

Financial Inclusion and Economic Growth in Nigeria

Adolphus Joseph Toby, & Samuel Dibiah

Department of Banking and Finance
Rivers State University, Nigeria

DOI: 10.56201/ijefm.v7.no5.2022.pg21.35

Abstract

The purpose of this study is to empirically examine the relationship between financial inclusion and economic growth in Nigeria. The study examined the Central Bank of Nigeria quarterly data from 1981Q1 to 2017Q4 with the E-views software package (version 9.0). The Vector Auto Regression (VAR) methodology was used to analyse the data, while Block Exogeneity Wald test was used to test the hypothesis. The specified models included stationarity tests, reduced form VAR estimate and structural analysis. The Augmented Dickey Fuller Test indicates that the study variables are stationary at first difference or $I(1)$. The VAR roots plot in relation to unit circle indicates that our specified reduced form VAR models are stable. The Lagrange Multiplier (LM) diagnostic tests indicate that our specified VAR models are correctly specified. The results from the granger causality Wald test show that, at 5% significance level, conglomerate of indicators of financial inclusion; currency in circulation, currency outside bank, quasi money jointly have a causal influence on real GDP, but individually, only the effect of currency outside bank ratio is statistically significant. The study recommends that the Central Bank should as matters of policy persuade commercial banks to key into the federal government financial inclusion programmes by increasing their presence in the rural areas and reducing the cost of using financial services. This would give more rural adult population access to formal financial services and significantly reduce the degree of monetization of the economy.

Keywords: *Financial Inclusion, Currency in Circulation, Currency Outside Bank, Quasi Money and Economic Growth*

1. INTRODUCTION

1.1 Background to the study

Financial systems perform key roles in the economy, especially in the savings-investment-growth nexus, one of which is to act as an effective means for channeling funds from surplus to deficit units by mobilizing resources and ensuring the efficient conversion of these funds into

real productive capital, creating adequate liquidity in the economy by mobilizing short-term funds and making them available long-term, reducing information costs, providing risk management services and reducing risks from the system through diversification and techniques of risk sharing and risk pooling; mobilizing savings from individuals with surplus for investment, thereby solving the problem of indivisibility in financial transactions and mobilizing savings that are invested in the most productive ventures irrespective of the source of the savings. This can be achieved either by direct market based financing or by indirect bank-based finance (Levine, 2004; Emenuga, 2004; Nowbutsing, Ramsohok & Ramsohok, 2010).

Even though there is a general consensus among some researchers that financial deepening stimulates economic growth, the direction of causality between the two has remained unresolved and problematic to ascertain. Meanwhile, the direction of causality may either be through the supply-leading hypothesis, which suggests that financial deepening stimulates growth, or demand-following hypothesis, which proposes that economic growth drives financial deepening, and demand for financial services or the bi-directional hypothesis which suggests the presence of a feedback effect between the financial development and economic growth. Sackey and Nkrumah (2012), Rashti, Araghi & Shayeste (2014) and Tabi, Njong & Neba (2011) among other studies, maintain that, in line with theoretical expectation, financial deepening promotes growth, meaning that finance has positive relationship with economic growth. The role of the financial system in economic growth alongside financial deepening cannot be overemphasized because of the controversy associated with it. Hence, globally, there is the belief that the financial system is critical to the development of any economy majorly because of the huge support it provides to economic activities. Rajan and Zingales (2003) opine that financial system deepening contributes to economic growth.

1.2 Statement of the problem

The Nigerian economy has not really experienced impressive performance such as attraction of foreign investment and halting of capital flight. The banking sector seems not to have made a significant effort in addressing the financial gaps in the system. This is evident to the fact that neither domestic savings nor investments in the country have increased appreciably as the sector still remained largely oligopolistic and uncompetitive, with few large banks controlling the greater segment of the market in terms of total assets, total liabilities and total credit in the banking system. It becomes imperative therefore to ascertain the effectiveness of these reforms by looking at the effects they have made in terms of contributing to economic growth.

Interestingly enough, specific studies on the finance-growth nexus in Nigeria is still marred with major controversies ranging from conflicting results and inappropriate methodologies to inadequate inclusion of financial deepening variables and indicators which makes for the unreliability of the results. It is against these backdrops that this study seeks to investigate the relationship between financial deepening and economic growth in Nigeria using quarterly data for the period (1981Q1-2017Q4) which gives a wider range of observations and of course a more reliable result based on larger number of observations which is lacking in other studies. The study adopts a Vector Autoregressive (VAR) and Vector Error Correction (VECM) framework. The advantages of these techniques are that it makes it possible to distinguish between the short-run and long-run causality if the variables are co-integrated and minimizes the problem of endogeneity since it treats all variables as potentially endogenous. Finally, it models

relationships among macroeconomic variables in a dynamic manner since it is common for macroeconomic variables to be affected by their own past values. Thus, it enables us study the impact of unanticipated shocks on the endogenous variables (impulse response functions). The relative importance of each variable in explaining the variations in the endogenous variables can also be examined (variance decomposition analysis).

1.3 Objectives of the Study

The objectives of this study are as follows: (1) To evaluate the relationship between currency in circulation ratio and economic growth in Nigeria. (2) To evaluate the relationship between currency outside bank ratio and economic growth in Nigeria. (3) To evaluate the relationship between quasi money ratio and economic growth in Nigeria.

