International Journal of Development and Economic Sustainability

Vol.6, No.4, pp. 29-50, September 2018

Published by European Centre for Research Training and Development UK (www.eajournals.org)

IMPACT OF MONETARY POLICY ON STOCK MARKET DEVELOPMENT: IMPLICATIONS FOR THE NIGERIAN ECONOMY

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ABSTRACT: *The unsustainable and decreasing contribution of the Nigeria stock market to economic growth and development is the rationale for this study. Previous studies were unable to fully address the core developmental problems of the stock market in terms of its contribution to economic growth. These studies focused on how the monetary authorities can stabilize the stock market and reduce its volatility but ignored issues bordering on the contribution of the stock market to economic growth, which of course is the essence of any stock market and as such characterize its development. Consequently, the objective of this study is to investigate the impact of monetary policy on the development of the stock market in Nigeria. The study period covered from 1981 to 2015. Cointegration and vector error correction modelling (VECM) were employed for the analysis. The cointegration test indicates that there exist long run equilibrium relationship among the variables of the model. VECM result indicated that monetary policy, through the growth rate of money supply has impacted positively and significantly on the development of the stock market in Nigeria. Also, findings further indicated that prime lending rate has had a negative impact on the development of the stock market in Nigeria. The study recommended among others, that the Central Bank of Nigeria (CBN) should use its growth rate of money supply to further boost the development of the stock market but must however be mindful of the channeling of the increase in money supply in order to curtail the possible negative impact of inflation.*

KEYWORDS: Deposit Money Banks, Economic Growth Monetary Policy, Stock Market Development

INTRODUCTION

A stock market is an institutional arrangement that facilitates the sale of stocks, which are equity investments (also referred to as capital). Because of its indispensable role in capital mobilization and allocation towards the enhancement of economic growth, the stock market is often referred to as the engine of economic growth. Consequently, the growing importance of stock market around the world has reinforced the belief that finance is an important ingredient of economic growth and development (Nowbutsing and Odit, 2009). Development of the stock market by fostering financial development and financial integration, will promote economic growth through improving the efficiency of capital allocation and allowing for better risk sharing (Laeven, 2014). A developed stock market provides a lower cost of equity capital for firms and allow individuals to effectively price and hedge risk (Aduda, Masila, & Onsongo, 2012). As pointed out by Mishkin (2007), a functional financial market is a key factor in promoting sustainable economic growth, while poorly performing financial markets is one reason why many countries in the world remain desperately poor

As a result of the relationship between stock market development and the economy, it is very vital that the stock market performs efficiently and effectively because poor performance

ISSN: 2053-2199 (Print), ISSN: 2053-2202(Online)

disrupts economic activities; the downturn in the level of economic activities during the global financial crisis of 2008 is a clear indication of this. This is because the stock market is not just a primary source of income and retirement savings to many, but also an engine of growth through its indispensable role in capital accumulation. Development of the stock market can have a major impact on the whole economy as it influences real activities such as savings, consumption, investment, level of employment, export, etc. Moreover, the development of the stock market is seen as critical for government to finance large fiscal deficits without having to suffer financial repression or resort to foreign borrowing with exchange rate risk. A developed stock market also facilitates the sterilization of large capital inflows (Turner, 2002).

The promotion and maintenance of monetary stability, a sound and efficient financial system in Nigeria is the core function of the Central Bank of Nigeria (CBN). The stock market is a component of the financial system and by implication, this study is basically intended to empirically investigate and determine the extent to which the monetary authority in Nigeria (CBN) has been able to achieve one of its statutory mandates; the development of the stock market as entrenched in the act that established the bank. Monetary policy of any economy refers to measures used by the monetary authority to control money supply and credit conditions in the economy. Monetary policy and its resultant effects on essential economic activities is conventionally recognized and given special consideration by economists and policy makers. Key macroeconomic indicators such as investment, general price level, employment, etc. are influenced by monetary policy through policy instruments of variation in money supply and the cost of credit (interest rate). Increase in money supply, for instance, increases the level of investment in the economy and this has long run effect on the development of the stock market as it will enhance the contribution of the stock market to economic growth and development

Globally, the concern about the interaction between monetary policy and the stock market has been on the increase since the collapse of major stock market boom of 2000 and 2007 (Yoshino, Hesary, Ali, & Ahmad, 2014). The stock market crash of 2008 resulted in failure of key businesses, decline in consumer wealth and downturn in economic activities which led to the great recession of 2008 and contributed to the European sovereign-debt crisis. Consequently, it is considered to be the worst financial crisis since the (great) depression of the 1930s (Eigner, Peter, Umlauft, & Thomas, 2015; Temin & Peter, 2010).

Prior to 2003, the Nigeria stock market contributed less to economic growth, with market capitalization ratio having a very slow (though steady) growth and total value traded maintaining an extremely low rate (CBN, 2015). Figure 1 shows that from 2003 to 2006, there was improvement in stock market capitalization ratio. While from 2006 to early 2008, there was increase in the contribution of the stock market to economic growth as both market capitalization ratio and total value traded ratio increased during this period. From 2009 till date, the contribution of the stock market to economic growth has been low and unsustainable (CBN, 2015). This problem is more severe with the liquidity of the stock market as the ratio of total value traded to GDP (TVTR) was approximately 1% as at 2015. Though the ratio of market capitalization recorded a slight improvement from 2012 to 2013, there was a sharp decline from 2013 to 2014.

ISSN: 2053-2199 (Print), ISSN: 2053-2202(Online)

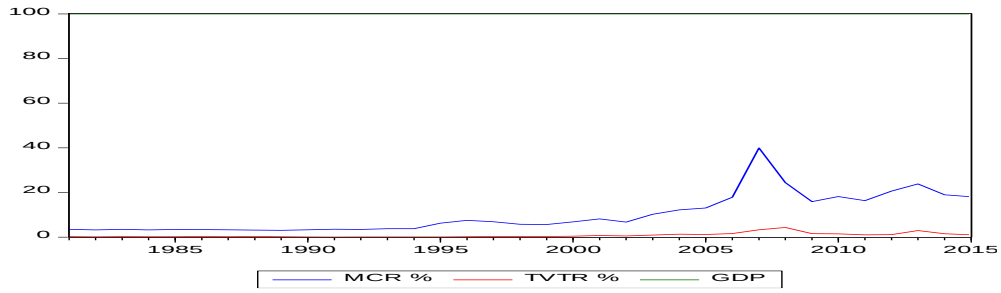

Figure 1: Trend Analysis of the Contribution of the Nigeria stock market to economic growth.

