



This work is licensed under a [Creative Commons Attribution-NonCommercial-NoDerivatives 4.0 International License](https://creativecommons.org/licenses/by-nc-nd/4.0/)

Exchange Rate Fluctuation, Stock Market Performance And Economic Growth In Nigeria Under Democratic Dispensation

Gilbert Deinde Ifarajimi, Ph.D, FCA.

Department of Accounting and Finance,
Samuel Adegboyega University, Ogwa, Edo State

Daniel Chibueze Onyejiuwa

Department of Economics,
Samuel Adegboyega University, Ogwa, Edo State

Abstract: *The study examined the exchange rate fluctuation, stock market performance and economic growth in Nigeria. The study covers the period 1999 (when democratic rule returned to Nigeria) to the second quarter of 2016. The study adopted VAR Granger Causality/Block Exogeneity Wald Tests, VAR approach to derive the variance error decomposition and impulse function response. The empirical results found out that none of the variables has power to predict real growth in Nigeria. However, exchange rate has a causal feedback from growth rate, ASI, money supply and government capital expenditure. The findings also showed a causality flow from consumption to stock prices and exchange rate fairly caused ASI, but there is no causal relationship between inflation and naira value. The study revealed that exchange rate shocks are crucial factors in explaining economic growth and growth in stock market in the long run. It is recommended that conscious efforts should be made by policy makers to reduce exchange rate variability and to encourage improvement in stock market performance. It is also recommended that the continued devaluation of the naira and incessant depreciation of the currency against major foreign currencies should be checkmated by encouraging greater productivity in local commodities in which the country has comparative advantage.*

Keywords: *Exchange rate, stock market, growth, shocks, responses.*

I. INTRODUCTION

The Nigerian Stock Market experienced impressive growth from 1999 after the country's return to democratic rule until 2007 (especially in response to viable financial reforms which took place from 2004 to 2006) but the global financial crises of 2007/2008 crashed the stock market to its lowest ebb, leading to enormous losses by market participants. According to Al-Faki (2006); Kolapo and Adaramola (2012), a virile capital market is an engine for economic growth. A rising stock market is an indicator of an expanding economy. Consequently, the health of the capital market is of great concern to investors, the market regulators and financial analysts. Eight years after the global market crisis of 2008, the Nigerian Stock Market was yet to recover substantially from the shock due to entreating factors such as exchange rate fluctuation, rising inflation, increasing interest rates, declining foreign direct investments and low productivity occasioned by insecurity and abnormally high level of unemployment.

The securities market plays a major role in financial intermediation in both developed and developing countries by channeling idle funds from surplus to deficit units in the economy. As the economy of a nation develops, more resources are needed to meet the rapid expansion. The stock market serves as a channel through which savings are mobilized and efficiently allocated to achieve economic growth (Alile, 1984). Gavin (1989) asserted that a booming stock market has a positive effect on aggregate demand and hence, on economic growth. Adaramola (2012), asserted that there is a strong evidence that variations in the Nigerian stock market is explained by exchange rate volatility. The continuous depreciation of the Naira against major currencies is pauperizing the stock market as investors lose confidence in the Nigerian stock market.

Exchange rate, defined as the domestic currency price of a foreign currency, matters both in terms of its levels and volatility (Ezike & Ogege, 2012). Exchange rates can influence both the stock market and the economic growth of a country. When a currency depreciates, the exchange rate movement has two potential implications for economic growth. First, it reduces that country's wages and production costs relative to those of its foreign counterparts. Ordinarily, a country experiencing real currency depreciation has enhanced attractiveness as a location for receiving productive capacity investments, thus exchange rate depreciation improves the overall rate of return to foreigners contemplating an overseas investment project in such country (Garvin, 1989), but this is hardly

the case in Nigeria. Secondly, the understanding of the stock price-exchange rate relationship may prove helpful to foresee potential crisis.

The depreciation of the exchange rate of the Naira has been a major reason for various problems which the Nigerian economy has been experiencing and this has made it extremely difficult to predict the direction of the Nigerian economy with any degree of accuracy. The potentially higher cost of imported input associated with naira depreciation increases marginal cost and leads to higher prices of domestically produced goods (Kandil, 2004). In the same vein, local firms increase prices in response to foreign competitors' price increase to improve profit margins (leading to escalating inflation) especially in the absence of product substitutability. In the process of achieving macroeconomic stability, Nigeria's monetary authorities have adopted various exchange rate arrangements over the years. It shifted from a fixed regime in the 1960s to a pegged arrangement between the 1970s through the mid-1980s and finally to the various types of the floating regimes since 1986 (Dada & Oyeranti, 2012; Eze & Okpala, 2014) but none of the various policies have been able to stabilize the Naira. Defending the floating exchange rate, Akanji (2013) pointed out that the fixed exchange rate regime induced an overvaluation of the Naira which was supported by exchange control regulations that engendered significant distortions in the economy. The fixed exchange rate gave vent to massive importation of finished goods with the adverse consequences for domestic production, balance of payments position and the nation's external reserves level, but Adaramola (2012) held a contrary view.

