \\ \varepsilon^{m2_t} \\ \varepsilon^{tbr_t} \\ \varepsilon^{asi_t} \end{bmatrix} ------(3)$$

The left hand side of equation (3) consists the vector of residuals in the reduced form, and at the centre is the squared matrix (A_0) of coefficients of lagged variables and structural shocks through column vector (ε).

In line with the restrictions in the model, the variables are ordered based on the following assumptions: Output (IIP) is affected by own innovation but, while it cannot be contemporaneously influenced by any other variable (Kim and Roubini, 2000; Orekoya, 2014), it can contemporaneously affect all other variables. Price level (CPI) responds contemporaneously to output shock. Also, MFP tools (GEXP and M2) respond contemporaneously to output and price shocks (Afonso and Sousa 2011) whereas MP is also contemporaneously affected by FP shock as interaction between the two policies in response to output and price shocks (Melitz, 2000). TB rates are contemporaneously influenced by output, price level, government expenditure (allowing for contemporaneous crowding-out effect) and money supply shock (Sims and Zha, 2006; Elbourne, 2008). Stock market returns are contemporaneously affected by all the variables.

4. DATA SOURCES AND VARIABLE MEASUREMENT

The study employs quarterly time series data of 1990:Q1 to 2016:Q4 from the Central Bank of Nigeria (CBN) publications and updated via its official website: www.cenbank.gov.ng. The starting date corresponds to when Nigeria's financial sector was liberalised and the cut-off date corresponds to when the latest data on all the variables of interest was available. The period also reflects the true post-structural adjustment performance of the study's macroeconomic variables of interest.

In the empirical analysis of this study the logarithmic transformation of the data was taken for the following variables: money supply (M2), consumer price index and government expenditure. Apart from aiding interpretation and compactness of results presentation, this form of transformation tends to reduce heteroskesdasticity significantly (Enders, 2004).

Index of industrial production, (IIP_t) was used as a measure of aggregate output while consumer prices index (CPI_t) stood for price level. Both variables enter the SVAR model as fiscal and monetary policy variables respectively. While government expenditure enters the SVAR model for fiscal policy, money supply (M2) serves as an intermediate target of monetary policy. Treasury bill rate (TBR_t) enters the SVAR model primarily as the

monetary policy control instrument. A cursory experimentation with other forms of interest rates reveals no significant difference between the empirical results emanating from the use of other rates. All share index (ASI) enters the model as the stock market returns indicator.

5. RESULTS AND ANALYSIS

5.1 Testing for Stationary

To resolve the problem of choosing the most appropriate unit root test, Enders (2004) opines that a safe choice is to use two types of unit root tests. The study used the Augmented Dickey–Fuller (ADF) (1981) and the Phillips–Perron (PP) (1988) to perform unit root tests at levels and first difference for the intercept and trend term. The optimum lag was selected by using the Schwartz Information Criterion (SIC) as suggested by Pesaran and Shin (1997).

Table1: Stationary test result.

	ADF (using SIC)		PP (with Newey-West using Bartlett Kernel)		
Variables	Levels Int./Trend	Differenced Int./Trend	Levels Int./Trend	Differenced Int./Trend	Decision
LNCPI	-1.5436	-10.6099	-1.6893	-10.6118	I(1)
ASI	-1.6857	-9.6634	-2.7852	-8.0582	I(1)
LNGEXP	-2.6316	-7.6769	-2.1598	-9.3642	I(1)
TBR	-3.2692	-9.7615	-3.1613	-9.9925	I(1)
LNM2	-2.4486	-10.1381	-2.8215	-10.6218	I(1)
LNRGDP	-1.7328	-4.6803	-6.3997		I(1)/(0)
IIP	-2.2738	-10.7484	-2.2283	-12.6068	I(1)

Notes:
(i) The automatic lag selection box which sets the maximum number of lag at 1 1 is chosen.
(ii) Critical values at:
Level (with intercept and trend) at 1% and 5% for ADF statistic are -4.057528 and -3.457808 while for PP are -4.057528 and -3.457808 respectively.
First difference (with intercept and trend) at 1% and 5% for ADF are -4.063233 and -3.460516 while for PP -4.068290 and -3.462912 respectively.