Source: CBN (2015)

The development of the Nigeria stock market is an issue that requires urgent attention and as such must not be through reforms alone. The CBN can aim at its statutory function of enhancing the growth and development of the stock market in its regulation of the economy. In this regard, the following research questions have been formulated to guide this study: what is the impact of CBN's regulated money supply, interest rate, exchange rate and inflation rate on the development of the stock market in Nigeria? In order to provide answers to these questions, this paper is structured thus: section one has introdued the study, section two looks into the review of related literature, section three explores the methodology, section four reports results and analysis, while section five gives the conclusion of the study.

THE LITERATURE

Stock Market Development

The development of the stock market is the efficiency of the market in mobilizing and allocating capital towards the attainment of a high level of economic growth and development. A developed stock market is a market that is sufficiently large and liquid, possessing a non-concentrated market capitalization and demonstrating adequate linkage to the performance of the real economic sector (Kamal, 2013). Despite the number of studies on the stock markets, there is no single criterion that can be used to measure stock market development. Using a variety of indicators provide a more accurate depiction of stock market development as it is a complex and multi-faceted concept. However, for the purpose of this study, the ratio of stock market size and liquidity to economic growth was used to proxy the development of the stock market.

Basic Theories

Modern portfolio theory (MPT), postulated by Harry Markowitz in 1952 maintains that through diversification, risk associated with investments can be minimised in order to maxinise returns (see Elton & Gruber, 1997; Malkiel, 2003). However, the capital asset pricing model aegued that risk cannot be reduced to zero through diversification. Rather, it can be forecasted and factored into investment decisions in order to maximise returns. This can be explained by categorizing risk into two; unsystematic and systematic risk. While unsystematic risks are risks associated with a particular firm and as such can be minimised through diversification,.systematic risks are associated with economic conditions and cannot be

ISSN: 2053-2199 (Print), ISSN: 2053-2202(Online)

minimised through diversification. Accordingly, by taking more risk, returns can be maximised (see Elbannan, 2015; Fama & French, 2004). These two theories are very relevant in explaining stock market development. Because, as investors are able to calculate risk, they become less risk averse and invest in varieties of stocks which in turn increase the level of activities in the stock market and boosts its contribution to economic growth and development.

Empirical Literature

In addressing the problems of the stock market development from the monetary perspective, previous researchers have laid emphasis on how monetary policy affects the stability of the stock market. The basic idea behind these studies is that stability of the stock market is a perfect reflection of economic stability and as such, that a relatively stable market can be said to be developed. While some approached it from the perspective of how monetary policy affects stock returns in Nigeria, others looked at how it affects stock prices. Furthermore, among scholars that focused on stock market returns, there is no common consensus in their empirical findings. Some findings indicate that monetary policy impacted significantly on stock market returns in Nigeria (Ahmed and Igbinovia, 2013; Aliyu, 2013; Octavio, Martin, & George, 2011); and Godwin 2010), but that of Onyeke (2016) disagreed with previous studies, while maintaining that monetary policy had no impact on stock returns in Nigeria. Empirical findings also differed among researchers that studied the impact of monetary policy on stock prices. While some scholars affirmed its significant impact on stock prices (Yosino, 2014; Babaak, Navid, Shabriar, & Rozar, 2012 ; Aliyu, 2009), others confirm that monetary policy has no significant impact on stock prices (Abaenewe & Ndugbu, 2012; Hasan & Javed, 2009).

Research Gap

The controversial findings of previous studies is more than enough justification for a study of this kind. However, rather than basing the justification of this study on the controversial findings of previous researchers, this study targeted at achieving a new feat. The research is an addition to the existing body of knowledge on the essence of the stock market and the role of the monetary authorities on the development of the stock market. The study shifted emphasis from volatility of the stock market to the contribution of the stock market to the economy as a measure of its level of development. Previous researchers focused on the need for the monetary authorities to work towards the stability of the market, with the view that the stability of the stock market is a perfect reflection of economic stability and as such characterizes its development. While this study focuses on how the monetary authorities can enhance the contribution of the stock market to economic growth and development, with the alternative view that the development of the stock market is best assessed in terms of its contribution to economic growth.

RESEARCH METHOD

Theoretical Framework

Theoretical postulations maintain that interest rate is the most influential monetary policy tool; the important issue that arises when measuring the effect of monetary policy on stock markets is its correct identification (Nwakoby & Alajekwu, 2016). The theoretical framework adopted by this study is the discounted cash flow model. The model is a method of valuing a project, company, or asset using the concepts of the time value of money. Here, all future cash flows

ISSN: 2053-2199 (Print), ISSN: 2053-2202(Online)

are estimated and discounted by using cost of capital to give their present values (PVs). It offers useful insights on stock market effects of monetary policy changes. According to this widely used model, the stock price (SPt) is the present value of expected future dividends (Dt+j). As developed by Christos and Alexandros (2006), for simplicity, it is assumed that there are two alternative investment opportunities over a one period horizon: either a stock with an expected gross return of Et(SPt+Dt+j)/ SPt or a risk-free bond with constant nominal gross return of 1+R. Arbitrary opportunities imply that for investors to be indifferent, both alternative must yield the same expected return: Et(SPt+Dt+j)/ SPt=1+R. Under the assumption of constant discount rate (R), it can be shown that;

$$SPt = Et\left[\sum_{j=I}^{e}\left(\frac{I}{I+R}\right)^{j} Dt + j + \sum t\left[\left(\frac{I}{I+R}\right)^{e} SPt + k\right]\right] \quad 1$$

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

$$Lim E\,t\left[\left(\frac{I}{I+R}\right)^{e} SPt + k\right] = O \quad 2$$

Thus, we obtain the familiar version of the present value model

$$SPt = Et\left[\sum_{j=I}^{e}\left(\frac{I}{I+R}\right)^{j} Dt + j\right] \quad 3$$

Equation 3 indicates that a change in monetary policy can affect stock returns in a dual manner. First, there is a direct effect on stock returns by altering the discount rate used by market participants. This will in turn improve the level of market capitalization. Tighter monetary policy leads to an increase in the rate at which firms' future cash flows are capitalized causing stock prices to decline. The underlying assumptions are that, first, the discount factors used by market participants are generally linked to market rates of interest and second, the central bank is able to influence market interest rates. Second, monetary policy changes exert an indirect effect on the firms' stock value by altering expected future cash flows. Monetary policy easing is expected to increase the overall level of economic activity and the stock price responds in a positive manner (expecting higher cash flows in the future). Hence, this channel generally assumes the existence of a link between monetary policy and the aggregate real economy. As Patelis (1997) argued, stocks are claims on future economic output, so if monetary policy has real economic effects then stock markets should be influenced by monetary conditions.

