Impact of Monetary Policy on Bank Credit in Nigeria

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Abstract

Objective – The aim of this study is to examine the impact of monetary policy on credit creation ability of banks in Nigeria. Specifically, it investigates the impact of monetary policy rate, money supply, liquidity ratio, and change in maximum lending rate on bank credit in Nigeria.

Design/methodology – A monthly time series data from 2007-2019 were sourced from the Central Bank's of Nigeria statistical bulletin. The sourced data was subjected to multiple regression analysis using the fully modified ordinary least square regression to estimate the parameters of the model.

Results – Findings reveal that money supply significantly and positively influence bank credit in Nigeria; while liquidity ratio significantly but negatively influence bank credit in Nigeria. On the contrary, monetary policy rate and maximum lending rate were found not to significantly affect bank credit in the case of Nigeria.

Policy Recommendation - Study therefore, recommend that monetary authorities especially, the Central Bank of Nigeria should pay more attention to lowering the liquidity ratio while increasing money supply in order to engender banks credit creation ability and further stimulate the Nigerian economy for growth.

Keywords: Bank Credit, Liquidity Ratio, Maximum Lending Rate, Money Supply.

1. Introduction

Monetary policy is a deliberate and precise step taken by the monetary authority of any country to regulate the availability and cost of credit in the economy in pursuance of the desired macroeconomic objectives. These arrangements are designed in lieu of the legal framework that is in place to govern the financial practices of banks and consequently, influence the availability of financial resources (Ezenduyi, 2014; Nyong, 2011; Ojo, 2011). This makes the financial institutions particularly, the banking sector an important channel through which monetary policy objectives are effectively achieved. However, the transmission process of monetary policy to credit availability is not one way, as different opinions have emerged over time regarding the effectiveness of monetary policy channels (Afolabi, Adeyemi, Salawudeen, & Fagbemi, 2018). Intuitively, two major notion exist on how the banking sector help achieve monetary policy objectives. The notion that monetary policy is most effective through interest rates is agreed upon by economists and policy makers. For instance, a rise in interest rates occurs when there is decreased reserve provision through a tightened central bank policy (Ezirim, 2015). Such interest rates increase triggers reduced spending and particularly, investment spending as it propels an increase in the cost of borrowing (Afolabi et al., 2018). Interest rate increase also causes a reduced spending as interest sensitive sectors of the economy prefer to speculate thereby, earning more interest on their money rather than spending on durable goods (Imoisi, Olatunji, & Ekpenyong, 2013). This therefore, makes banks play a crucial role in this process. Again, the stock of money supply in the economy includes the deposit liabilities of banks; and a decrease in money supply is

typically a principal factor that raises interest rates (Onyeiwu, 2012). From this point of view, little is said about the unique role played by banks credit. Chowdhury, Hoffman, & Schabert (2013) argued that interest rate mechanism does not necessarily depend on the assets held by banks, and that same response would occur regardless of the proportions of assets held as loans or securities by banks. An alternative submission is that banks' ability to create credit through making new loans are constrained directly by monetary tools and consequently, lowers the availability of credit to borrowers who depend on bank's finances see: Ezirim (2015), Onyeiwu (2012) and Wrightman (2012). Therefore, restrictive monetary policy works not only by raising interest rates, but also by directly restricting bank credit.

Empirically, studies have revealed mixed findings on the special role of bank lending in the monetary transmission mechanism. Evidence exist that a segment of borrowers, especially small businesses rely heavily on banks for financing (Moussa & Chedia, 2014; Onoh & Nwachukwu, 2017; Onyemaechi, 2015). This supports the argument that disruptions in the flow of credit from banks could affect economic activity. On the contrary, empirical evidence also exist that bank lending is directly constrained by monetary policy actions (Chowdhury et al., 2013). This study therefore, contributes to the existing debate on whether monetary policy has any influence on banks credit creation in Nigeria. The other sections of this paper are organized as follows: section 2 presents the review of literature, while section 3 gives the details of the methodology employed in the analysis of data. The empirical results were presented and discussed in section 4, and section 5 concludes the study.