1.4 Research Questions

The following research questions will guide this study (1) What is the nature of relationship between currency in circulation ratio and economic growth in Nigeria? (2) What is the nature of relationship between currency outside bank ratio and economic growth in Nigeria? (3) What is the nature of relationship between quasi money ratio and economic growth in Nigeria?

1.5 Research Hypotheses

H₀₁: There is no significant relationship between currency in circulation ratio and economic growth in Nigeria.

H₀₂: There is no significant relationship between currency outside bank ratio and economic growth in Nigeria.

H₀₃: There is no significant relationship between quasi money ratio and economic growth in Nigeria.

2. Literature Review

2.1 Conceptual Framework

2.1.1 Financial Inclusion and Economic Growth

Financial inclusion refers to the process whereby individuals and businesses have access to suitable and inexpensive financial products and services that meet their needs which include transactions, payments, savings, credit and insurance all delivered in a responsible and sustainable way.

Financial inclusion ensures the ease of access, availability and usage of the formal financial system by all members of an economy. Martinez (2011) acknowledged financial access as a vital tool used by government to fight and stimulate growth owing to its ability to aid efficient

distribution of productive resources, hence reducing the cost of capital. This process else referred to as an inclusive financing system can suggestively improve the daily management of finances, as well as decrease the growth of informal sources of credit (like money lenders), which are most times found to be manipulative and exploitative. Inclusive financial system is becoming widely accepted as a policy priority in many countries with resourcefulness coming from the financial regulators, the government and the banking industry. Having access to a bank account is the first step towards broader financial inclusion since it allows people to store money, send money and receive payments. A bank account can also serve as a doorway to other financial services, which is why ensuring that people worldwide can have access to a bank account is the focus of the World Bank Group's Universal Financial Access 2020 initiative. Financial access facilitates daily living, and enables families and businesses make plans for everything ranging from long-term goals to unanticipated emergencies. Having access to a transaction account will enable people use other financial services, like credit and insurance, to start and expand their businesses, invest in education or health, manage risk, and withstand financial shocks, which can improve the overall value of their lives.

A sound financial system has the potentials of driving economic growth and can also create a platform for financial intermediation by providing savings, credits, payments, and risk management products to people with variety of needs. Financially inclusive systems allow an easy wide based access to financial services by making tailored financial products available at an inexpensive price without stern documentations, particularly to the rural poor or other underprivileged groups within the economy. Without financially inclusive systems, the poor would rely on their limited savings for future investments and small enterprises would not be able to pursue promising growth opportunities because they would have to rely on their limited earnings, this is the reason for the persistent income inequality and drag in the economic growth of most developing countries.

2.2. Theoretical Framework

2.2.1 Money Supply Transmission Theory

This theory was made popular by Milton Friedman in 1956. In the classical monetary transmission contrivance, a change in the money supply does not upset the real variables like income, output and employment. Money is unbiased in its effects on the economy. This analysis presupposes a direct and mechanical relationship between money and prices.

If there is a rise in quantity of money, the price level will also rise in proportionately, and vice versa. This relationship is based on the Quantity Theory Equation $MV=PT$ or $M/P = VT$ where, M is the total quantity of money, P is the price level of commodities traded, V is the velocity of circulation of M, and T is the volume of transactions of goods. This equation shows that the supply of real cash balances (M/P) must be equal to the demand for real cash balances (VT). This implies that money plays a causal role in the classical theory which means that changes in the money supply will cause changes in the absolute price level, and in normal income. To explain this, the classicists specified two channels through which monetary changes are transmitted to the real sector of the economy. This transmission mechanism is divided into two, namely direct and indirect mechanisms

2.3. Empirical Review

Abuka et al (2015) studied monetary policy in Nigeria using Vector Error Correction Model methodology as it affects loan applications and real effects. The results reveal that increase in interest rates reduces the supply of bank credit both on the extensive and intensive margins, and there is significant pass-through to retail lending rates.

Nzotta and Okereke (2009) carried out an empirical investigation on financial deepening and economic development of Nigeria between 1986 and 2007 using Granger Causality Test. The result of the study showed that financial deepening index was low in Nigeria during the period under investigation. Notwithstanding however, four of the variables; lending rates, financial savings ratio, cheques/GDP ratio and the deposit money banks/GDP ratio had a significant relationship with financial deepening. The study therefore concluded that the financial system had not sustained an effective financial intermediation, especially credit allocation and a high level of monetization of the economy.

Odiambho (2004) investigated the role of financial development on economic growth in South Africa using three proxies of financial development which includes the ratio of M2 to GDP, the ratio of currency to narrow money and the ratio of bank claims on the private sector to GDP against economic growth which was proxy by real GDP per capita. He adopted the Johansen-Juselius Co-integration approach and vector error correction model aimed at empirically revealing the overwhelming demand-following response between financial development and economic growth. The result of the study totally rejected the supply leading hypothesis.

Fatima (2004) investigated the casual relationship between financial deepening and economic growth in Morocco for the periods, 1990-2000. The variables used were ratio of liquid liabilities (M3) to GDP, ratio of domestic credit provided by the banking sector to GDP and domestic credit as financial debt indicators. The study used the Granger causality test in its estimation and found a short-run relationship between financial deepening and economic growth.