From Equation 3, stock prices and dividends are functions of interest rate. Since investment in the stock market is mainly influenced by the price of stock and the dividends earned, Stock Market Development (SMD) can be expressed as a function of interest rate. Thus;

$$SMD = f(R) \quad 4$$

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Model Specification

From the model presented in equation 4, two empirical equations were constructed to estimate the impact of of monetary policy indicators on stock market development. Stock market size (ratio of market capitalization to GDP), and market liquidity (ratio of total value traded to GDP) were used to capture stock market development. Using the ratio of market capitalization and total value traded to GDP enables us to capture the contributions of the stock market to economic growth and this is basically what stock market development is all about (Kamal, 2013). The main advantage of using MCR as a measure of stock market development is that it is positively correlated with the ability of the market to mobilize capital and diversify risk. Also, it is presumed to include companies' past retained profit and future growth prospect so that a higer ratio to GDP can signify growth prospect as well as stock market development. (Levine and Zervos, 1998b). Other than market size, liquidity is another measure of stock market development. It is the ability to easily buy and sell securities. Since liquidity allows investors to alter their portfolio quickly and easily, it makes investment less risky and facilitates longer term and more profitable investment. Liquidity is an important attribute of stock market development because theoretically a more liquid market makes for better allocation of capital and enhances prospects of economic growth. Given that interest rate goes hand-in-glove with money supply, Equation 3 can be expanded to incorporate money supply. Thus:

$$MCR = f(INTR, M2R) \quad 5$$

Where MCR is stock market size, INTR is the interest rate and M2R captures money supply.

The functions of the CBN is categorized into two: growth function and stabilization function. Economic stability can be measured with the degree of stability of prices of goods and services in the domestic economy as well as the degree of stability of the local currency (naira). As such, equation 5 can be further expanded to incorporate inflation rate and exchange rate in order to capture the stabilization function of the CBN. Thus the first empirical model is given as:

$$MCR = a0 + a1M2R + a2INTR + a3EXR + a4INFR + U \quad 6$$

Where: MCR is the ratio of market capitalization to GDP, M2R is growth rate of broad money supply (M_2), INTR is interest rate (prime lending rate), EX R is exchange rate, IINFR is inflation rate, U is the error term, a0 = intercept and a1, a2, a3, and a4 are coefficients of the variables.

The second empirical captures the possible impact of monetary policy on market liquidity, which is an important aspect of stock market development and its given as:

$$TV = b0 + b1M2R + b2INTR + b3EXR + b4INFR + V \quad 7$$

Where TV is the ratio of Total Value Traded to GDP and V is the error term.

The Johansen cointegration test was used to check for long term equilibrium relationships among the variables of the models. An over-parameterized error correction modelling was considered for the identification of the main dynamic pattern of the models and to ensure that the dynamics of the models are not constrained by a too short lag length, after which a parsimonious model was estimated. Appropriate lag length was chosen using Schwartz criteria.

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Model Justification and a priori expectation

Towards the achievement of its objectives, the monetary authority in Nigeria (CBN) uses quantitative and/or qualitative monetary policy instruments. The use of any or all of these instruments results to variation in money supply (M_2) and interest rate and these are captured in both equations 6 and 7.

This study adopts broad money supply (M_2) as a proxy money supply because it is the most acceptable definition of money supply in Nigeria (Afolabi, 1999). The coefficient of money supply (a_1) is expected to be positively signed because the greater the money supply, the greater the level of economic activities and as such the greater the level of investment in the stock market. The prime lending rate is a proxy for interest rate because the study is more directly concerned with the level of activities in the stock market i.e investment and according to Mishkin (2007), banks are the financial intermediaries which an average person interacts with most frequently. The coefficient of prime lending rate (a_2) is expected to be negatively signed because of the inverse relationship between interest rate and stock market activities through investment. It is important to note that the use of money supply and interest rate as part of the independent variables of this analysis captures the growth function of the CBN.

It is well accepted in economic discourse that the CBN aims primarily at price stabilization. Price stabilization is an open-ended concept and it is only a shallow knowledge of the concept that could lead to the false perception that it is all about the stabilization of prices of commodities in the economy. Currency is also a commodity and just like every other commodity, it has its own price (exchange rate). As such, for the purpose of this study, the price stabilization function of the CBN is decomposed into two; inflation control and exchange rate control and these two are well captured in the model using annual inflation rate and the exchange rate of naira to USA dollar. The coefficient of exchange rate (a_3) is expected to be positively signed because depreciation makes import costlier while export become cheaper and this encourage greater investment through the stock market. The coefficient of inflation rate (a_4) is expected to be negatively signed because inflation discourages people from saving as it erodes monetary values. This affects investment negatively and as such reduces people's participation in the stock market.

Data Sources and Estimation Software

All data used for estimation were sourced from CBN statistical bulletin on various issues and World bank development indicators for Nigeria and all through this paper, we used E-views 9.5 for data analysis.

Result Presentation And Analysis

A unit root test was carried to check the stationarity of the variables of the model using Augmented Dicky Fuller (ADF) and Philips Peron (PP) tests. The result is as shown on Table 1.

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Table 1: Result of Stationarity Test

Variables	ADF	Philips-Peron (PP)	Decision
M2R D(M2R)	-3.643** -4.840**	-2.356 -6.898**	I(1)
PLR D(PLR)	-3.375** -9.127**	-3.334** -9.255**	I(0)/I(1)
INF D(INF)	-2.740 -5.958**	-2.613 -8.581**	I(1)
EXR D(EXR)	0.318 -5.212**	0.324 -5.210**	I(1)
MCR D(MCR)	-1.781 -5.799**	-1.745 -8.522**	I(1)
TV D(TV)	-2.251 -5.386**	-2.183 -9.521**	I(1)

Note: (i) D is the first difference operator. (ii) Critical Values: ADF at 1%=3.654, at 5%=2.957, PP at 1%=3.646, at 5%=2.954. (iii) *(**) means significant at 1% and (5%) respectively.

Except for prime lending rate (PLR) which was stationary at level and at first difference, other variables became stationary after first difference. This result permits the conduct of cointegration test on the variables.

The trace statistics of the cointegration test indicates one cointegrating equation; this is an indication of existing long run equilibrium relationships among all the variables and it is on Table 2.