In an international context, the variability of foreign exchange rates is clearly a potentially interesting factor that drives the level of the volatility of stock returns. With the liberalization and the reduction of barriers to international investment, sudden and bad events created in some stock markets will drive investors to withdraw their investment and to look for other viable financial markets (Karoui, 2006). These investors will convert their holdings into foreign currency and the shocks will subsequently affect foreign exchange markets, leading to unexpected fluctuations, usually to the disadvantage of the weaker currency.

The purpose of this study is to examine the tripartite impact of exchange rate fluctuation on stock market performance and economic growth, and stock market performance on economic growth in Nigeria. The study covers the period 1999 (when democratic rule returned to Nigeria) to the second quarter of 2016.

The main questions being addressed include the impact of exchange rate fluctuation on stock market performance and inflation in Nigeria and the tripartite effect of exchange rate fluctuation, stock market performance and inflation on the economic growth of Nigeria. To address these questions, three hypothesis were formulated in the null form as follows:

H0 1: Exchange rate fluctuation has no significant impact on stock market performance in Nigeria.

H0 2: Exchange rate fluctuation has no significant impact on the economic growth of Nigeria.

H0 3: Stock market performance has no significant impact on the economic growth of Nigeria.

Accepting these hypotheses will mean that economic growth in Nigeria is immune to the vagaries of exchange rate fluctuation and stock market performance and thus, negate the findings of Toulaboe and Terry (2013), Ogundipe and Egbetokun (2013).

II. LITERATURE REVIEW

Exchange rate is the price of a domestic currency in terms of other currencies. It is usually determined by the interplay of supply and demand in a free market environment. The main objectives of exchange rate policy are to preserve the value of the domestic currency, maintain a favourable external reserves position and ensure external balance without compromising the need for internal balance and macroeconomic stability as a precursor to economic growth.

The earliest and leading theoretical foundation for the choice of exchange rate regimes rested on the Optimal Currency Area (OCA) theory, developed by Mundell (1961) and McKinnon (1963). According to the theory, a fixed exchange rate regime can increase trade and output growth by reducing exchange rate uncertainty and thus the cost of hedging, and also encourage investment by lowering currency premium from interest rates. However, it can also reduce trade and output by stopping, delaying or slowing the necessary relative price adjustment process. The theory maintains that a fixed exchange rate regime can increase trade and output growth by providing a nominal anchor for the credibility of monetary policy by avoiding competitive depreciation and enhancing the development of financial markets (Barro and Gordon, 1993; Frankel and Rose, 2003) amongst others. The OCA theory claimed that a fixed regime can also delay the necessary relative price adjustments and often lead to speculative attacks. Therefore, many developing and emerging economies suffer from a "fear of floating" (Calvo and Reinhart, 2002), but their fixed regimes also often end in crashes when there is a "sudden stop" of foreign investment and capital flight follows, reminiscent of the situation in Nigeria in 2009 after the stock market crises.

In Nigeria, exchange rate has changed from regulated to deregulated regimes. Ewa (2011) noted that the exchange rate of the Naira was relatively stable between 1973 and 1979 during the oil boom era and when agricultural products accounted for more than 70 percent of the nation's Gross Domestic Products (GDP). Inconsistency in policies emanating from a flexible exchange rate regime and lack of continuity in exchange rate policies led to unstable nature of the Naira (Gbosi, 2005).

Benson and Victor (2012) noted that despite various efforts by the Nigerian government to maintain a stable exchange rate, the Naira has depreciated throughout the 1980s to date. Floating exchange rate has been shown to be preferable to the fixed arrangement because of the responsiveness of the rate to the foreign exchange market (Nwankwo, 1980).

Previous researches on the effect of fluctuating exchange rate on the Nigerian economy have contrasting results. For example, Haumann, Pritchett and Rodrik (2005) found that countries with more flexible exchange rate grow faster. Faster economic growth is significantly associated with real exchange rate depreciation. Rodrik (2006) argued that real undervaluation promotes economic growth, increases the profitability of the tradeable sector and leads to an expansion of the share of tradeable in domestic value added. Empirically, Aggarwal (1981) found a significant positive correlation between the US dollar and US stock prices while Soenen and Hennigan (1988) reported a significant negative relationship. Asaolu and Ogunmakinwa (2011) maintained that exchange rate has significant positive impact on stock prices and affirmed that exchange rate granger causes average share price when considered in pairs but Atanda and Maku (2009) claimed that exchange rate has a long run significant negative influence on the stock market.

Toulaboe and Terry (2013) investigated the link between exchange rate regimes and inflation performance in developing countries and found that differences in inflation rates across developing countries correspond to differences in the exchange rate regimes adopted by those countries and that the extent of openness to foreign trade contributed to inflationary pressures in the domestic country. Ogundipe and Egbetokun (2013) also investigated the exchange rate passthrough to consumer prices for Nigeria on the background of the import dependence nature and discovered that exchange rate has been more important in explaining Nigeria's rising inflation phenomenon than actual money supply.