In another study by Luqman (2014), the researcher looked at financial deepening and economic growth in Pakistan, the result revealed that foreign direct investment, inflation, economic growth and financial deepening proxy by credit to private sector are co-integrated affirming a long run relationship existing among them. The study investigated the variable using the vector error correction model and was revealed that the level of financial deepening in Pakistan has remained relatively low.

Adu, Marbuah and Mensah (2013) investigated the long run effect, financial deepening has on the Ghana economy, using a time series data for 14 years period spanning 1998 to 2011 using Vector Error Correction Model. Their study used private sector credit ratio to GDP, total domestic credit ratio to GDP, money supply ratio to GDP, total bank liabilities ratio and other sets of control variables such as trade openness, inflation rate and real gross government expenditure.

Adegbite (2004) used broad money supply to GDP ratio as the measure of financial sector growth and found an increasing linear association between financial deepening and real sector growth in Nigeria using ARDL approach. However, the empirical findings were unable to establish a causal link between financial deepening and real sector growth.

3. Research Methods

3.1 Research Design

The ex-post facto research design approach was used for the data analysis. It combines theoretical thoughts with the empirical observation and extract maximum information from the available data. It allows us therefore to observe the effects of descriptive variables on the dependent variables.

3.2 Nature/Sources of Data

In examining the effects of financial inclusion on economic growth in Nigeria, secondary data consisting of quarterly time series data were used covering the period from 1981Q1 to 2017Q4. Thus, the data consisting of a total of 148 observations is considered rich enough to produce dependable results. The data is obtained from secondary sources from the Central Bank of Nigeria database.

3.3 Method of Data Analysis

The vector autoregressive (VAR) methodology is used in this study. VAR models are mostly suitable for demonstrating the dynamic behaviour of most macroeconomic and financial time series data. It is also used for prediction (Ouliaris, Pagan and Restrepo, 2016). The use of VAR as a modelling system of autoregressive time series has several advantages which includes its flexibility nature (Brooks, 2008), forecast generated is highly reliable (Ouliaris, Pagan and Restrepo, 2016), and VAR models provide window for analysing causal impacts of policy shocks through impulse response function, variance decomposition and Granger causality. This is consistent with the aim of this study which is to examine the effect of financial inclusion on economic growth.

3.4 Empirical Model Specification

The empirical analysis in this study would be based on the model below:

$$RGDPG = f(CIC/M2, COB/M2, QM/M2) \quad (3.1)$$

Where;

RGDPG = Real Gross Domestic Product

CIC/M2 = Currency in Circulation Ratio to M2 as a Ratio of GDP

COB/M2 = Currency Outside Bank Ratio to M2 as a Ratio of GDP

QM/M2 = Quasi Money ratio to M2 as a Ratio of GDP

The econometric representations of the above functional models are given by:

$$RGDPG_t = \beta_{01} + \beta_{11}RGDPG_{t-1} + \beta_{21}CIC/M2_{t-1} + \beta_{31}COB/M2_{t-1} + \varepsilon_{1t} \quad (3.2)$$

$$CIC/M2_t = \beta_{02} + \beta_{12}RGDPG_{t-1} + \beta_{22}CIC/M2_{t-1} + \beta_{32}COB/M2_{t-1} + \varepsilon_{2t} \quad (3.3)$$

$$COB/M2_t = \beta_{03} + \beta_{13}RGDPG_{t-1} + \beta_{23}CIC/M2_{t-1} + \beta_{33}COB/M2_{t-1} + \varepsilon_{3t} \quad (3.4)$$

3.5 Apriori Expectations

Currency in circulation ratio to broad money is expected *apriori* to be positively and significantly related to real GDP growth. Currency outside the banking sector ratio to broad money is expected *apriori* to be negatively related to economic growth. Quasi money ratio to broad money indicates the ability of banks to finance long and medium investment. Thus, it is expected to have positive and significant relationship with macroeconomic performance growth.

4. Results and Discussion

4.1.1 Descriptive Analysis for Financial Inclusion Variables

Figures 4.1 show the time series graph for financial inclusion in logarithmic form from 1981Q1 to 2017Q4. Figure 4.4 plots the graph for Currency in Circulation as a ratio of Broad Money, Currency Outside Bank as a ratio of Broad Money and Quasi Money as a Ratio of Broad Money.