2. Conceptual Review

Theoretical link exist in the literature between monetary policy and bank credit for example, the money supply theory originally propounded by Nicolaus Copernicus in 1517, and later popularized by John Locke, David Hume, Milton Friedman, and Anna Schwartz in 1963 posits that the general price level of goods and services is directly proportionate to the cost of money in circulation or money supply. Particularly, it is total of all electronic, bank deposits, balance accounts along with the printed-paper notes and minted coins (Bibow, 2005). Dale (2007) argued that the interest rate is the quality of money over time that is paid for acceding payment of monetary debts. The money supply theory is linked to this research work in that money in a circulation has effect on bank lending behavior. This was also used by Loayza & Schmidt-hebbel (2012) among others.

The monetarist or Neo-classical theory was propounded by Milton Friedman in 1956. The role of monetary policy, which is of course controlling the volume, cost and direction of money supply was effectively interchanged by Friedman & Schwartz (2006) who emphasized that money supply is a key factor influencing the wellbeing of the economy. Therefore, in order to promote smooth growth rate, the money supply should rise at a fixed rate, instead of being regulated and changed by the monetary authority. Friedman argued that since money supply is substitutive not just for bonds but also for numerous goods and services, changes in money supply will therefore, have both direct and indirect impact on spending and investment respectively see: Ibeabuchi (2007); Onouorah, Shaib, Oyathelemi, & Friday (2011); and (Onyemaechi, 2015). This theory is linked to this research work in that monetary policy influences bank lending behavior in Nigeria. Theory was also adopted by Amacher & Ulbrich (2016); Gertler & Gilchrist (2011); and Onoh & Nwachukwu, (2017), among others.

Numerous studies have been conducted on monetary policy and bank lending in different parts of the world. This study therefore, review studies in view of those conducted in the developed, developing worlds, as well as those conducted in Nigeria. For example, Loupias, Savigna, & Sevestre (2011) investigated the impact of monetary policy on bank lending in France from 1993-2003 following (McAdam & Morgan, 2001). The study used a panel data set consisting of 312 banks and found that monetary policy

tightening decreases bank lending. Study also showed that banks' liquidity significantly affect their lending behaviour. However, the study focused only on the dimension of bank lending on monetary policy. Amidu (2006), examined whether bank lending is constrained by monetary policy in Ghana from 1998 to 2004. Study submitted that Ghanaian banks lending behaviour is controlled significantly by changes in money supply and country's economic activities. The findings of the study also conform to previous studies that the inflation rate and central bank's prime rate negatively but statistically influence banks lending. Nonetheless, the study distinct itself by indentifying monetary policy factors that affect bank lending behaviour in Ghana. However, the study considered only indirect monetary tools, while neglecting the direct instruments of monetary policy. Using a panel data of 24 banks Dhungana (2016) studied if bank lending and monetary transmission mechanisms are closely interlinked in Nepal from 1996 to 2015. The study concluded that the apex bank of Nepal should hold cash reserve ratio constant as a cushion for the borrowers due to the fluctuating lending rates of banks. Moreover, since excessive borrowing will have inflationary impact on the economy, the study recommended that Nepal's apex bank should commit banks to open market operations so as to influence short term interest rate and money supply in the economy. However, the study did not capture the entire indirect tools of monetary policy and also did not capture any direct tools. Using the Ordinary Least Square (OLS) method of econometric analysis Agbonkese & Asekome (2013) examined monetary policy on bank credit abilities in Nigeria from 1980 to 2010. Results showed a positive linear relationship between total credits, total deposits and treasury bills rate, while the reserve requirement ratio and interest rate had a negative relationship with total credits. The study inter alia recommended that the Central Bank of Nigeria (CBN) should not depend too much on reserve requirement as a monetary policy on credit creation but should rather emphasis on the open market operations, and monetary policy rate (MPR) that could influence the lending rates of banks. Although the study almost made use of entire monetary policy instrument to assess monetary policy impact on bank credit creation in Nigeria but the study neglected some instruments which are also important to credit creation. Greg, Udude, & Uwalaka (2015) investigated the impact of monetary policy on banking sector performance in Nigeria form 1970 to 2006. On overall, findings showed that monetary policy significantly affect bank deposit liabilities. Although, the study used monetary policy instruments such as bank deposits, interest rate, exchange rate, minimum discount rate to investigate the effect of monetary policy on performance of banking sector in Nigeria. However, the study neglected other instruments such as bank rate, open market operation and Central bank's lending among others. Afolabi et al. (2018) found that the monetary policy rate is the most significant variable that affects banks ability to create loans in Nigeria. It further argued that a positive and significant relationship exists between monetary policy tools and banks credit creation ability in Nigeria. Osakwe, Igwebuike, & Jude (2019) posited that liquidity ratio and monetary policy rate both have long run significant effect on banks credit creation ability as against the cash reserve ratio and Treasury bill rate, which shows a negative long run significant effect on banks' ability to create loans. On the contrary, Sulaiman (2020) argued that money supply is the most important variable which determines banks' ability to advance loans to the private sector.