However, a major finding by Mordi, Essien, Adenuga, Ononugbo and Ajao, (2007) was that the evolution of exchange rate is not very important in explaining inflation in Nigeria as evident by the low degree of pass-through that was recorded for all types of inflation in the country. They argued that aggressive combat of inflation cannot be achieved through exchange rate stabilisation in Nigeria. The Nigerian economy is external sector driven and shocks from global commodity market have implications on inflation in the country. Similarly, distortions in the supply of consumer goods, particularly household items, in the foreign market are a signal of a high exchange rate pass-through to the country's consumers especially in a Casino economy.

Bosworth, Collins and Yuchin, (1995) provided evidence that in a large sample of industrial and developing countries, real exchange rate volatility hampers economic growth and reduces productivity growth. Econometric studies have been conducted on exchange rate determination and the movements in output in Nigeria based on single equation regression approach. Eme and Johnson, (2012) investigated the effect of exchange rate movements on real output growth in Nigerian economy for the period 1986-2010. The result revealed that there is no evidence of a strong direct relationship between changes in exchange rate and output growth. Asher (2012) examined the effect of exchange rate fluctuation on the Nigerian economy for a period of 1980-2010. The result showed that fluctuating exchange rate has positive effect on economic growth. In a similar study, Akpan (2008) investigated foreign exchange market and economic growth in an emerging petroleum based economy (Nigeria) from 1970-2003. He discovered that positive relationship exists between exchange rate variability and economic growth. Obansa, Okoroafor, Aluko and Eze, (2013) examined the relationship between exchange rate fluctuation and economic growth in Nigeria between 1970-2010. They concluded that exchange rate liberalisation was good for the Nigerian economy.

Odusola and Akinlo, (2001) examined the linkage among exchange rate, inflation and output in Nigeria. A structural VAR model was employed which captured the interactions between exchange rate and output. The result showed a contractionary impact of the parallel exchange rate on output only in the short term. In addition, they observed that output and parallel exchange rate were significant determinants of inflation dynamics in Nigeria. The authors concluded by suggesting more concerted efforts by the CBN towards taming the parallel exchange market. Harris (2000), using the Generalised Least Square technique found that real exchange rate, when well managed affect productivity growth in both the short and long run. The result was consistent with the competitiveness hypothesis, which suggested that exchange rate depreciation boosts productivity growth in the short run. While Aghin (2006) in his study, found that the effect of exchange rate volatility is relatively small and insignificant, Dubas and Lee (2005) found a robust relationship between exchange rate stability and growth.

Commenting on the inconclusive nature of the relationship between inflation and economic growth, Wai (1959) argued that there is no relationship between inflation and economic growth observing that growth has been possible without inflation in some countries while in others, there have been inflation without growth. Chimobi (2010) investigated the existence of a relationship between inflation and economic growth in Nigeria using annual data for the period 1970-2005. The study found no co-integrating relationship between the two variables.

III. RESEARCH METHODS

The nexus between exchange rate and economic growth is well explained by the Optimal Currency Area (OCA) theory, developed by Mundell (1961) and McKinnon (1963). This theory has already been reviewed in the literature. The theory takes account of the link between a fixed exchange rate regime and economic growth. However, the focus of this study is divergent in this linkage as it incorporates the stock market into the equation and gives explanation on how these variables interact interdependently among each other. All share index was used as proxy for stock market performance and the official exchange rate of naira to the US dollar was adopted. The study also examines the responses of target variables (real economic growth rate, exchange rate and all share index) to any shock in any of the policy variables (exchange, inflation and interest rates). Other control

variables - broad money supply and government capital expenditure were adopted in growth model. The period covered was 1999:1 to 2016:2 implying the use of 70 quarterly data.

Considering the number of variables in this study, the VAR model with two lag in each variable (including constants), would be employed in line with Maddala (1992:578):

$$\begin{aligned}
 &GRT_t = \alpha_0 + \alpha_1 EXR_t + \alpha_2 ASI_t + \alpha_3 TRB_t + \alpha_4 MAE_t + \alpha_5 CV_t + \epsilon_t \\
 &EXR_t = \beta_0 + \beta_1 GRT_t + \beta_2 ASI_t + \beta_3 TRB_t + \beta_4 MAE_t + \beta_5 CV_t + \eta_t \\
 &ASI_t = \gamma_0 + \gamma_1 GRT_t + \gamma_2 EXR_t + \gamma_3 TRB_t + \gamma_4 MAE_t + \gamma_5 CV_t + \zeta_t
 \end{aligned}
 \tag{3.1}$$

Where: GRT is growth rate of real GDP, EXR is exchange rate, ASI is all share index, TRB is treasury bill rate, MAE are macroeconomic variables (Inflation and interest rate) and CV are control variables (broad money supply, Personal consumption and government capital expenditure measure as percent share in real GDP).