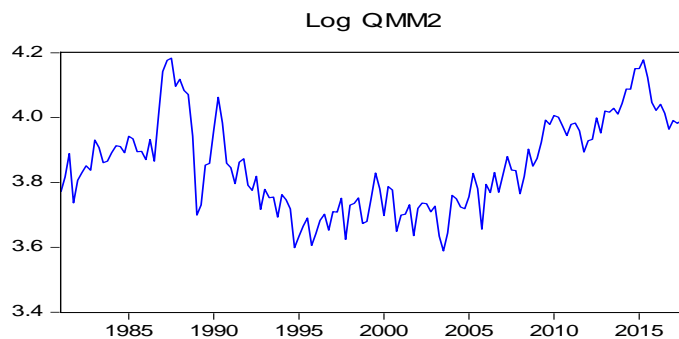
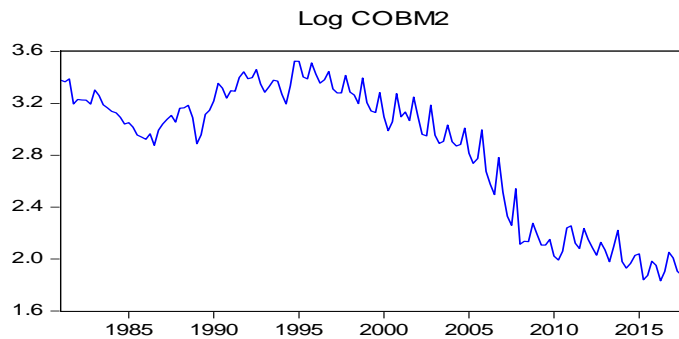
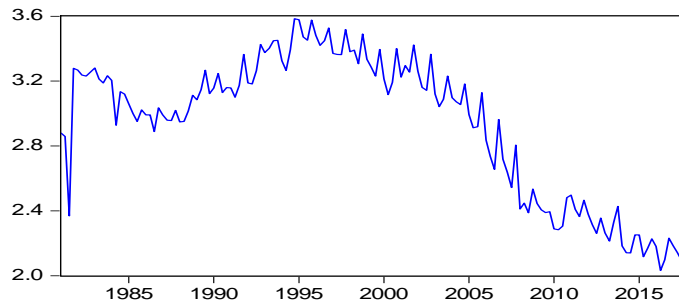


Figure 4.1: The time series plots of the log of CIC/M2, COB/M2 and QM/M2 (1981Q1 - 2017Q4)

Source: EViews output based on Research Data

From figure 4.1, although, the movements in the three variables are like a random walk, both Currency in Circulation as a ratio of Broad Money and Currency Outside Bank as a ratio of Broad Money move in the same direction while Quasi Money as a ratio of Broad Money moves in opposite direction. The downward trends for both Currency in Circulation as a ratio of Broad Money and Currency Outside Bank as a ratio of Broad Money, and the upward movement for Quasi Money as a ratio of Broad Money reflect the several attempts by the successive Nigerian Governments to give more people access to formal financial services and products and to reduce the rate of financial exclusion in the country. Thus, as the currency in circulation and currency outside banks are being reduced, savings and time deposits are being increased.

Table 4.1 shows the descriptive statistics for Currency in Circulation in as a ratio of Broad Money, Currency Outside Bank as a ratio of Broad Money and Quasi Money as a ratio of Broad Money.

Table 4.1: Descriptive statistics for CIC/M2, COB/M2 and QM/M2 (1981Q1 – 2017Q4)

Statistic	CIC/M2	COB/M2	QM/M2
\bar{x}	20.47197	19.26621	47.69396
<i>Max</i>	36.04346	33.94567	65.59278
<i>Min</i>	7.630220	6.246241	36.19404
σ	7.842637	8.311104	7.026049
<i>S</i>	-0.106249	-0.237775	0.578520
<i>K</i>	1.879658	1.714598	2.592413
<i>JB</i>	8.018647	11.58351	9.280018
<i>p- value (JB)</i>	0.018146	0.003053	0.009658

Source: EViews output based on research data

From table 4.1, we can see that Quasi Money as a ratio of Broad Money ($\bar{x} = 47.69\%$) has the highest mean value, followed by Currency in Circulation as a ratio of Broad Money ($\bar{x} = 20.47\%$), and then by Currency Outside Bank as a ratio of Broad Money ($\bar{x} = 19.26\%$). Although, there is large difference between the maximum and minimum values for the three variables, Currency Outside Bank as a ratio of Broad Money ($\sigma = 8.31$) however, has the least variability while Quasi Money as a ratio of Broad Money ($\sigma = 7.02$) has the least variability. Further, although, the three series all have a distribution that is flatter than normal distribution ($K < 3$), the skewness coefficients however, indicates that while Currency in Circulation as a ratio of Broad Money ($S = -0.106$) and Cash Outside Bank as a ratio of Broad Money ($S = -0.237$) both have a negatively skewed distribution, Quasi Money as a ratio of broad Money ($S = 0.57$) has a positively skewed distribution. The JB statistic, which tests the normality of the distributions, is associated with a probability that is lower than 0.05 for all series, indicating that the distributions for Currency in Circulation as a ratio of Broad Money, Currency Outside Bank as a ratio of Broad Money and Quasi Money as a ratio of Broad Money all deviates significantly

from the theoretical normal distribution.

4.1.2 Estimation and Analysis of Empirical Model

4.1.2.1 Stationarity test for model

The model seeks to establish whether economic growth in Nigeria can be explained by changes in financial inclusion, measured by currency in circulation, currency outside the banking system and quasi money all as a ratio of broad money supply. The results of the ADF test are presented in table 4.2.