The empirical review of literature showed that available studies in Nigeria have focused on the connection between monetary policy and bank lending. These studies however, measured effectiveness of monetary policy using open market operation, bank rate, rediscount rate, minimum reserve requirement and lending by Central bank (see: Agbonkese & Asekome (2013); and Greg et al., (2015). It is clear that the open market operation, bank rate, rediscount rate, minimum reserve requirement and lending by Central bank are only good measures of monetary policy effectiveness and not for bank lending behavior. It was also observed that most of the studies were conducted on a

cross-section firm level basis and this may not effectively capture the influence of monetary policy on an aggregate level (i.e. monetary policy rate). The few studies carried out on aggregate economy-wide basis are bewildered by methodological problems stemming from employing ordinary least squares on time series data (mostly annual data) without carrying out the necessary pre-estimation test which may lead to generating spurious regression results. This study therefore, fills the gap by investigating the phenomenon on an aggregate monthly time series basis in order to fully capture the influence of monetary policy.

3. Research Method

This section presents the model specification, sources of data, as well as measurement of variables.

Research Design

This study adopts the ex-post facto research design noting that the data for this study already exist without the researchers' prejudice.

Model Specification

The model of this study is specified based on the adapted model specified by Abuka, Alinda, Minoiu, Peydro, & Presbitero (2019) in their study to examine the effect of monetary policy on bank lending. Their model is stated as follows:

$$LG_{it} = \beta_0 + \beta_1 \Delta IR_{it} + \beta_2 \Delta GDP_{it} + \beta_3 CPI_{it} + \beta_4 CAP_{it} + \beta_5 LIQ_{it} + \varepsilon_i \quad (1)$$

Where: LG is loan granted, ΔIR is change in interbank rate, ΔGDP is gross domestic product, CPI is consumer price index, CAP is capital, and LIQ is liquidity. However, the use of gross domestic product (GDP) as a monetary policy tool by Abuka et al. (2019) is inadequate and not consistent with known fact in the literature and in the reality. Likewise, interbank rate is also a secondary rate and differs from the CBN's primary monetary policy rate; while banks capital and consumer price index used are fictitious tools, although could stand as control variables. This study therefore, modifies the model of Abuka et al. (2019) in equation (1) by including the monetary policy rate, broad money supply, liquidity ratio, and the maximum lending rate which are important variables of monetary policy as against GDP, capital, interbank rate and consumer price index used by Abuka et al. (2019). The model of this study is therefore, specified as follows:

$$logCredit_t = \alpha_0 + \alpha_1 MPR_t + \alpha_2 LIQR_t + \alpha_3 logM2_{it} + \alpha_4 DMLR_t + \varepsilon_i \quad (2)$$

Where: logCredit is logarithm of bank credit, MPR is monetary policy rate, LIQR is liquidity ratio, logM2 is logarithm of broad money supply, and DMLR is change in maximum lending rate

Source of Data and Measurement of Variables

The nature of date used in this study is secondary and were sourced from the statistics database of the Central Bank of Nigeria. The data used is a monthly time series date spanning from 2007-2019 and table 1 presents the description and measurement of variables used in this study.