Table 2: Summary of Cointegrated Test

Unrestricted Cointegration Rank Test (Trace)								
	Model One				**Model Two**			
Hypothesized NO of CE(s)	Eigen-Value	Trace Statistic	0.05 Critical Value	Prob	Eigen-Value	Trace Statistic	0.05 Critical Value	Prob
None	0.691	79.397	69.819	0.007	0.614	76.520	69.819	0.013
At most 1	0.439	40.643	47.858	0.200	0.518	45.114	47.856	0.089
At most 2	0.351	21.566	29.797	0.323	0.330	21.003	29.797	0.356
At most 3	0.193	7.309	15.495	0.542	0.210	7.793	15.475	0.488
At most 4	0.008	0.248	3.842	0.619	0.001	0.037	3.842	0.847
Unrestricted Cointegration Rank Test (Maximum Eigrn Value)								
	Model One				**Model Two**			

ISSN: 2053-2199 (Print), ISSN: 2053-2202(Online)

Hypothesized NO of CE(s)	Eigen-Value	Trace Statistic	0.05 Critical Value	Prob	Eigen-Value	Trace Statistic	0.05 Critical Value	Prob
None	0.691	38.754	33.877	0.012	0.614	31.406	33.877	0.096
At most 1	0.439	19.077	27.583	0.409	0.518	24.081	27.584	0.132
At most 2	0.351	14.257	21.132	0.344	0.331	13.240	21.132	0.430
At most 3	0.193	7.062	14.265	0.482	0.210	7.756	14.265	0.404
At most 4	0.008	0.248	3.842	0.619	0.001	0.037	3.842	0.817

These results permit the estimation of a vector error correction model, we adopt the Hydra-type general to specific VECM. Consequently, a parsimonious ECM was estimated from an over-parameterized ECM for the two equations as shown ion table 3 and 4.

Table 3: Parsimonious ECM for Equation 6

Dependent Variable: D(MCR)

Variable	Coefficient	Std. Error	t-Statistic	Prob.
D(M2R)	0.198173	0.046672	4.246117	0.0002
D(PLR)	-0.269291	0.161425	-1.668205	0.1068
D(EXR(-1))	-0.114332	0.057038	-2.004495	0.0551
D(INF)	-0.068844	0.042880	-1.605511	0.1200
ECM(-1)	-0.807991	0.164742	-4.904586	0.0000
C	1.135103	0.718913	1.578915	0.1260

R^2=59% and D.W=2.21

Table 3: Parsimonious ECM for Equation 7

Dependent Variable: D(TV)

Variable	Coefficient	Std. Error	t-Statistic	Prob.
D(PLR(-1))	0.024440	0.022302	1.095888	0.2828
D(M2R)	0.016660	0.006569	2.536078	0.0173
D(EXR)	-0.014128	0.006610	-2.137421	0.0418
D(INF)	-0.005619	0.005945	-0.945042	0.3530
ECM(-1)	-0.704392	0.163886	-4.298060	0.0002
C	0.120375	0.098819	1.218135	0.2337

R^2=58% and D.W=2.21

ISSN: 2053-2199 (Print), ISSN: 2053-2202(Online)

From the overparameterized ECM of the first model (see Appendix 1.3), the current value of the growth rate in broad money supply (M_2R) is positive and statistically significant. The speed of adjustment (ECM) is well signed and significant, indicating a satisfactory speed of adjustment. Other variables were not statistically significant. The result further indicated that changes in the independent variables together account for 59% change in the depended variable.

On Table 3, growth rate of broad money supply (M2R) and one period lag of exchange rate (EXR(-1)) are statistically significant while prime lending rate (PLR) and inflation rate (INF) are not. The ECM is also statistically significant and well signed. This implies a satisfactory rate of adjustment from disequilibrium. The signs of the coefficients of the variables except that of exchange rate (EXR) conform with apriori expectation. Against expectation, exchange rate (EXR) is negatively signed. The result further indicate that changes in the independent variables together account for about 59% change in the dependent variable.

From the overparameterized ECM of equation 7 (see Appendix 2.3), only the growth rate of broad money supply (M_2R) and ECM are also statistically significant. The ECM is also well signed and implies a satisfactory rate of adjustment. The significant variables and/ or the less insignificant variables were used for the Parsimonious ECM and the result is as shown above in Table 4.

From Table 4, growth rate of broad money supply (M_2R), exchange rate (EXR) and ECM are significant while PLR and INF were not significant. Also, against apriori expectation, exchange rate (EXR) is negative while PLR is positive. The ECM is well signed and indicates satisfactory speed of adjustment of about 89%. Changes in the independent variables account for 58% change in the dependent variable.

Residual diagnostic test was also carried out on both equation and the result indicates that both equation had no serial correlation and are not heteroskedastic (see Appendix 1.4, 1.5, 2.4, and 2.5). The two error terms are normally distributed (see Appendix 1.6 and 2.6). Chow stability test indicated that both equations are stable and are free from errors of misspecification (see Appendix 1.7 and 2.6).

The result of the variance decomposition of Equation 6 (see Appendix 1.9a) indicated that in the first model, except for money supply, own shocks dominates. It ranges from 81% to 100% for market capitalization ratio, 13% to 37% for money supply, 71% to 95% for prime lending rate, 74% to 97% for inflation and 51% to 93% for exchange rate. The result of the impulse response of equation 6 (see Appendix 1.9b) corroborates the result of the variance decomposition. The trend indicated that, in the future, stock market capitalization ratio will respond more positively to own shock and shock in the growth rate of money supply but negatively to increase in prime lending rate

Variance decomposition of the equation 7 (see Appendix 2.8a) indicates that own shocks dominates. It ranges from about 53% to 100% for total value traded, 37% to 61% for money supply, 60% to 90% for prime lending rate, 72% to 94% for inflation and 67% to 82% for exchange rate. From the result, shock in money supply explained about 40% change in total value traded. Impulse response analysis of equation 7 (see Appendix 2.8b) indicated that, in the future, the ratio of total value traded will respond more positively to own shock and shock in the growth rate of money supply but less to shock in inflation rate and prime lending rate

ISSN: 2053-2199 (Print), ISSN: 2053-2202(Online)

DISCUSSION OF MAJOR FINDINGS

Obviously, increase in growth rate of money supply positively and significantly impact on stock market development in Nigeria. Thus an increase in the growth rate of money supply is encouraged as this has the tendency of increasing not only the level of market capitalization, but also the total value traded. With increase in market capitalization and total value traded, firms are able to raise more funds from the stock market for expansion, and individuals who invest in the market can easily transfer their securities in order to take advantage of speculation. This makes investment in the market more attractive, thus leading to greater activities in the stock market which will culminate to greater level of economic growth.

The findings of the study indicate that the credit conditions in the banking sector has not been favorable for domestic investment in Nigeria. Prime lending rate has impacted negatively (though not significantly) on stock market development in Nigeria. This could be as a result of: the profiteering agenda of the deposit money banks in the country, non-availability of alternative sources of funds in the country, worse lending conditions in the parallel markets or probably as a result of the CBN's inability to curtail the excesses of these banks. The lending trend if not checked, will lower stock market development as firms become unable to raise required capital for capacity expansion. This is undesirable as it will ultimately bounce back on the economy and as such impede the growth rate of the Nigerian economy.