Table 4.2: ADF tests for the RHS variables in the model

Variable	tau-statistic		Conclusion
	Level	First difference	
CIC/M2	-1.3624 (0.8677)	-7.0210 (0.0000)	Difference Stationary I(1)
COB/M2	-1.4752 (0.8337)	-5.6180 (0.0000)	Difference Stationary I(1)
QM/M2	-2.6439 (0.0866)	-13.2114 (0.0000)	Difference Stationary I(1)

Source: EViews output based on research data; parenthesis contains p-values

From table 4.2, the test on level data is not significant (p-value > 0.05) at 5% level for all variables, indicating that none of the series is stationary at 5% level of significance. However,

Quasi Money as a ratio of Broad Money (p-value = 0.0866) is stationary at 10% level of significance. For the first difference unit root test, the tau statistic (p-value = 0.0000) is associated with zero probabilities in all cases, signifying that the test is highly significant. The three variables are therefore, stationary at first difference. Thus, apart from real GDP growth rate which is I(0), all the variables in model two are integrated of order 1 or I(1). The results imply that the three I(1) variables; namely, Currency in Circulation as a ratio of Broad Money, Currency Outside Bank as a ratio of Broad Money and Quasi Money as a ratio of Broad Money, all would enter our VAR specification in their first difference form since VAR requires that all variables entering the model must be stationary.

4.1.2.2 Reduced Form VAR Estimation for the Model

Tables 4.3 and 4.4 present the VAR lag length selection and the residual diagnostic test for reduced form VAR for the empirical model. Again, the VAR order selection is based on the three commonly used information criteria; Akaike Information Criteria, Schwartz Information Criteria and Hannan Quinn Criteria, and the decision rule is to select the lag order that corresponds to the minimum value of each information criterion. Also, a rebase dummy variable, DUMREBASE, is included to capture the effect of the structural break observed in the first quarter of 2010 real GDP growth. However, since the reduced form VAR is not easy to interpret, due to too many lags that are included (Brooks, 2008) and (Greene 2002).

Table 4.3: VAR Order Selection for the Model

Lag	AIC	SC	HQ
0	8.174044	8.258489*	8.208360*
1	8.241910	8.664136	8.413492
2	8.168138	8.928146	8.476985
3	7.974348	9.072136	8.420460
4	7.674211*	9.109781	8.257588
5	7.754493	9.527844	8.475136
6	7.902903	10.01403	8.760811
7	8.051691	10.50060	9.046864
8	7.897594	10.68429	9.030032

Source: EViews output based on research data; *indicates the selected lag order

Table 4.4: VAR LM serial correlation test for Model 2

LM statistic	p-value
21.50274	0.1600

Source: EViews output based on research date

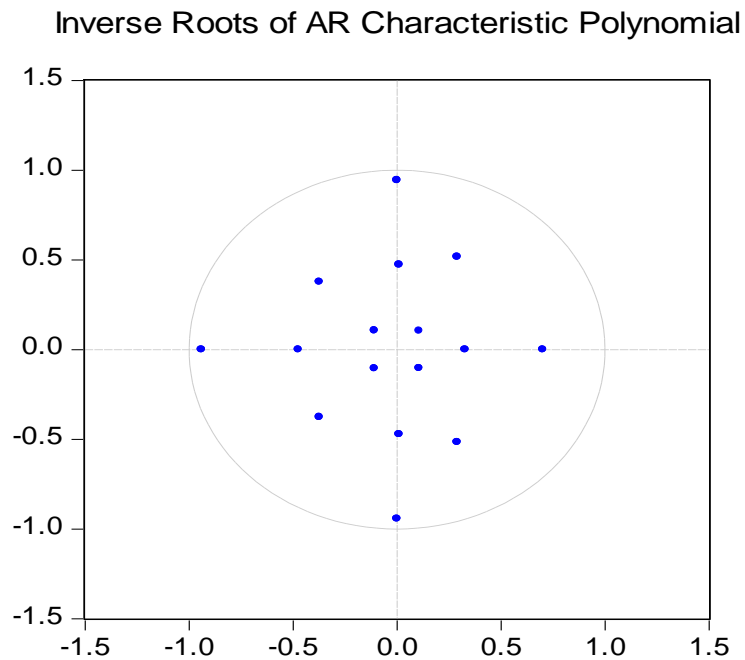


Figure 4.2: VAR roots plot in relation to unit circle

Source: EViews output based on research data

From table 4.3, as indicated by the asterisk (*), while AIC has its maximum value at lag 4, SIC

and HQC both are maximized at lag 1. However, based on the frequency of our dataset which is quarterly (see chapter 3), we consider a VAR with 4 lags as appropriate for the empirical relationships expressed in our model 2.

From table 4.4, the serial correlation LM statistic is not significant ($LM = 21.50274$, $p\text{-value} = 0.1600$) at all conventional levels. Thus, we fail to reject the null hypothesis that the fitted VAR residuals are serially correlated and conclude that the fitted VAR (4) model has no misspecification error.

Figure 4.2, which plots the inverted roots of the estimated VAR(4) in relation to unit circle, shows that all the roots lie inside the unit circle. Thus, the estimated coefficients are stable. This therefore implies that a structural analysis can be conducted to meaningfully interpret the fitted VAR results and test the relevant hypotheses.

4.1.2.3 Structural Analysis for the Model

Figure 4.3 and 4.4 show the impulse response function (IRF) and variance decomposition for real GDP growth for the model. The IRF helps to evaluate the impact on the Nigerian economy of unexpected changes in currency in circulation, currency outside banks and quasi money, all expressed as ratio of broad money supply. Again, six periods (quarters) are considered. The variance decomposition shows the contribution of each these factors to the shock in real gross domestic product. Again, six periods (quarters) are considered.