Table 1. Measurement of Variables

S/N	Variable	Symbol	Measurement
1.	Bank Credit	logCredit	Natural log of total Credit created by banks
2.	Monetary Policy Rate	MPR	Lending rate from CBN to commercial banks
3.	Liquidity Ratio	LIQR	The ratio of total deposit held as reserves

4.	Broad Money Supply (M2)	logM2	Natural logarithm transformation of broad money supply
5.	Change in Maximum Lending Rate	DMLR	Difference of maximum lending rate in time (t) and maximum lending rate in time (t-1)

Source: Authors' Compilation (2020).

Method of Data Analysis

The analysis conducted in this study involves both the descriptive and inferential approaches. This study employed descriptive analysis to describe its variables using the summary statistics tools such as mean, standard deviation, minimum and maximum values. This study also employed inferential analysis using the multiple regression analysis and specifically, the fully-modified cointegrating regression to estimate the parameters of the model.

Further, relevant pre and post-estimation diagnostics checks were conducted. The Augmented Dickey-Fuller unit root test was used to identify the stationarity of each of the series in concern and to verify their order of integration. Thereafter, the Engle-Granger cointegration test was conducted to determine if there exist long-run relationships among the non-stationary series of the model. The variance inflation factor (VIF) was conducted to verify if there was no presence of multicollinearity in the model. F-statistic and R-squared were employed to examine the fitness of the model and the percentage of variations explained by the model respectively.

4. Results and Discussions

This section presents the results from both the descriptive and inferential approaches of the analysis. The section presents first, the descriptive results from time trend, summary statistics in form of the mean, standard deviation, minimum and maximum values, as well as correlation analysis. It then presents the results of inferential analysis, from the unit root test to cointegration test and to the fully modified regression analysis proper.

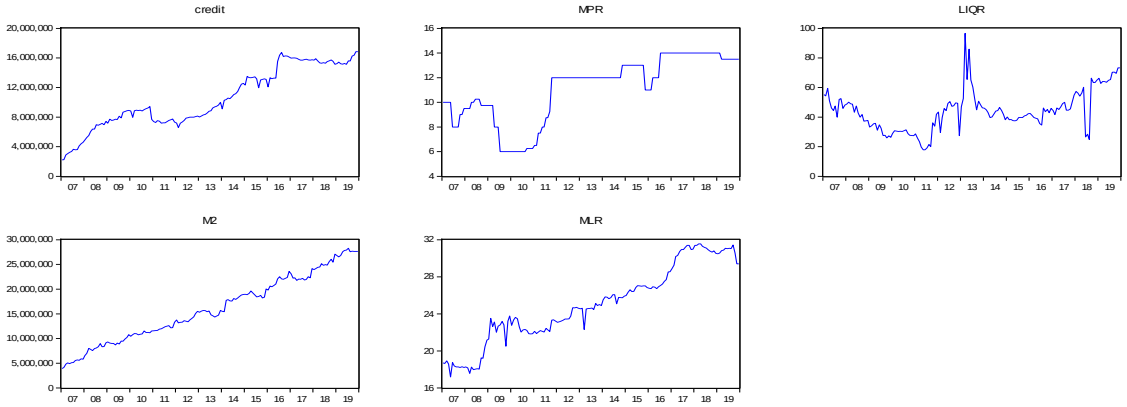


Figure 1. Time Trend of Variables

Figure 1 presents the time trend of each of the variables employed in this study. As for bank credit, the figure shows that it has been on a consistent increase from the beginning of this period till the end. Although, it experienced some drawbacks during the months of 2010 and 2011, as well as after the sharp rise in early 2016. As for the monetary policy rate, the figure shows that it has also been on the increase however, it experienced its all-time low in the period between 2009 and 2010. Liquidity ratio has been fluctuating over the period in concern. It experienced its highest rate in early 2013 and its lowest rates in mid-2011. Broad money supply has been so consistent in its increase over the period under investigation. Its lowest was experienced in the beginning of the

period while its highest was experienced at the end. Just like broad money supply, maximum lending rate has also been on an increase over the period under investigation. Although, there were some drawbacks to its increase along the way, but in the end, its value is far greater than what it started with.