These findings are in conformity with the empirical findings of Yoshino et al (2014), Babaak et al (2012), and with the theoretical framework of this study which established that monetary policy easing increases the overall level of economic activity such that increase in money supply propels a general increase in the level of aggregate demand. The increase in demand further translates to the stock market through increase in the level of investment. This is because increase in money supply makes more funds available for investment in stocks and also makes alternative financial investment such as bonds unattractive. The increase in money supply and its resulting decrease in interest rates make stock and equity more attractive investment. When investors obtain a low rate of return through lending, they tend to allocate more money to investment in stocks. This has every tendency of not just to increase the size of the stock market but also its liquidity, thus enhancing its contribution to economic growth and developmentt.

Theoretically, a currency depreciation encourages industrialization through increased capital mobilization and allocation in the stock market. The value of naira is both affected and reflected in the interest rates, and interest rates have direct impact on the level of activities in the stock market. Therefore, exchange rates affect stock markets and can be used to make predictions about the market. A weak naira suggests that consumers are likely patronize locally produced goods leading to economic expansion. Consequently more businesses will build up capital stock, expand their production and continue to borrow from the financial sector. In the short run, cheap money suggests the stock market will show price rises across board. However, the result indicates that in the case of Nigeria, theory has been violated in this regard as the continued loss of value of naira has negatively and significantly impact on stock market development. Hasan and Javed (2009), as well as Onyeke (2016) also had similar findings in their research.. Probably, this is as a result of import demand inelasticity and expectedly, will impede the level of economic growth as the bulk of the nation's resources, which would have been used for development strides is lost through importation.

The result further indicates that the level of economic instability in the country has worked against the development of the stock market in Nigeria. Inflation has impacted negatively on

ISSN: 2053-2199 (Print), ISSN: 2053-2202(Online)

stock market development in Nigeria (as indicated from the analyses of both equations 6 and 7). This could be as a result of the loss in value of money caused by inflation. Thus, Nigeria faces a policy dilemma as increase in money supply goes hand-in-glove with increase in inflation. However this can be resolved by ensuring that the excess funds are channeled to productive activities such that the increased production crowds out the possible influences of inflation. Restriction or outright ban on the importation of consumer goods is advised as their continual inflow will hinder the development of the stock market

Implications for Research and Practice

Previous studies emphasized on the impact of monetary policy on the volatility of the stock market, with the notion that a less volatile stock market is a perfect approximate of a developed stock market. This study shifted emphasis from stock market stability to the contribution of the stock market to economic growth by examining how the monetary authority has affected the contribution of the stock market to economic growth. Thereby creating awareness in the minds of subsequent researchers that in the analysis of stock market development, emphasis should be on the contribution of the market to economic growth. This is because, a developed stock market is one that is able to meet the needs for which it was established, and the principal need for the establishment of any stock market is for capital mobilization and allocation for greater economic growth. Also, in

This study also contributes to existing knowledge by assessing the impact of monetary policy on both the primary and secondary segments of the stock market. Market capitalization ratio was used to capture activities in the primary market while the total value ratio was used to capture the activities in the secondary market. And as pointed out by Kamal (2013), the concept of stock market development can best be captured with the use of more than one indicator. This study is holistic and distinct as it captured market size, market liquidity and the linkage of the stock market to the performance of real economic sectors.

In evolving an efficient and reliable financial system through the application of appropriate monetary policy instruments and systemic surveillance, the monetary authority must work towards improving the contribution of the stock market to economic growth through expansionary monetary policy. Monetary policy must also be directed towards the development of both the primary and secondary segments of the stock market. With this, capital mobilization and allocation will be enhanced and investors will be able to transfer their shares in order to take advantage of speculations in the market.

CONCLUSION AND RECOMMENDATIONS

This study sets out to examine the impact of monetary policy on stock market development in Nigeria over the period of 1981 to 2015. Cointegration and vector error correction model were employed for data analysis. The cointegration test indicated that there is a long run relationship among the variables. From the parsimonious ECM, the growth rate of broad money supply and the exchange rate have significant impact on the development of the stock market in Nigeria. While the significant impact of the growth rate of broad money supply was positive, that of exchange rate was negative. Prime lending rate and inflation impacted significantly and negatively on stock market development in Nigeria. Diagnostic checks indicated that the models had no problem of serial correlation and are free from heteroscedasticity. Also, the

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stability tests indicated that the parameters were stable and had no problem of mis-specification, an indication that the models can be relied upon for policy making and even forecasting. The study therefore concludes that monetary policy has impacted significantly on stock market development in Nigeria. However, there is need for policies to be put in place in order to further enhance the development of the market. This study thus recommends the following:

The monetary authorities also need to closely monitor the lending activities of commercial banks in order to ensure that credit conditions are investment friendly. This can be achieved by setting maximum range for prime lending rate and establishing strong regulation and enforcement agency to ensure compliance. Also, there should be appropriate sanction for institutions that fail to comply.

Since it is obvious that the fall in the value of naira over the years has not encouraged industrialization and its resultant boost in local production, there is need for embargo on the importation of certain products and if it becomes necessary, outright ban can also be used. With this, the foreign firms may be forced to relocate plants to the country in order to take advantage of the available market in the country. This will lead to industrialization through stock market capitalization and total value traded. Other than this, such embargo/outright ban will serve as morale boost for local producers and investors. Either of these or both will result to higher level of economic growth and development through the stock market. It will also help to raise the value of naira in terms of its competitiveness with other currencies.

There is need for greater effective control of inflation in order to enhance the development of the stock market. Other than selective credit control of money supply as recommended earlier, the CBN needs to explore other measures such as contractionary open market operation to mop-up excess liquidity where and when necessary. The CBN also needs to collaborate with the fiscal authorities in order to ensure that the contractionary monetary policy is not crowded out by an opposing expansionary fiscal policy. Thus, the need for better policy coordination in the economy.

Future Research

There is need for further research on the efficacy and impact of the different monetary policy instruments on stock market development in Nigeria. Thus relaxing the basic assumption of this study; that the CBN is effective and efficient in its operations. Also, researchers should investigate other factors affecting the development of the stock market, the development of the stock market is not only monetary policy propelled as indicated by the R^2 of this research. Some of the possible factors include; market infrastructure, banking sector developemnt, portfolio capital flows etc.