Table 4.5 shows the VAR Granger causality/blocked exogeneity Wald test for joint significance of lags of each endogenous variable in our estimated VAR(4) model.

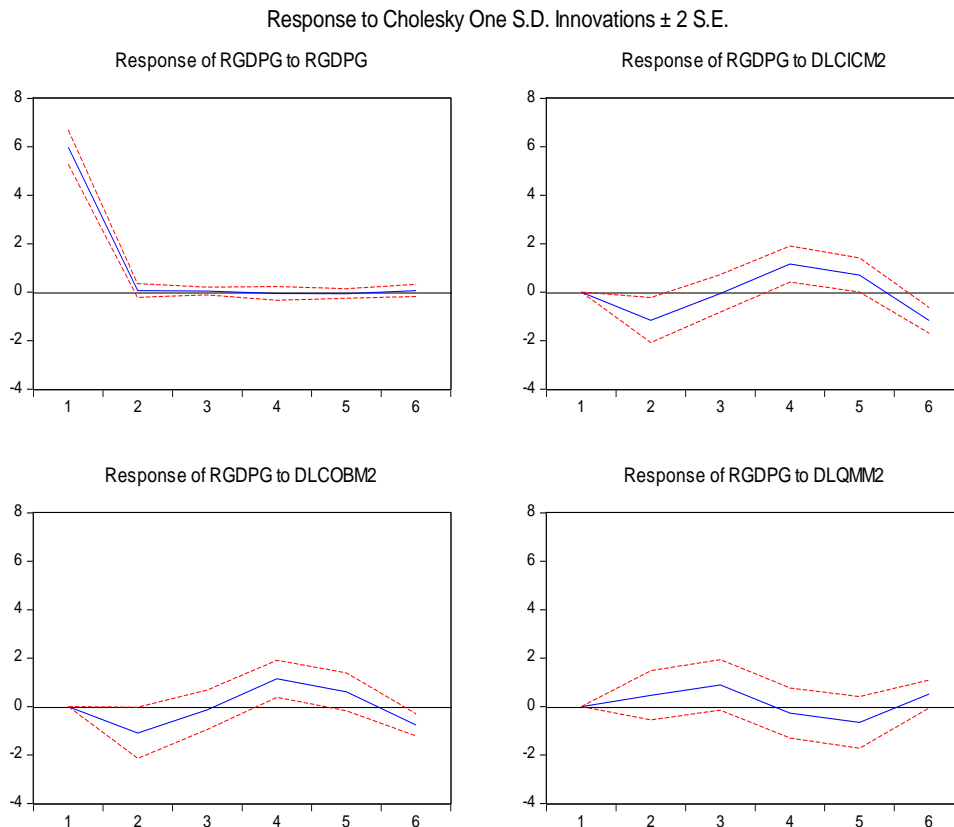


Figure 4.3: IRF for RGDPG for the vmodel

Source: EViews output based on research data

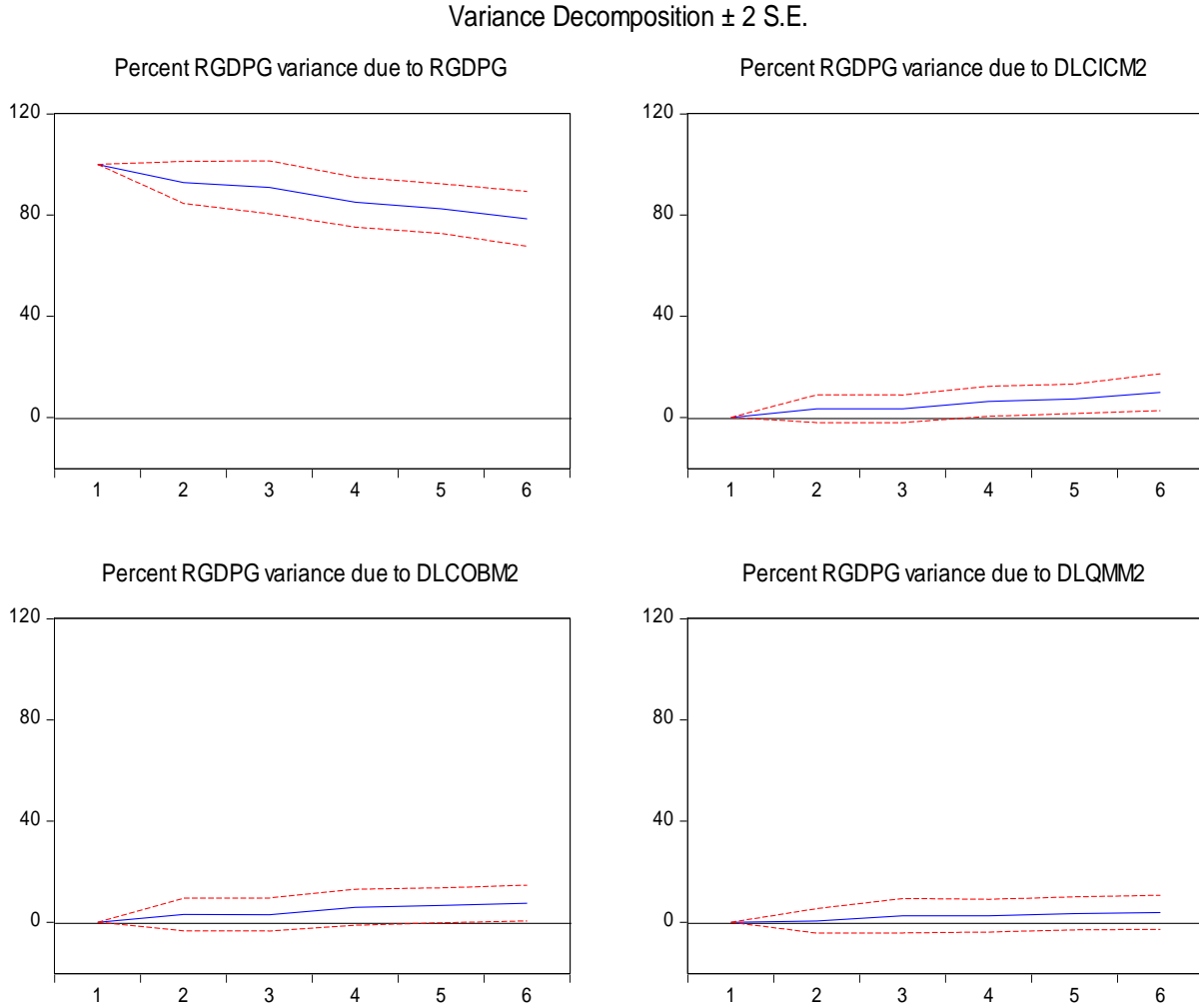


Figure 4.4: Variance decomposition of RGDPG for the model

Source: EViews output based on research data

Table 4.5: VAR Granger causality Wald test for the model

Excluded	Chi-sq.	p-value
CICM2	0.356608	0.9859
COBM2	24.26009	0.0001
QMM2	5.710805	0.2218
All	70.93750	0.0000

Source: EViews output based on research data

As we can see from the impulse responses in figure 4.3, it has own shock having a large positive effect in the first period and almost zero effect in the subsequent periods. Also, there is a cyclical effect on real GDP growth rate of a one standard deviation shock to each of the other

endogenous variables in our model. However, while the initial effect of both Currency in Circulation as a ratio of Broad Money and Currency Outside Bank as a ratio of Broad Money are negative, the initial effect of Quasi Money as a ratio of Broad Money is positive.

Similarly, the variance decomposition in figure 4.4 has its own effect being the main source of error variance in real GDP growth rate. Specifically, own shock contributes approximately 93% of the variation in real GDP growth in the second period and approximately 85% and 78% in the fourth and sixth periods respectively.

From table 4.5, the Wald test statistic is highly significant for Currency Outside Bank as a ratio of Broad Money (p-value = 0.0001) but not significant for both Currency in Circulation as a ratio of Broad Money (p-value = 0.9859) and Quasi Money as a ratio of Broad Money (p-value = 0.2218) at conventional levels. This implies that while there is a causal relationship from Currency Outside Bank as a ratio of Broad Money to Real Gross Domestic Product, there is no causal relationship from each of Currency in Circulation as a ratio of Broad Money and Quasi Money as a ratio of Broad Money to Real Gross Domestic Product.

4.1.2.4 Testing of Hypothesis