Table 2. Summary Statistics Result

Variable	Mean	Maximum	Minimum	Std. Dev.
CREDIT	10.5trn	16.8trn	2.2trn	4.025trn
MPR	11.13	14.0	6.0	2.63
LIQR	44.04	96.61	17.87	13.45
M2	16.0trn	28.3trn	3.9trn	6.7trn
MLR	24.99	31.56	17.17	4.11

Source: Authors' Computations (2020).

Table 2 presents the summary statistics of these variables. As seen from table 2, bank credit (CREDIT) has a mean value of 10.5, standard deviation of 16.8, minimum of 2.2 and maximum of 4.02. This indicates that the average bank credit created in Nigeria over the period under investigation was 10.5 trillion naira. The month with the lowest credit created has 2.2 trillion, while the month with the maximum credit created recorded 16.8 trillion naira. Monetary policy rate (MPR) in the country has a mean value of 11.13, standard deviation of 2.63, minimum of 6.0 and maximum of 14.0. This indicates that on the average, Nigeria has a monetary policy rate of 11.13 percent, which is minimally dispersed over this period by 2.63 percent. The month with the lowest monetary policy rate has 6.0 percent while the month with the maximum monetary policy recorded 14.0 percent.

As for the summary statistics of liquidity ratio, the results show a mean value of 44.04, standard deviation of 13.45, minimum of 17.87 and maximum of 96.61. This indicates that on the average, Nigeria recorded a liquidity ratio of 44.04 percent, which is minimally dispersed over this period by 13.45 percent. The month with the lowest liquidity ratio has 17.87 percent while the month with the maximum liquidity ratio recorded 96.61 percent. Broad money supply (M2) has a mean value of 16.0, standard deviation of 6.7, minimum of 3.9 and maximum of 28.3. This indicates that average broad money supply in Nigeria over the period under investigation was 16.0 trillion naira. While the month with the lowest broad money supply has 3.9 trillion naira, the month with the maximum money supply recorded 28.3 trillion naira. Maximum lending rate (MLR) in the country has a mean value of 24.99, standard deviation of 4.11, minimum of 17.17 percent and maximum of 31.56 percent. This indicates that on the average, Nigeria recorded a maximum lending rate of 24.99 percent, which is minimally dispersed over this period by 4.11 percent. The month with the lowest maximum lending rate has 17.17 percent while the month with the highest maximum lending rate recorded 31.56 percent.

Pairwise Correlation Analysis

The correlation analysis results conducted for the variables of this study are presented in table 3. The logarithm transformation of bank credit and broad money supply were taken. Also, the change in maximum lending rate was used in the regression analysis in order to avoid multicollinearity problems.

Table 3. Results of Correlation Analysis

	logCredit	MPR	LIQR	logM2	DMLR
logCredit	1.00				
MPR	0.634***	1.00			
	(0.000)				
LIQR	0.204***	0.566***	1.00		
	(0.011)	(0.000)			
logM2	0.951***	0.744***	0.328***	1.00	
	(0.000)	(0.000)	(0.000)		
DMLR	0.006	0.037	-0.111	-0.014	1.00
	(0.939)	(0.645)	(0.168)	(0.861)	

Source: Authors' Computations, 2020. Note: Probability in parentheses *** p<0.01, ** p<0.05, * p<0.1

The results of correlation analysis presented in Table 3 show that log of bank credit

has significant relationship with monetary policy rate, liquidity ratio, log of money supply and change in maximum lending rate. The relationship between log of bank credit and each of these variables is positive, indicating that bank credit is moving in the same direction with them and that higher levels of bank credit are associated with higher levels of monetary policy rate, liquidity ratio, money supply and change in maximum lending rate.

Monetary policy rate is seen in the result to have significant relationships with liquidity ratio, and log of money supply but insignificant relationship with change in maximum lending rate. The relationship between monetary policy rate and each of liquidity ratio and money supply is positive, indicating that monetary policy rate is moving in the same direction with them and higher levels of monetary policy rate are associated with higher levels of liquidity ratio and money supply.