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APENDIX

Appendix 1 (For Equation 6)

VAR Lag Order Selection Criteria

Lag	LogL	LR	FPE	AIC	SC	HQ
0	-630.5877	NA	1.23e+11	39.72423	39.95325	39.80015
1	-543.6760	141.2316*	2.62e+09	35.85475	37.22888*	36.31023*
2	-516.0845	36.21382	2.52e+09	35.69278	38.21201	36.52784
3	-484.9469	31.13758	2.43e+09*	35.30918*	38.97352	36.52381

* indicates lag order selected by the criterion

Overparameterized ECM

Variable	Coefficient	Std. Error	t-Statistic	Prob.
D(M2R)	0.197365	0.057164	3.452599	0.0022
D(M2R(-1))	-0.019720	0.060345	-0.326792	0.7468
D(PLR)	-0.242670	0.242073	-1.002466	0.3265
D(PLR(-1))	0.058571	0.221843	0.264020	0.7941
D(EXR)	-0.038855	0.053420	-0.727351	0.4744
D(EXR(-1))	-0.118917	0.062071	-1.915807	0.0679
D(INF)	-0.060973	0.052617	-1.158804	0.2584
D(INF(-1))	0.002943	0.056653	0.051942	0.9590
ECM(-1)	-0.811979	0.185898	-4.367862	0.0002
C	1.362907	0.819798	1.662490	0.1100

R-squared	0.591558	Mean dependent var	0.449394
Adjusted R-squared	0.431733	S.D. dependent var	5.338841
S.E. of regression	4.024604	Akaike info criterion	5.867778
Sum squared resid	372.5411	Schwarz criterion	6.321265
Log likelihood	-86.81833	Hannan-Quinn criter.	6.020362
F-statistic	3.701283	Durbin-Watson stat	2.244482
Prob(F-statistic)	0.005382		

Heteroskedasticity Test: White

F-statistic	3.010845	Prob. F(20,12)	0.0270
Obs*R-squared	27.51652	Prob. Chi-Square(20)	0.1213
Scaled explained SS	81.23525	Prob. Chi-Square(20)	0.0000

Breusch-Godfrey Serial Correlation LM Test:

F-statistic	0.927004	Prob. F(1,26)	0.3445
Obs*R-squared	1.136077	Prob. Chi-Square(1)	0.2865

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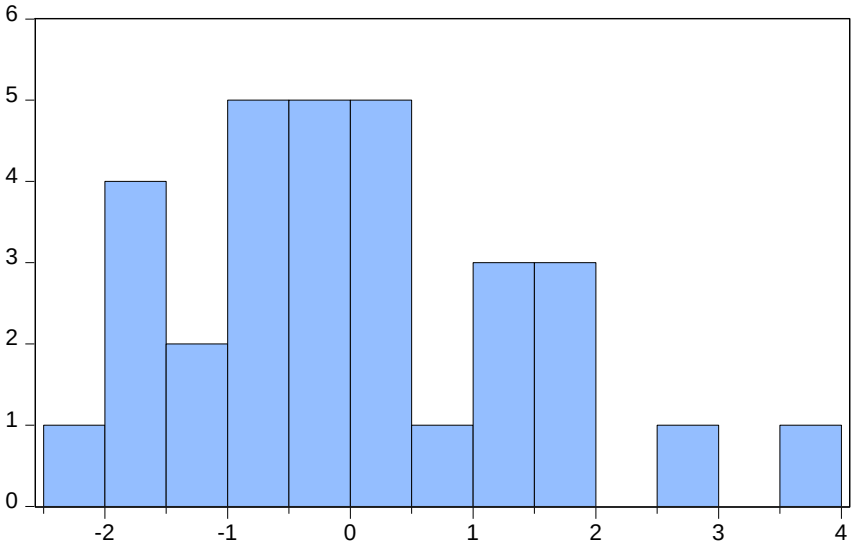
Residual Normality Test



Series: Residuals	
Sample 1983 2015	
Observations 31	
Mean	3.58e-18
Median	-0.142741
Maximum	3.561267
Minimum	-2.031386
Std. Dev.	1.314554
Skewness	0.682622
Kurtosis	3.187094
Jarque-Bera	2.452738
Probability	0.293356

Stability Tests

a) Chow Breakpoint Test: 2008

F-statistic	0.962230	Prob. F(6,21)	0.4739
Log likelihood ratio	8.015230	Prob. Chi-Square(6)	0.2370
Wald Statistic	5.773382	Prob. Chi-Square(6)	0.4490

a) Ramsey RESET Test

	Value	Df	Probability
t-statistic	0.755693	26	0.4566
F-statistic	0.571072	(1, 26)	0.4566
Likelihood ratio	0.716977	1	0.3971

Vector Error Correction Estimates

Cointegrating Eq:	CointEq1
MCR(-1)	1.000000
PLR(-1)	1.357272 (0.24381) [5.56688]
M2R(-1)	-0.326379

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	(0.05716)
	[-5.70959]
INF(-1)	-0.400408
	(0.07294)
	[-5.48954]
EXR(-1)	-0.190624
	(0.01572)
	[-12.1283]
C	-4.815401

Error Correction:	D(MCR)	D(PLR)	D(M2R)	D(INF)	D(EXR)
CointEq1	-0.411860	0.306080	0.969361	0.575075	0.572872
	(0.17701)	(0.10851)	(0.44269)	(0.51013)	(0.45875)
	[-2.32679]	[2.82069]	[2.18969]	[1.12730]	[1.24878]

Variance Decomposition

Variance Decomposition of MCR:						
Period	S.E.	MCR	M2R	PLR	INF	EXR
1	5.304525	100.0000	0.000000	0.000000	0.000000	0.000000
2	7.130482	93.34455	4.727336	0.397383	0.015922	1.514814
3	8.760631	87.99842	5.374324	0.702079	1.470611	4.454564
4	10.21005	82.81517	7.547969	0.773047	2.288133	6.575679
5	11.52466	81.58033	7.744351	0.663595	2.464009	7.547719
6	12.59894	81.45620	7.951535	0.584626	2.285619	7.722019
7	13.56761	81.80329	7.820434	0.536506	2.142218	7.697547
8	14.45725	81.81175	7.881988	0.521416	2.063816	7.721025
9	15.31849	81.66640	7.926934	0.515144	2.060682	7.830845
10	16.14174	81.43381	8.028083	0.507956	2.068576	7.961579