H_{01} : There is no significant relationship between financial inclusion and economic growth in Nigeria

Here, financial inclusion is defined as the joint effect of changes in currency in circulation, currency outside banks and quasi money (all as a ratio of broad money) represented by the variable “All” in table 4.5. Therefore, the associated p-value of the Wald (Chi-sq.) statistic corresponding to All would be used to test the above hypothesis. The chosen level of significance is 5%.

If the p-value corresponding to All is less than 0.05, then we would reject H_{02} and conclude that there is a significant relationship between financial inclusion and economic growth in Nigeria. Otherwise, there would be no evidence against H_{02} .

From table 4.5, the Wald (Chi-sq.) statistic corresponding to All has a zero probability (p-value = 0.0000), indicating that the test is highly significant. We therefore, strongly reject the above null hypothesis and conclude that financial inclusion, measured by Currency in Circulation as a ratio of Broad Money, Currency Outside Bank as a ratio of Broad Money and Quasi Money as a ratio of Broad Money, has a causal impact on economic growth in Nigeria.

4.3 Discussion of Findings

Our empirical results are mixed. First, the results from our empirical model suggest that measures of financial inclusion such as currency in circulation, currency outside banks and quasi money all as a ratio of broad money supply, jointly have a causal influence on real GDP, but individually, only the effect of currency outside bank ratio is statistically significant. This is evidenced by the Wald test results in table 4.5 which is highly significant for both Currency Outside Bank as a ratio of Broad Money and All (= joint influence), but insignificant for Currency in Circulation as a ratio of Broad Money and Quasi Money as a ratio of Broad Money. The null hypothesis of no causal impact of financial inclusion was therefore, rejected since it was

tested as the joint level. Thus, among the three measures of financial inclusion, currency outside banks is the leading causal factor for economic growth in Nigeria. This implies that the large proportion of money in circulation is held outside the banking sector