$\alpha, \beta, \gamma, \delta, \epsilon, \zeta$ and ϵ, η, ζ are coefficients to be estimated according to equation 3.1, while

ϵ, η, ζ are error terms in their respective equations.

The essence of specifying VAR equations is to obtain the impulse response functions and forecast error variance decomposition to explain the various shock effect of variables to one another. These two results obtained from VARs are useful for analyzing transmission mechanisms. The impulse responses tell us how target variables respond to shocks in the policy variables and control variables, while the variance decompositions show the magnitude of the variations in the targets variables due to the policy variables and control variables. The study also adopts the VAR Granger Causality/Block Exogeneity Wald Tests to determine the predictor power of each of the variables over the other. Granger causality test to examine whether past changes in one stationary variable, say target variable, help predict current changes in another stationary variable, say policy variable, beyond the explanation provided by past changes in policy variable itself (Granger, 1986). If not, then the target variable does not “Granger cause” the policy variable.

IV. ESTIMATION RESULTS

Here we carried out the block exogeneity Wald test also known as VAR Granger causality test, VAR estimations of Forecast Error Variance Decompositions and impulse response analysis.

A. GRANGER CAUSALITY TEST

We examined the VAR Granger Causality between targets variables (growth rate of real GDP, exchange rate and all share index), policy variables (Treasury bill, inflation and interest rates) and control variables (broad money supply and government capital expenditure). The VAR Granger causality test in respect of two-lag is presented in Tables 1.

In the block result of growth rate (GRT), none of the variables has power to predict real growth in Nigeria. We expected exchange rate to granger cause real growth, but during this period, exchange rate was fixed (including Bureau de change operations) and the government allocated foreign exchange to the preferred sectors like agriculture and manufacturing. Due to inefficiencies and corruption that characterized the allocation of foreign exchange at the time, much impact was not felt in the economy. From the 1st quarter of 2016, the monetary authority adopted floating exchange rate. This action, within the short period, had greatly influenced the economy negatively. Only the test value for ASI show a weak significant causality of 10% during the period. The stock market seems to have a relatively predatory influence on real growth. This is due to the efficiency recorded by the capital market during the period of democratic governance through various financial reforms.

Dependent variable	GRT	EXR	ASI	INF	INT	All
GRT		3.19	5.50	1.71	0.32	15.54
EXR	8.13**		20.95***	4.82*	3.01	48.19***
ASI	1.81	5.04*		1.70	0.32	21.86***
INF	1.65	0.94	1.63		5.71**	12.94
INT	0.53	6.56**	0.45	5.55*		26.31**

Source: E-view 8. Each factor on the first row shows the chisquare value. *, ** & *** denote 10%, 5% and 1% level of significance.

Table 1: VAR Granger Causality/Block Exogeneity Wald Tests

The findings in the block test for exchange rate revealed that there are causal feedback from growth rate, ASI, money supply and government capital expenditure to exchange rate. It implies that during this period, the depreciation of Naira relied on the performance of the economy, capital market, fiscal position and the stock of money in the economy. This was a true reflection of the economy during this period. After the transfer of power from military to democratic government, the objective of the government was to maintain a stable prices in the domestic and international markets. The findings from this results suggest that supply-leading hypotheses were predominant in Nigeria in the period. The findings from the block test of ASI reveal a causality flow from consumption to stock prices and exchange rate fairly caused ASI. The share of consumption in the real income affect the rate of savings, which in turn influences the level of investment in the stock market. Through the speculative activities in the foreign exchange market, investors have alternative to invest in stock market, especially when the risk in foreign exchange market is high.

Table 1 also revealed that depreciation of the naira is not caused by the rise in the general price level and at the same time depreciation of Naira does not cause inflation. This suggests that there is no causal relationship between inflation and naira value. However, increase in interest rate was caused by the depreciation of the naira. This is due to the incentive of foreign assets over domestic ones. Where interest rate is low in foreign capital market, Nigeria investors would transfer funds to other viable investments outside the country. This will lead to depreciation of the Naira, thereby sending a feedback effect on the domestic interest rate. Before the democratic rule, interest rate was highly regulated, and did not have any element of shock contrary to what obtains under the deregulation policy of the government.

B. VECTOR AUTO-REGRESSION (VAR) ESTIMATES

To examine the response of variables to shocks within the system and variations within the system, the variables grouped into target and policy variables. The target variables include growth rate, exchange rate and all share index, while policy variables include the Treasury bill, inflation and interest rates. Although the exchange rate may be viewed as a policy variable in Nigeria, the central bank often intervenes in foreign exchange markets either to stabilize the exchange rate or to accumulate foreign reserves on behalf of the government. It is this part of shocks to the economy that we hope to capture by estimating an exchange rate mechanism. Innovations to all share index are also interpreted as policy shocks because it give information on the real value of the capital market, and act as an intermediate target in financial decision.