Liquidity ratio is seen in the result to have significant relationship with log of money supply but insignificant relationship with change in maximum lending rate. The relationship between liquidity ratio and money supply is positive, indicating that liquidity ratio is moving in the same direction with money supply and higher levels of liquidity ratio are associated with higher levels of money supply.

Log of money supply is seen in the result to have insignificant relationship with change in maximum lending rate. The relationship between money supply and change in maximum lending rate indicates that there is no significant relationship between money supply and change in maximum lending rate.

The items on the principal diagonal of the matrix show the relationship between a variable and itself, which is 1 (100 percent). The results generally show that none of these correlation coefficients have values above 0.8, which is the threshold above which will result to a problem of severe multicollinearity. This implies that all these variables can be included in the same model without any fear of severe multicollinearity.

Unit Root Test

Prior to the estimation of the regression model, the unit root test was conducted and presented in table 4. This test is important to verify if the variables of the model are stationary, a prerequisite for time series analysis, and to reveal their order of integration.

Table 4. Augmented Dickey Fuller Unit Root Test

Variables	Stationary	t-statistic	Crit. Val. At 5% level	P-value	Order of Integration
logCredit	At level	-2.5512	-3.4390	0.1217	I(1)
	At First Diff.	-13.0713	-3.4392	0.0000	
MPR	At level	-2.0720	-3.4390	0.5569	I(1)
	At First Diff.	-11.822	-3.4392	0.0000	
LIQR	At level	-2.8721	-3.4396	0.1746	I(1)
	At First Diff.	-9.2891	-3.4396	0.0000	
logM2	At level	-2.6634	-3.4390	0.1312	I(1)
	At First Diff.	-10.4265	-3.4394	0.0000	
DMLR	At level	-1.2977	-3.4392	0.5387	I(1)
	At First Diff.	-13.8070	-3.4400	0.0000	

Source: Authors' Computation (2020).

Table 4 presents the stationarity test using ADF test. Results reveal that all the variables are not stationary at 5% significance level. However, all variables became stationary after first difference hence, regarded as I(1) series.

Cointegration Test

Since the unit root test conducted shows that the variables are integrated of order 1 i.e., I(1), a cointegration test was conducted to verify the long run equilibrating

relationship among the non-stationary variable using the Engle-Granger single equation cointegration test as presented on table 5.

Model	tau-statistic	p-value	z-statistic	p-value
Bank Credit Model	-15.442	0.0382	-35.326	0.0317

Source: Authors' Computations (2020).

Table 5. Engle-Granger Single Equation Cointegration Test

Results on table 5 show that both the tau and z statistic are statistically significant at 5% level of significance and therefore, suggests the rejection of null hypothesis. Results therefore, suggest that a long run association exist among the non-stationary series in the model.

The regression result is presented on table 6 below. The reported R-squared value of 0.914 indicates that about 91.4 percent of variation in bank credit in Nigeria is explained by the factors considered in the model. The reported F-statistic value of 113.2 also indicates that the variables are jointly significant in affecting bank credits in Nigeria at 1% significance level. This is evident from its p-value (0.000) being less than 0.01.

Variable	Coefficient	Std. Error	t-Statistic	Prob.
MPR	-0.0160	0.0129	-1.2446	0.2152
LIQR	-0.0036	0.0017	-2.0320	0.0439
LOGM2	0.9889	0.0649	15.2307	0.0000
DMLR	0.0222	0.0329	0.6742	0.5012
C	0.1193	0.9838	0.1213	0.9036
R-squared	0.9145			
Adjusted R-squared	0.9122			
F-statistic	113.2			0.000.