Aside from LNRGDP which is stationary at levels for the PP test, the result shows in Table 1 that all the variables achieved stationarity only in their first difference.

5.2 Impulse Response

To examine stock market response to the combined shocks emanating from the interactions of monetary and fiscal policy variables, the study analyses the accumulated impulse response of all share index to government expenditure and monetary variables innovations. This study adopts the accumulated impulse response approach based on the notion that fiscal policy tends to have a long term impact that are better shown through this approach (Mountford & Harald, 2009; Blanchard & Perotti, 2002).

5.2.1 Stock Market Response to Money Supply Shock

The result from the SVAR model presented in Figure 1 suggests that both monetary and fiscal policy variables exert significant effect on the Nigerian stock market. The result further reveals that positive shocks emanating from money supply boosted the market by 150 and 190 points in the fourth and eight quarters respectively. This is unsurprising since it is expected that expansionary monetary policy can have positive effects on the stock market.

5.2.2 Stock Market Response to Fiscal Policy Shock

Figure 1, further confirming the effects of both monetary and fiscal policies on the Nigerian stock market, shows a positive one degree shock on government expenditure (GEXP) will elicit a corresponding positive response (1233 and 2509 in the fourth and eighth quarters respectively) in the stock market. It can be observed that an increase in government expenditure, rather than crowding-out investment, will actually complement investment in Nigeria. This unexpected finding can be explained by the tendency for government expenditure on infrastructure to reduce firms' cost of providing them, thus offering the firms additional investment capital.