Table 2 shows the VAR Lag Order Selection Criteria, and the Schwarz information criterion (SC) indicates lag 2 as most efficient. Therefore the VAR was estimated on lag 2. The VAR results indicate that none of the explanatory variables exert any strong influence on growth rate, except its past values. this buttress the fact that shocks rather than effect translate into the economy, and this can be seen more in the forecast error and impulse from variables. Therefore, the results from forecast error variance decompositions and impulse response functions of variables will be our focus.

Lag	LogL	LR	FPE	AIC	SC	HQ
0	-2121.446	NA	1.91e+18	67.63322	67.93938	67.75363
1	-1668.697	761.7681	1.46e+13	55.83166	61.11633	57.03581
2	-1570.926	136.5690	9.99e+12	55.29925	58.89328*	57.58714
3	-1467.069	115.3969	7.40e+12	54.57363	63.14616	57.94525

Source: *Eviews 8* indicates lag order selected by the criterion*

Table 2: VAR Lag Order Selection Criteria

C. FORECAST ERROR VARIANCE DECOMPOSITIONS

Table 3 present the results of the forecast error variance decompositions of variables. The results show 10 periods of variance decomposition of all variables (Table 4). These decompositions tell us the proportional contribution of target shocks to variations in a given policy variable. The larger the proportion of variation that is attributable to a given target variable, the more important is that variable in the transmission policy effect. Although variance decompositions show the importance of a target variable to movements in a policy variable, the direction of these movements can only be observed from the impulse responses.

Variance Decomposition of GRT:							
Period	S.E.	GRT	EXR	ASI	TRB	INF	INT
1	1.504763	100.0000	0.000000	0.000000	0.000000	0.000000	0.000000
5	2.341236	80.84273	4.978173	3.857104	0.528440	2.225598	1.161249
10	2.787855	77.02949	5.711772	4.730234	0.704744	2.212808	2.041642
Variance Decomposition of EXR:							
Period	S.E.	GRT	EXR	ASI	TRB	INF	INT
1	7.303199	4.256835	95.74316	0.000000	0.000000	0.000000	0.000000

5	14.55652	14.38549	48.16122	13.28701	2.760076	8.027531	3.082306
10	17.88536	16.18548	33.70886	9.741671	2.689207	8.227406	12.95951
Variance Decomposition of ASI:							
Period	S.E.	GRT	EXR	ASI	TRB	INF	INT
1	3662.958	0.032704	4.053948	95.91335	0.000000	0.000000	0.000000
5	9642.757	3.038087	0.943913	78.09139	1.013253	3.142851	0.804601
10	12394.66	8.519658	1.686800	53.50485	0.686175	4.477563	4.786196

Source: *Eview 8*.

Table 4: Variance Decomposition for 10 periods

The value in each cell is the forecast error variance decomposition contribution of the innovations in the target variable in sub-heading to the variations in the policy variable in the corresponding row. For example reading the cells under GRT in the 5th period in Table 4, exchange rate (EXR) contributes 5% to variations in growth rate, while all share index (ASI) and the Treasury bill rate (TRB) contribute 2.3% and 0.5 % respectively. Looking through all the cells in Table 4, we discovered that growth rate contribution of innovation in itself is above 70%, followed by exchange rate with average contribution of 5% throughout the 10 periods. Policy variables, like TRB, inflation (INF) and Interest (INT), rates fluctuate within 1 and 2 per cent variations to growth rate, except TRB that mostly contribute less than 1 per cent to variations in growth rate. Apart from the variations from growth rate itself, exchange rate contribute more than any variable to the innovation in the growth rates. The contributions of innovations from most policy variables to developments in growth rate are quite small. Therefore, movements in growth rate are explained by its own shocks in most of the periods and partly by exchange rate. It is shown that in the 1st period there is no contribution of shocks to growth rate from all variables since growth rate in the 1st period will not be affected by any shocks in the system. However later on, these shock will be visible.

The variance decomposition of exchange rate revealed that growth rate, ASI and interest rate showed more than 10% forecast error that explained variations in exchange rate before the end of the periods, and financial deepening up to 9% as well. From the results, exchange rate itself has the highest exogenous shocks. For example in the first period, exchange rate contributed 95.7% in its variations, and reduced to 33.5% in the 10th period. This implies that shocks from speculation, hedging and corruption inherent in the foreign exchange market is a main factor that determine fluctuations in Naira exchange rate to other major currencies. Financial deepening (M2/RGDP) is another main variable shock to exchange rate in Nigeria. Apart from the first three periods, its contribution to innovations in exchange rate increased from 1.3% in the 5th period to 9.2% in the 10th period.