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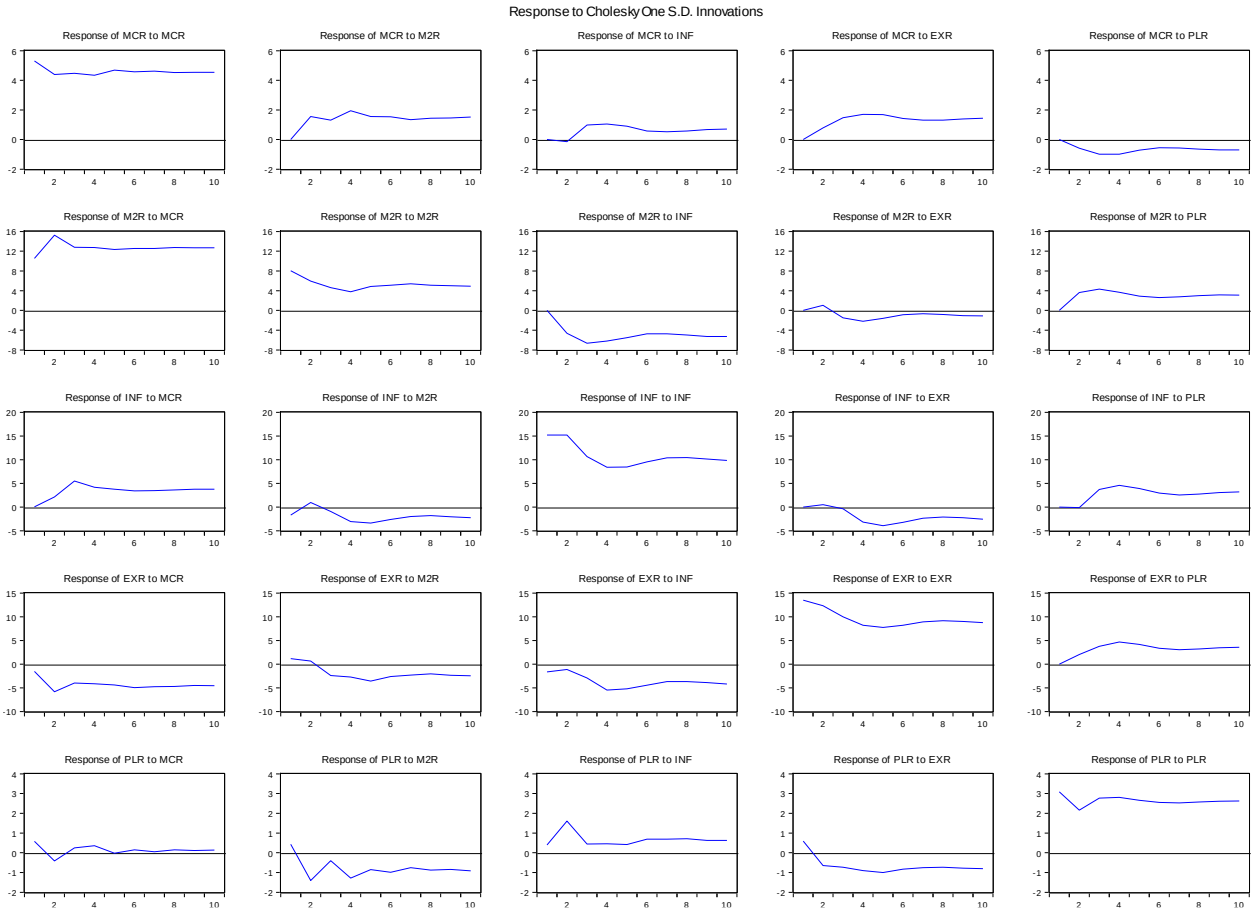
Impulse Response



Appendix 2 (For Equation 7)

VAR Lag Order Selection Criteria

Lag	LogL	LR	FPE	AIC	SC	HQ
0	-565.9451	NA	2.16e+09	35.68407	35.91309	35.75998
1	-479.2213	140.9263*	46706385*	31.82633*	33.20046*	32.28181*
2	-456.0098	30.46499	59092711	31.93812	34.45735	32.77317
3	-430.0644	25.94542	78821964	31.87903	35.54337	33.09365

* indicates lag order selected by the criterion

Overparameterized ECM

Variable	Coefficient	Std. Error	t-Statistic	Prob.
D(PLR)	-0.001249	0.031102	-0.040162	0.9683

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D(PLR(-1))	0.034050	0.029119	1.169337	0.2542
D(M2R)	0.014073	0.007498	1.876942	0.0733
D(M2R(-1))	0.010492	0.007585	1.383317	0.1798
D(EXR)	-0.013384	0.006779	-1.974421	0.0605
D(EXR(-1))	-0.010411	0.007812	-1.332684	0.1957
D(INF)	-0.009715	0.006555	-1.482038	0.1519
D(INF(-1))	-0.003627	0.007203	-0.503567	0.6194
ECM(-1)	-0.805658	0.182477	-4.415109	0.0002
C	0.165356	0.103481	1.597929	0.1237

R-squared	0.660407	Mean dependent var	0.026667
Adjusted R-squared	0.527522	S.D. dependent var	0.745770
S.E. of regression	0.512620	Akaike info criterion	1.746484
Sum squared resid	6.043926	Schwarz criterion	2.199971
Log likelihood	-18.81698	Hannan-Quinn criter.	1.899068
F-statistic	4.969783	Durbin-Watson stat	2.150932
Prob(F-statistic)	0.000899		

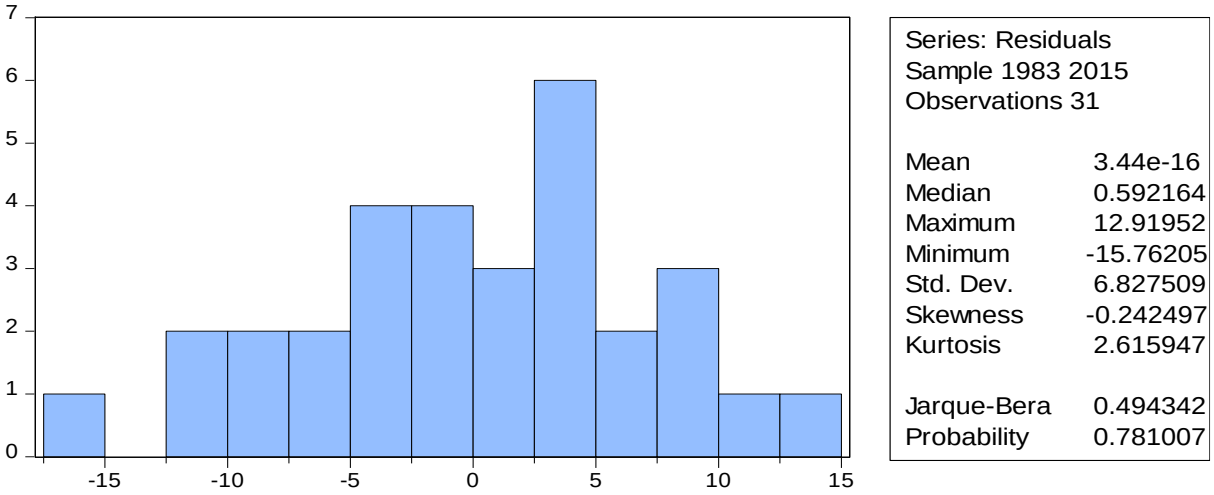
Breusch-Godfrey Serial Correlation LM Test:

F-statistic	0.302835	Prob. F(1,26)	0.5868
Obs*R-squared	0.379943	Prob. Chi-Square(1)	0.5376

Heteroskedasticity Test: White

F-statistic	1.466799	Prob. F(20,12)	0.2504
Obs*R-squared	23.41997	Prob. Chi-Square(20)	0.2686
Scaled explained SS	39.51174	Prob. Chi-Square(20)	0.0058

Residual Normality Test



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Stability Tests

a) Chow Breakpoint Test: 2008

F-statistic	1.675657	Prob. F(6,21)	0.1764
Log likelihood ratio	12.90971	Prob. Chi-Square(6)	0.0445
Wald Statistic	10.05394	Prob. Chi-Square(6)	0.1224

b) Ramsey RESET Test

	Value	df	Probability
t-statistic	0.926338	26	0.3628
F-statistic	0.858102	(1, 26)	0.3628
Likelihood ratio	1.071542	1	0.3006

Vector Error Correction Estimates

Cointegrating Eq:	CointEq1
TV(-1)	1.000000
PLR(-1)	0.150760 (0.03887) [3.87832]
M2R(-1)	-0.043124 (0.00925) [-4.65960]
INF(-1)	-0.040143 (0.01110) [-3.61629]
EXR(-1)	-0.020764 (0.00241) [-8.60951]
C	-0.177729

Error Correction:	D(TV)	D(PLR)	D(M2R)	D(INF)	D(EXR)
CointEq1	-0.536633 (0.15626) [-3.43428]	2.226583 (0.82772) [2.69002]	4.124658 (3.58793) [1.14959]	5.007618 (3.80190) [1.31714]	5.479327 (3.74772) [1.46204]

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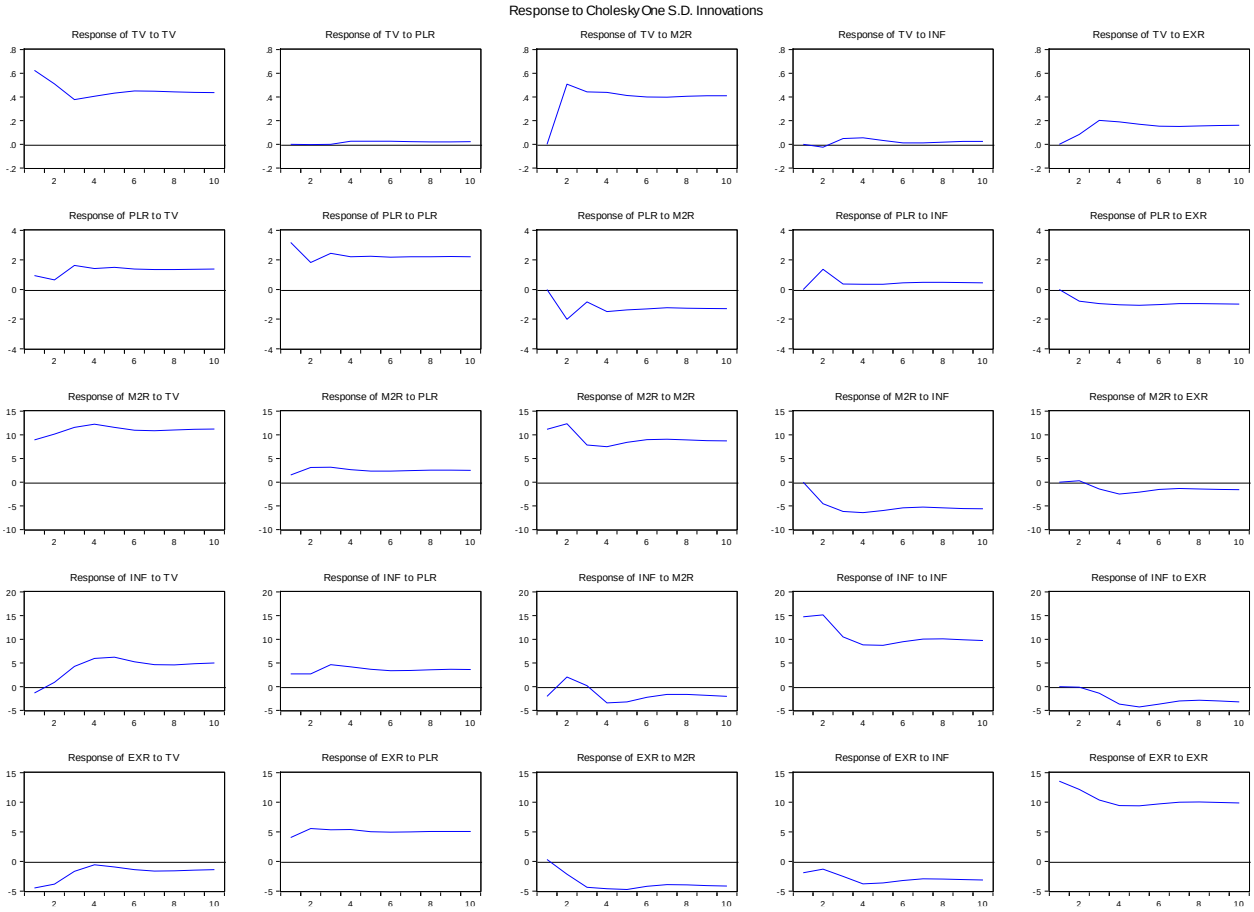
Variance Decomposition

Variance Decomposition of TV:

Period	S.E.	TV	M2R	PLR	INF	EXR
1	0.623808	100.0000	0.000000	0.000000	0.000000	0.000000
2	0.955639	71.04339	27.61729	0.535685	0.066512	0.737127
3	1.136712	61.21583	34.28844	0.653880	0.219999	3.621850
4	1.298811	56.62263	37.56536	0.567462	0.343433	4.901118
5	1.440045	55.08685	38.73429	0.504417	0.327821	5.346626
6	1.568565	54.66894	39.14168	0.454830	0.281784	5.452764
7	1.685613	54.40743	39.40881	0.429930	0.249282	5.504550
8	1.795660	53.99061	39.77841	0.416481	0.229944	5.584550
9	1.899658	53.52716	40.15964	0.406451	0.219733	5.687022
10	1.998394	53.14456	40.46955	0.396247	0.211895	5.777748

Impulse Response Function



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