Further, the impulse response function in figure 4.3 show that the effects on real GDP growth of unexpected changes in both currency in circulation and currency outside the banking system are negative for up to three quarters but positive afterwards. According to Beck, Demirgüç-Kunt and Levine (2009), currency outside bank ratio indicates the degree of monetization of an economy and the size of the informal sector. The negative causal effect of this ratio, therefore, implies that the Nigerian economy is highly monetized and consists of large informal actors who prefer cash-based transactions and largely engage in unproductive activities. Thus, the rate of financial exclusion in Nigeria is still alarming as bulk of the money supply in Nigeria is outside the banking system. This is true despite several deliberate policy actions by successive governments to include more people in the formal financial system. Thus, the level of financial exclusion is positive function of currency outside the banking system, which in turn is a negative function of economic growth. In other words, an increase in currency outside the banking system would lead to a decrease in the rate of economic growth in Nigeria.

Besides, as shown in figure 4.4, the positive response of real GDP growth to an unexpected change in quasi money ratio to broad money up to the fourth period is consistent with our expectation *a priori*. However, the insignificance of the effect this important component of broad money supply can be due to their illiquid nature. In Nigeria, quasi money consists of savings and time deposits in the banking sector, which are less liquid compared to other components (currency outside bank and demand deposit) of broad money supply. Therefore, it is our view that because of the high financial exclusion rate, which has been linked to high costs associated with using formal financial services and inadequate provision of financial services, the Nigerian economy is still a liquid-based economy as majority of the people still prefer to hold their financial assets in cash or liquid form. Thus, an unexpected increase in quasi money (a less-liquid financial asset) does not significantly affect the productive activities of the real economic sector. The implication is that any macroeconomic policy that targets quasi money as a means of achieving economic growth in Nigeria may give undesirable outcome, unless it is complemented by an appropriate liquidity management policy. This findings is in agreement with that of Shittu (2012) and disagrees with the findings of Isukul and Dagogo (2018) and Andrianaivo and Kpodar (2011).

5. Summary and Conclusion

The analysis of the study show that there is a causal effect on economic growth of financial inclusion; measured by the joint influence of currency in circulation ratio to broad money, currency outside banks ratio to broad money and quasi money ratio to broad money. However, individually, only currency outside bank ratio is significantly related to economic growth. The study recommends that the Central Bank should as matters of policy persuade commercial banks to key into the Federal Government financial inclusion programmes by increasing their presence in the rural areas and reducing the cost of using financial services. This would give more rural adult population access to formal financial services and significantly reduce the degree of monetization of the economy. It would also help to significantly reduce the currency outside the banking system, whose current high level is adversely affecting the economy.

References

- Abuka, C., Alinda, R., Minoiu, C., Peydro, J.L & Presbitero, A.F (2015). Monetary policy in a developing country: Loan applications and real effects,” IMF working paper no. 15/270.
- Adegbite, E. O. (2004). Financial sector reform and economic development in Nigeria: The role of management. *A Paper Delivered at the Inaugural National Conference of the Academy of Management of Nigeria*, Abuja Nov 22-23
- Adu, G., Marbuah, J., & Mensah, T. (2013). Macroeconomic development and stock market performance: A non-parametric approach. *Economics and Econometrics Research Institute* 1-35. Research Paper Series No 01/2013
- Demirgüç-Kunt, A., & Levine, R.(2001). Bank-based and market-based financial systems: Cross-country comparisons. In A. Demirguc-Kunt, & R. Levine (Eds.), *Financial structure and economic growth: A Cross-country comparison of banks, markets, and development*. Cambridge, MA, MIT Press, 81-140.
- Isukul, A.C., & Dagogo, D.W. (2018). Resolving the problem of financial inclusion through usage of mobile telephone technology. *Journal of Banking and Finance*, 1(1), 1-17
- Levine, R. (2004). Finance growth, theory, evidence, and mechanism. *Handbook of Economic Review*, 88(3), 537-558.
- Luqman, S. (2014). Financial deepening and economic growth in Pakistan: An application of co-integration and VECM approach. *Interdisciplinary Journal of Contemporary Research in Business* 5(12), 368-381
- Nzotta, S. M., & Okereke, E. J. (2009). Financial deepening and economic development of Nigeria: An empirical investigation. *African Journal of Accounting, Economics, Finance and Banking Research*, 5(5), 52-66
- Odhiambo, N.M. (2011). Financial deepening, capital flows and economic growth nexus in Tanzania: A multivariate model. *Journal of Social Sciences* 28(1), 65-71
- Rajan, R. G., & Zingales, L. (2003). *Saving capitalism from capitalist*. Crown Business, New York.
- Rashti, N. A., Araghi, E. S., & Shayeste, M. (2014). Relationship between financial development and economic growth: Evidence from financial crisis. *Asian Economic and Financial Review*. 4(7), 930-940.
- Sackey, F. G., & Nkrumah, E. M. (2012). Financial sector deepening and economic growth in Ghana. *Journal of Economics and Sustainable Development*. 3(8), 122-139.
- Tabi, A. J., Njong, A. M., & Neba, C. (2011). Financial development and economic growth in Cameroon, 1970-2005. *Journal of Economics and International Finance*. 3(6), 367-375.