The innovation of ASI become important in explaining variations that occur in exchange rate during these periods. ASI innovations explain just over 8% of exchange rate variations in the 2nd period and 13% towards the end of the 5th period, while growth rate explains 4% in the first period and 16% before the end of the period. Another policy variable that has a reasonably high innovation to exchange rate was interest rate, contributing up to 13% shocks to exchange rate towards the end of the period. In Mudell-Flaming model, it is believed when the interest rate of a country increases, it will attract a high returns in investment. On the other hand, when interest rate is a cost, a high interest will discourage both domestic and foreign investments. Rather than investors to bring in capital into Nigeria economy, Nigerians will rather demand for exchange rate to invest outside the country. Through this transmission mechanism, shocks from interest rate will contribute innovations to exchange rate. Mostly, high inflation rate in Nigeria offset any interest rate contribution of innovation to exchange rate. In the results, the forecast error variance of exchange can be explained by more than 8% shocks from inflation from the 5th to 10th periods.

The Variance Decomposition of ASI Innovations to growth rate and exchange rate shows a relatively mixed amounts of variations in ASI. GRT continued to increase its shocks to ASI from 0.03% in the 1st period to 8.5% at the 10th period. The results reveals that any change in economic performance of any country will lead to capital market value response. The direction of response is clearly shown in the impulse function response. However, the continuous increase in the contribution to innovation to ASI indicates that economic growth shocks contribute significantly to the value of stock in the capital market. Exchange rate exert 4% shock to ASI in the 1st period and later reduced its contribution to 1% in the 10th period. In the whole periods, the Treasury bill rate explains around 1% of ASI innovations. This implies that changes in exchange rate send a feedback effect to the capital market at the initial, and after the shocks have been absorbed in the capital market due to Naira depreciation, normalcy set in. The personal consumption becomes insignificant for ASI developments in the earlier period explaining 0% of ASI movements in 1st and 2nd quarter of the first year and later increased continuously to more than 18% towards the end of the period. During this period, innovations to most policy variables make low contributions to movements in ASI. Inflation and interest rates slightly increase to 0.08% and 4.5.5% towards the end of the period.

D. IMPULSE RESPONSE FUNCTIONS

According to Figure 1 a positive exchange rate (EXR) shock affects growth rate of real gross domestic product (GRT) only in the short run as real GDP increases significantly within the first three periods. The impulse responses show that there is no long-run impact of EXR shocks on GRT. The impulse of ASI to growth rate is similar to that of exchange rate. In the results, we find

that treasure bill rate (TRB) does not have effect on real GDP in the shortrun and long-run, this support the claim of Emenuga, 1998 that discount rate and CBN rates are ineffective in cause any effect in the economy, and unattractiveness of the bill, particularly to private investors.

In the result, EXR shock apparently raises GRT and ASI in the long run within the periods, which is consistent with a priori expectation. It appears that exchange rate shocks are crucial factors in explaining economic growth and growth in stock market in the long run. Also, EXR shock has a positive effect on TRB both in the short and long run

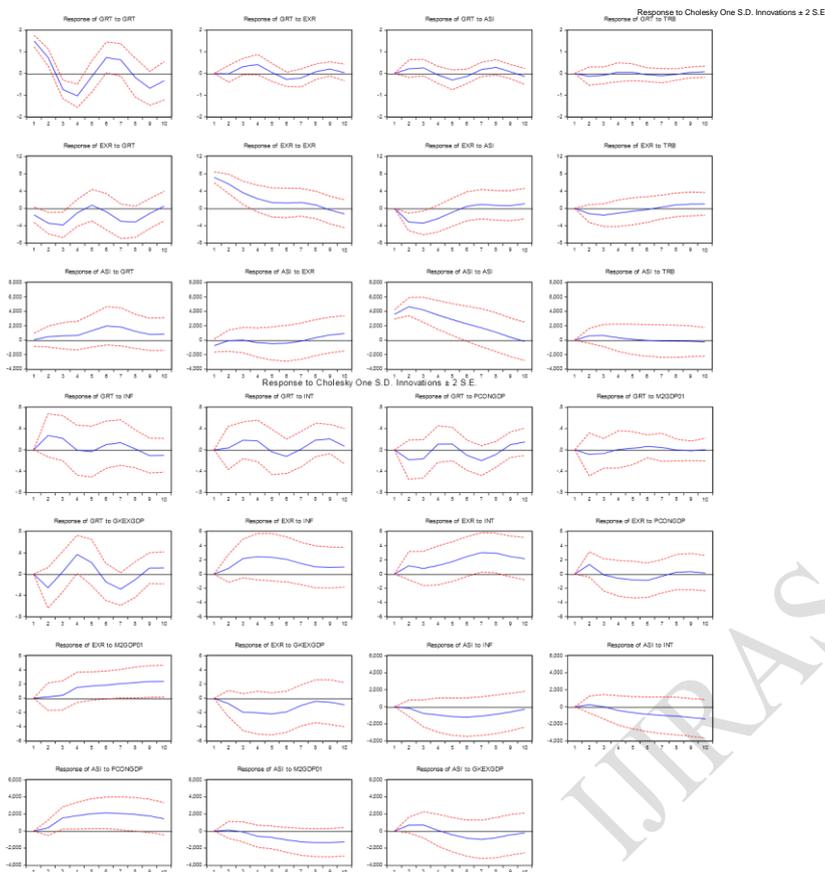


Figure 1: Impulse Response

The impulse responses show that there is a long run impact of exchange rate shocks on inflation, and interest rates. The results also show that exchange rate respond to financial deepening, which is consistent with the empirical findings of Simatele (2003). Figure 1 shows a positive GRT, EXR and personal consumption shocks affect ASI in the long run as ASI rises significantly. However, it is discovered that inflation and interest rate shocks do not have no effect on ASI in the long run.