Source: Author's Computations (2020). Note: *** p<0.01, ** p<0.05, * p<0.1

Table 6. Fully-Modified Cointegrating Regression Result

Results on table 6 reveal that liquidity ratio and log of broad money supply have statistically significant coefficients while monetary policy rate and maximum lending rate do not have statistically significant coefficients. This indicates that only liquidity ratio and broad money supply exert significant impacts on bank credit while other variables do not have significant impact on bank credit. Liquidity ratio is significant at 5% significance level while money supply is significant at 1% significance level. The coefficient of money supply indicates that a percent increase in money supply will result to approximately 0.989 percent increase in bank credit in Nigeria. This implies that more effort to bring an increment to the amount of money in circulation will result to an increment in bank credit creation in Nigeria, while the coefficient of liquidity ratio indicates that a percent point increase in liquidity ratio will result to 0.362 percent (i.e. 0.00362*100) increase in bank credit in Nigeria. This implies that an attempt to bring an increment to the share of deposits being kept in reserves will result to a decline in bank credit in Nigeria.

Summarily, this study found that monetary policy rate, i.e., the rate at which central bank lends to commercial banks, and the maximum lending rate i.e., the highest rate which banks charge on loans, are not influential in affecting the level of bank credit in Nigeria. Although, it is expected that the maximum lending rate would have an impact, particularly, a positive impact on bank credit since higher maximum rate would give better chance and incentives to banks to lend out more credit. Their insignificant impact may be as a result of the inelasticity of lending rate to loan applications and creation in the Nigerian context. Specifically, banks have been recently reported to be mostly reliant on bank charges has a very large proportion of their income instead of the rate on loans. This finding is not in conformity with the money supply theory and also negates the findings of (Agbonkese & Asekome, 2013; Greg et al., 2015; Loupias et al., 2011).

Based on the impact of liquidity ratio on bank credit in Nigeria, this study found that liquidity ratio negatively influences the level of bank credit in Nigeria. Since higher liquidity ratio is related to having higher reserve ratio which will limit the ability of banks to create credit. This finding is in consonance with that of (Moussa & Chedia, 2014; Ogbulu & Torbira, 2012).

As to the impact of money supply on bank credit in Nigeria, this study found that money supply positively influences the level of bank credit in Nigeria. Since increase in the amount of money in circulation (through a deliberate increase in money supply) will give banks more ability to create credit. Findings conform with those of (Agbonkese & Asekome, 2013; Greg et al., 2015; Moussa & Chedia, 2014).

5. Conclusion

This study concludes that money supply and liquidity ratio influence deposit money banks credit creation ability in Nigeria, while the monetary policy rate and the maximum lending rate do not impact on banks credit in Nigeria. This study therefore, recommend that monetary authorities especially, the Central Bank of Nigeria should pay more attention to lowering the liquidity ratio while increasing money supply in order to engender banks credit creation ability and further stimulate the Nigerian economy for growth.

References

Abuka, C., Alinda, R. K., Minoiu, C., Peydro, J., & Presbitero, A. (2019). Monetary policy and bank lending in developing countries: Loan applications, rates and real effects. *Elsevier*, *139*, 185–202.

Afolabi, M. A., Adeyemi, K. K., Salawudeen, O. S., & Fagbemi, T. O. (2018). Monetary policy & bank credit in Nigeria: A Toda-yamamoto approach. *Economica*, *14*(5), 717–735.

Agbonkese, A. I., & Asekome, M. O. (2013). Impact of monetary policy on bank creation in Nigeria. *International Journal of Business & Social Sciences*, *4*(15), 160–165.

Amacher, R. C., & Ulbrich, H. H. (2016). *Principles of macroeconomics*. Cincinnati, Ohio: South Western Publishing Co.

Amidu, M. (2006). The link between monetary policy and banks lending behavior: The Ghanaian Case. *Banks and Banks System*, *1*(4), 38–48.

Bibow, J. (2005). Some reflections on Keynes finance motive for the demand for money. *Cambridge Journal of Economics*, *19*(5), 647–666. Retrieved from https://ideas.repec.org/a/oup/cambje/v19y1995i5p647-66.html

Chowdhury, I., Hoffman, M., & Schabert, A. (2013). Inflation dynamics and the cost channel of monetary transmission. *European Economic Review*, *50*, 995–1016.

Dale, S. (2007). Interest rates and the channels of monetary transmission; Some sectoral estimates. *European Economic Review*, *39*, 1611–1626.