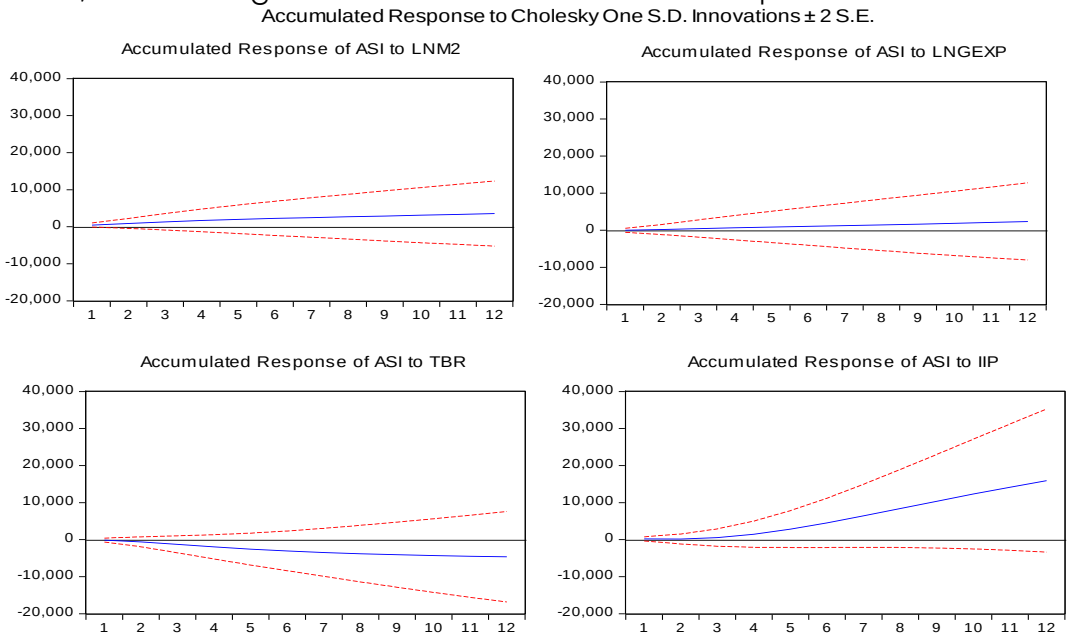

Figure 1: Accumulated Impulse Response

5.2.3 Stock Market Response to TB Rates Shock

Contrary to the response of stock market to a shock emanating from increase in money supply and government expenditure, a positive shock to Treasury bill (TB) rates will elicit a negative response (-1420 and -2925 in the fourth and eighth quarters respectively) from the stock market. This is not unexpected as investors are torn between investing in riskless (Treasury bills) and risky (shares and bonds) assets. Risk averse investors are likely to invest in treasury bills rather than in shares. Figure 1 shows a continuous decline in stock market activities with increase in Treasury bill sales.

5.2.4 Stock Market Response to Output Shock

Figure 1 shows the response of stock market to a one-degree shock in output (IIP). The stock market responds favourably and significantly to a positive shock (1053 and 7916 in the fourth and eighth quarters respectively) in output (income). This might not be unconnected with the relationship between output and stock market as output significantly determines activities in the stock market.

5.3 Forecast Error Variance Decomposition

Table 2 shows the results from forecast error variance decomposition (FEVD) in a SVAR model. It explains the percentage of variance in the equation that is captured by the explanatory variables and its determinants. The study presents the results of the FEVD over four different horizons; short, medium, intermediate and long-term for one quarter, four quarters, seven quarters and twelve quarters respectively.

For government expenditure (GEXP), own shock contemporaneously accounts for almost 77.0% variation in the first quarter with output accounting for the remaining 23.0%. Own and output shocks explanation for innovation decrease subsequently in the preceding quarters while other variables explanation increase. When own explanation for shocks decreased further to 60.6% in the twelfth quarter, output (14.1%) and price level (11.0%) accounting for a significant portion of the innovation; money supply (5.5%) and TB rates (3.6%) offers a seemingly insignificant explanation. This might not be unconnected to the domineering nature of FP over MP in Nigeria. Throughout the quarters, stock market explains an insignificant share of the innovation.

Money supply (M2) accounts significantly (95.9%) for own shocks in the first quarter with price level accounting for just 3% of the variation. The explanation of money supply to innovations in the subsequent quarters decreased steadily while that of price level increased significantly. In the twelfth quarter, own explanation by money supply decreased to 52.8%, price level accounts for almost 21% while government expenditure's share of the innovation rose significantly to 16.2%. This still buttresses the importance of FP in the Nigerian economy. Stock market marginally accounts for 5.8% and 7.3% innovation in the eighth and twelfth quarter respectively.

Table 2: Forecast Error Variance Decomposition

Dependent Variable	Quarter	IIP	LNCPI	LNGEXP	LNM2	TBR	ASI
Fiscal Policy (GEXP)	1	23.0070	0.0000	76.9930	0.0000	0.0000	0.0000
	4	19.3339	1.0755	75.4261	0.6477	3.2226	0.2942
	8	16.6148	7.2888	68.1600	3.6516	3.8675	0.4173
	12	14.0509	14.5119	60.6570	7.1709	3.1760	0.4334

Money Supply (M2)	1	0.2349	2.9857	0.8134	95.9660	0.0000	0.0000
	4	2.1668	16.2703	2.4804	76.8540	0.3484	1.8801
	8	2.7616	18.8924	9.8395	62.2958	0.3593	5.8515
	12	2.4027	21.0533	16.1761	52.7962	0.2383	7.3333
TB rates (TBR)	1	0.6014	0.0337	4.1461	2.4778	92.7411	0.0000
	4	4.1107	0.4993	17.8217	1.5731	75.2944	0.7009
	8	12.4854	0.7253	17.7740	1.2265	62.3632	5.4257
	12	19.4067	0.8087	15.3368	1.0988	53.4348	9.9142
Stock Market (ASI)	1	0.3919	0.0121	0.0063	2.3018	0.2042	97.0837
	4	2.1543	0.3492	0.3485	1.4773	2.4632	93.2075
	8	16.6832	0.3658	0.3826	1.2192	2.5845	78.7646
	12	27.2527	0.6657	0.5198	1.1400	2.2180	68.2039