The explanation for these results is not far-fetched. Since the return of democracy in 1999, the government had stimulated the economy with many reforms, programmes and policies, which were highly dependent on many factors for their workability. The exchange rate affected production through the cost of imported inputs. Thus, an increase in the exchange rate would raise the cost of production and, hence, have a negative effect on inflation and the growth of the economy.

E. CONCLUSION

The study examined the tripartite impact of exchange rate fluctuation on stock market performance and economic growth, and stock market performance on economic growth in Nigeria using VAR Granger Causality/Block Exogeneity Wald Tests, VAR approach to derive the variance error decomposition and impulse function response. The study covers the period 1999 (when democratic rule returned to Nigeria) to the second quarter of 2016. The empirical results found that none of the variables has power to predict real growth in Nigeria. However, exchange rate has a causal feedback from growth rate, ASI, money supply and government capital expenditure. The findings also revealed a causality flow from consumption to stock prices and exchange rate fairly caused ASI, but there was no causal relationship between inflation and naira value. Similarly, increase in interest rate was caused by the depreciation of the naira. The study further revealed that exchange rate shocks are crucial factors in explaining economic growth and growth in the stock market in the long run.

It is strongly recommended that an urgent solution to the foreign exchange impasse is to revert to managed float exchange system. This was successfully implemented between 1994 and 1999 and it brought sanity and stability to the market, culminating in impressive economic growth during the period. An examination of GDP growth during 1994 to 1999 shows good progress unlike the negative growth of 6.43% in the second quarter of 2016 which was largely due to the negative effects of exchange rate fluctuation, stock market retrogression, uncontrolled inflation rate compounded by insensitive official interest rate of 14% (over 25% in commercial banks). Government should put in more efforts to curb the activities of the foreign exchange cabals who make abnormal profits at the expense of the Nigerians populace. The continued devaluation of the naira and incessant depreciation of the currency against major foreign currencies should be checkmated by identifying foreign exchange hoarders and making disincentive policies that will discourage the dollarization of the country.

In addition, concerted efforts should be made to encourage increased local production of commodities in which the country has comparative advantage to address the twin problems of inflation and over-dependence on foreign supply of commodities which could be produced locally. This policy would also enhance job creation and greater utilization of existing productive capacity.

Finally, government should re-structure and deepen the stock market to enhance better performance and strive to achieve single digit inflation and interest rates through deliberate inclusive policies.

REFERENCES

- [1] Adaramola, A. O. (2012). Exchange rate volatility and stock market behavior: The Nigerian experience. *Research Journal of Finance and Accounting* 3 (3), 88-96.
- [2] Aggarwal, R. (1981). Exchange rate and stock prices: A study of the US capital market under floating exchange rates. *Akron Business and Economic Review*, 12, 7-12.
- [3] Akanji, D. R. (2013). The impact of exchange rate volatility on the macroeconomic variables in Nigeria. *European Scientific Journal*, 9 (7), 152-165.
- [4] Akpan, P. L. (2008). Foreign exchange market and economic growth in emerging petroleum based economy: Evidence from Nigeria (1970-2003). *African Economic and Business Review* 6, (2), 46-58.
- [5] Al-Faki, M. (2006). The Nigerian Capital Market and socio-economic development. A paper presented at the 4th distinguished Faculty of Social Sciences Public Lectures, University of Benin, 9-16.
- [6] Alile H. I. (1984). The Nigerian stock exchange: Historical perspective, operations and contribution to economic development. Central Bank of Nigeria, *Bullion, Silver Jubilee ed.* 2, 65-69.
- [7] Asaolu, T. O. and Ogunmakinwa, M. S. (2011). Econometric analysis of the impact of macro-economic variables on stock market movement in Nigeria. *Asian Journal of Business Mgt.*, 3 (1) 72-78.
- [8] Asher, O.J. (2012). The impact of exchange rate fluctuation on the Nigerian economic growth (1980-2010). *Unpublished B.sc Thesis of Caritas University Emene, Enugu State, Nigeria.*
- [9] Atanda, A. A. and Maku, O. E. (2009). Does macroeconomic indicators exert shock on the Nigerian capital market? Online @ <http://mpira.ub.unimuenchen.de/17917/>
- [10] Barro, R. J. and Gordon, D.B. (1983). Rules, discretion and reputation in a model of monetary policy. *Journal of Monetary Economics*, 12, 101-120.
- [11] Bosworth, B., Collins, S. and Yuchin, C. (1995). *Accounting for differences in economic growth*. Unpublished manuscript, Brookings Institution, Washington, DC.
- [12] Calvo, G. and Reinhart, C. (2002). Fear of floating. *Quarterly Journal of Economics*, 11 (2), 379-408.
- [13] Chimobi, O. P. (2010). Inflation and economic growth in Nigeria. *Journal of Sustainable Devt.*, 3 (2).
- [14] Dada, E. A. and O. A. Oyeranti, (2012). Exchange rate and macroeconomic aggregates in Nigeria. *Journal of Economics and Sustainable Development*, 3, (2), 93-101.
- [15] Dubas, J.M., B.J. Lee and N.C. Mark, (2005). Effective exchange rate classification and growth. *NBER Working Paper No.* 11272.
- [16] Eme, O.A. and Johnson, A.A. (2012). Effect of exchange rates movements on economic growth in Nigeria. *Journal of Applied Statistics*, 2 (2), 1-28.
- [17] Ewa, A. (2011). The impact of exchange rate fluctuation on the Nigerian economic growth (1980-2010). Unpublished B.Sc Thesis of Caritas University Emene, Enugu State, Nigeria.
- [18] Eze, T. C. and Okpala, C. S. (2014). Quantitative analysis of the impact of exchange rate policies on Nigeria's economic growth: A test of stability of parameter estimates. *International Journal of Humanities and Social Science*, 4 (7), 265-272.
- [19] Ezike J. E. and S. Ogege, (2012). Nigeria foreign policy: It's impact on non-oil exports. *Journal of Economics and International Finance*, 8 (4), 192-200.
- [20] Garvin, M. (1989). The stock market and exchange rate dynamics. *Journal of Finance*, 8, 181-200.
- [21] Gbosi, A.N. (2005). *Money, monetary policy and the economy*. Port Harcourt: Sodek.