Dhungana, N. T. (2016). Effects of monetary policy on bank lending in Nepal. *International Journal of Business and Management Review*, *4*(7), 60–81.

Ezenduyi, F. U. (2014). The effects of monetary policy in performance of banking industry in Nigeria. *CBN Economic and Financial Review*, *32*(3), 85–99.

Ezirim, F. (2015). Impact of bank lending on liquidity of banks in Nigeria. *IJJS Publication*, *2*, 44–56.

Friedman, M., & Schwartz, A. (2006). Money and business cycles. *Review of Economics and Statistics*, 32–64.

Gertler, M., & Gilchrist, S. (2011). *Monetary policy, business cycles and the behaviour of small manufacturing firms*. *Working Paper 3892, National Bureau of Economic Research*. Cambridge, MA USA.

Greg, E. E., Udude, C. C., & Uwalaka, H. I. (2015). Impact of monetary policy on the banking sector in Nigeria. *International Journal of Economics, Commerce, & Management*, *3*(5), 1015–1031.

Ibeabuchi, S. N. (2007). Overview of monetary policy in Nigeria. *Central Bank of Nigeria Economic and Financial Review*, *45*(44), 15–37. Retrieved from

http://library.cbn.gov.ng:8092/jspui/handle/123456789/97

Imoisi, A. I., Olatunji, L. M., & Ekpenyong, B. I. (2013). Monetary policy and its implications for balance of payments stability in Nigeria: 1980-2010. *International Journal of Economics and Finance*, *5*(3), 196–204.

Loayza, N., & Schmidt-hebbel, K. (2012). *Monetary policy functions and transmission mechanisms: An overview*.

Loupias, C., Savigna, F., & Sevestre, P. (2011). *Monetary policy and bank lending in France: Are there Asymmetries? European central bank working paper series*.

McAdam, P., & Morgan, J. (2001). Effects of Euro area interest rate changes: Evidence from macroeconomic models. *Sage Journals*, 93–103. Retrieved from https://journals.sagepub.com/doi/abs/10.1177/00279501041871008

Moussa, A., & Chedia, S. (2014). Bank loans and monetary policy tools: An empirical analysis. *International Journal of Sustainable Development*, *2*(12), 2201–2222.

Nyong, M. O. (2011). Monetary policy and the performance of commercial banks. *CBN Economic and Financial Reviews*, *34*(3), 777 – 795.

Ogbulu, O. M., & Torbira, L. L. (2012). Monetary policy and the transmission mechanism: Evidence from Nigeria. *International Journal of Economics and Finance*, *4*(11), 122–133.

Ojo, M. (2011). *Government borrowing money supply and monetary policy in Nigeria*. Lagos: Macmillan Press.

Onoh, J. O., & Nwachukwu, T. (2017). Monetary policy and credit delivery in commercial banks –Evidence from Nigeria. *International Journal of Social Sciences and Management Research*, *3*(7), 2545–5303.

Onouorah, A., Shaib, I. O., Oyathelemi, E., & Friday, O. I. (2011). The impact of monetary policy on micro-economy and private investment in Nigeria. *Research Journal of Finance and Accounting*, *2*(6), 65–81.

Onyeiwu, C. (2012). Monetary policy and economic growth of Nigeria. *Journal of Economics and Sustainable Development*, *3*(7), 62–88.

Onyemaechi, J. O. (2015). *Monetary theory and policy*. Victoria Island, Lagos.

Osakwe, A. C., Igwebuike, A. L., & Jude, O. E. (2019). Effect of monetary policy instruments on banking sector credit in Nigeria. *Advance Journal of Management, Accounting and Finance*, *4*(4), 32–45.

Sulaiman, Z. A. (2020). Money supply and private sector funding in Nigeria: A multi-variant study. *Asian Finance and Banking Review*, *4*(1), 24–41.

Wrightman, P. (2012). Monetary policy and bank performance in Nigeria: A two-step cointegration approach. *African Journal of Scientific Research*, *9*(1), 463–468. Retrieved from https://fliphtml5.com/ygov/nces/basic