Also for TB rates (TBR), own shock (92.7%) accounts largely for variation in the first quarter. Own shock reduced all through the remaining quarters while the share of oth er variables increased. Government expenditure's account of the innovation rose from 4.1% to 17.8% in the first and fourth quarter respectively but declined to 15.3% in the twelfth quarter. However, both output and stock market explanations of the innovations rose from 12.4% to 19.4% and 5.4% to 9.9% in the eighth and twelfth quarter respectively.

After the first and fourth quarter when own shock predominantly accounts for 97.1% and 93.2% of the innovations to stock market; only output accounts for significant innovations in the eighth (16.6%) and twelfth (27.3%) quarter respectively aside from own shocks of 78.7% and 68.2% in the same period.

5.4 Robustness Check

We conduct a robustness check to confirm whether the aggregate output (national income) variable adopted in this model is important or not. To this end, we adopt real gross domestic product in the forecast error variance decomposition as an alternate to index of industrial production.

A cursory look at Table 3 reveals that, apart from the striking contrast in the magnitude and size of the figures under RGDP, there is no significant difference in the trend of the result obtained when we replaced index of industrial production with real gross domestic product.

Table 3: Forecast Error Variance Decomposition (alternate IIP with RGDP)

Dependent Variable	**Quarter**	**LNRGDP**	**LNCPI**	**LNGEXP**	**LNM2**	**TBR**	**ASI**
Fiscal Policy (GEXP)	1	1.399	0.0336	98.5674	0	0	0
	4	0.6194	1.013	93.636	0.4115	4.0853	0.2348
	8	1.0258	6.4057	84.5780	2.9400	4.7226	0.3279
	12	1.9012	12.5612	75.6893	5.6207	3.8872	0.3404
Money Supply(M2)	1	0.1787	2.189	0.5228	97.1095	0	0
	4	7.8441	15.7803	3.9349	70.495	0.0359	1.9098
	8	10.6335	18.0069	13.4577	51.9266	0.0318	5.9435
	12	11.2192	18.7162	21.2279	41.7753	0.0194	7.0421
TB rates (TBR)	1	0.3797	0.0133	4.7734	1.5852	93.2486	0
	4	1.4873	0.3978	18.7322	0.9507	77.7604	0.6717
	8	1.3889	0.8114	21.2803	0.8220	70.1251	5.5723
	12	1.8480	0.9298	20.2073	0.7946	65.4023	10.8180
Stock Market (ASI)	1	0.0105	0.0001	0.2768	1.4659	0.3119	97.9348
	4	2.6503	0.5124	0.0842	0.3113	3.9521	92.4898
	8	6.3663	0.7897	0.2113	0.2474	4.6721	87.7132
	12	7.1754	0.7289	0.4896	0.3651	4.4249	86.8161

6. CONCLUSION AND RECOMMENDATIONS

Previous studies have examined the reactions of stock market to variations in monetary and fiscal policy. Such studies treated in isolation, rather than jointly, the effects of both policies on stock market. This study adopts the structural VAR model, on time series data from 1990:Q1 to 2016:Q4, to investigate the impact of both policies on the market. The result suggests that both monetary and fiscal policies affect stock market. It also shows that the interaction between both policies is important in explaining developments in the stock market. From the impulse response, we discover that an increase in government expenditure, rather than crowding-out investment, tends to complement investment in Nigeria while a boost in stock market activities offers investors with a mixture of returns-yielding assets in their portfolio rather than holding liquid cash. The results also showed that a positive shock on Treasury bill (TB) rates elicits a negative response from the stock market suggesting that investors are torn between investing in riskless (Treasury bills) and risky (shares and bonds) assets. From these findings, the study recommends that business analyst and investors reviewing the stock market performance in relationship to macroeconomic policies should consider both monetary and fiscal policies jointly and not separately.

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