- [22] Granger, C.W. (1986). Development in the study of cointegrated economic variables. *Oxford Bulletin of Economic and Statistics*, 48 (3), 213-228.
- [23] Harris, R.G. (2000). New economy and the exchange rate regime. Center for International Economics Studies, Discussion paper, No. 111.
- [24] Hausmann, R., L. and Rodrik, D. (2005). Growth accelerations. *Journal of Economic Growth* 10 (4), 303-329.
- [25] Kandil, M. (2004). Exchange rate fluctuations and economic activity in developing countries: An evidence. *Journal of Economic Development*, 29 (1), 85-108.
- [26] Kolapo, F. T. and Adaramola, A. O. (2012). The impact of the Nigerian capital market in economic development. *International Journal of Developing Societies*, 1(1), 1119.
- [27] Maddala, G. S. (1992). *Introduction to Econometrics*. Macmillan Publishing Company, New York, 2nd Ed.
- [28] Mckinnon R. I. (1963). Optimum currency areas. *The American Economic Review*, 53 (4) 717-725.
- [29] Mundell R. A. (1961). The theory of optimum currency areas. *American Economic Review*, 51 (4), 657-665.
- [30] Mordi, C. N., Essien, E. A. Adenuga, A. ... and Ajao, O. M. (2007). The dynamics of inflation In Nigeria. Central Bank of Nigeria, Occasional Paper 32, 1-90.
- [31] Nwankwo, C. (1980). *Money and capital market in Nigeria today*. University of Lagos Press, Nigeria.
- [32] Obansa, S.A., Okoroafor, K.D., Aluko, O.O and Eze, M. (2013). Perceived relationship between exchange rate, interest rate and economic growth in Nigeria: 1970-2010. *American Journal of Humanities and Social Sciences* 1(3), 116-124.
- [33] Ogundipe A. A. and Egbetokun, S. (2013). Exchange rate pass-through to consumer prices in Nigeria. *European Scientific Journal*. 9 (25), 110-123.
- [34] Odusola, A.F and Akinlo, A.E. (2001). Output, inflation and exchange rate in developing countries: An application to Nigeria. *The Developing Economies*, 39 (2), 199-222.
- [35] Rodrik, D. (2006). *The real exchange rate and economic growth*. Harvard University, Cambridge, September.
- [36] Simatele, M. C. (2003). Financial sector reforms and monetary policy in Zambia. Ph.D Dissertation, Department of Economics, School of Economics and Commercial Law, Göteborg University
- [37] Soenen, I. A. and Hennigan, E. S. (1988). An analysis of exchange rates and stock prices: The US experience between 1980 and 1986. *Akron Business and Economic Review*, Winter, 7-16.
- [38] Toulaboe D. and Terry, R. (2013). Exchange rate regime: Does it matter for inflation? *Journal of Applied Business and Economics*. 14 (1), 56-71.
- [39] Wai, U. T. (1959). The relationship between inflation and economic development: A statistical inductive study. *Staff Papers (International Monetary Fund)* 7 (2), 302-



This work is licensed under a [Creative Commons Attribution-NonCommercial-NoDerivatives 4.0 International License](https://creativecommons.org/licenses/by-nc-nd/4.0/)