UMYU Journal of Accounting and Finance Research. Vol. 5 No.1 June 2023, pp 84 – 96.
https://doi.org/10.61143/umyu-jafr.5(1)2023.007
ISSN: 2795-3831
E-ISSN: 2795-3823

MONETARY POLICY AND COMMERCIAL BANKS' CREDIT TO AGRICULTURAL SECTOR: A STUDY OF NIGERIA.

Tajudeen Idera Abdulmajeed[1], Salihu Liman Mairafi[2], PhD and *Yahya Uthman Abdullahi, PhD[3]
[1&2]Department of Banking and Finance, Nasarawa State University, Keffi, Nigeria.
[3]Department of Accounting, Yusuf Maitama Sule University, Kano, Nigeria.

Corresponding Address: yahyauthman80@gmail.com

Abstract

This study examines the relationship between monetary policy and commercial banks credit to agricultural sector in Nigeria with uses of secondary data for the period 1981 to 2021 by applying Autoregressive Distributed Lag technique. Result from this study shown that, liquidity ratio, monetary policy rate, loan to deposit ratio and cash reserve ratio have no significant influence on commercial banks credit to agricultural sector in Nigeria. On the other hand the treasury bill ratios has significant positive effect on commercial banks credit allocated to agricultural sector in Nigeria. The study therefore recommends that Central Bank of Nigeria should cuts down the cash reserve ratio to encourage the loanable funds available with the banks. Regulatory authority should put in place suitable policy that will prevailing cash hoarding in the economy to achieve desired liquidity ratio level. CBN should use the loan to deposit to center for regulating and moderating commercial banks for a positive significant impact to sectors in Nigeria. Authorities should use monetary policy rate to expand the volume of commercial banks' ability to grant credits. Finally, monetary policy authority should ensure that holding of treasury bills by commercial banks should be reduced to enhance the ability to grant loans and advances to the public for productive purposes.

Keywords: *Monetary Policy, Commercial Banks Credit, ARDL, Co-integration, Agricultural sector.*

INTRODUCTION

Agricultural sector has been treasured the economic growth before the sighting and exploration of oil in Nigeria. The part agricultural sector take has continued to yield overtime due to its significant in national structure (Emmanuel, 2008). In Nigeria, different policies had been design in financing the agriculture to enhance their productivity. The policies set up by the federal government attached with commercial banks over the credit lending to farmers to produce more food to feed its growing population, create employment prospect and provide resources for activities (Jonathan & Cynthia, 2017).

The monetary policy instruments comprise capital adequacy ratio, , monetary policy rate, cash reserve requirement, treasury bill ratio, liquidity ratio, loan to deposit ratio, open market operations to stimulus the movement of investments. According to Ogunyemi (2013),

ISSN: 2795-3831
E-ISSN: 2795-3823

indicated that some monetary policy tools in Nigeria like liquidity ratio and monetary policy rate was harmful to increase commercial banks loans and advances due to poor groundwork services and the cost of operating that is high in recent time. However, the percentage of cash reserve ratio is commercial banks required to be deposited at the central bank of Nigeria in cash reserve ratio (CRR) account without earns interest, which means, the more the cash reserve ratio the less commercial banks to perform their duty in term of loan (CBN, 2013). Liquidity ratio holds the short-term liquidity risk as well to tackle a bank's liabilities and determining the soundness of the banking sector. The Bank for International Settlement (2014) necessitates this ratio to be at least 60 percent with the high-quality measure

However, monetary policy rate (MPR) sees as official interest rate of the monetary authority anchors all other interest rates in financial market and economy. MPR as being unstable and such numerous changes could affect banks' to supply loan to any sectors which turned could impact on the general economy (CBN, 2004). Loan-to-deposit ratio policy was purposely to control the spurs for pointless competition among banks, to surge their business sizes and improving the liquidity confusions before and during financial crises (Lopez-Espinosa et al., 2012). Treasury bill rate is used to substitute for the return on the government's debt instruments. High Treasury bill rates can result to positive effect on commercial bank's outlay in Government's instrument to leads to higher interest rates on loans and advances (CBN, 2019).

Moreover, Innumerable policies have been made accessible to provide agricultural finance assigned to commercial banks to provide to loans and advanced to farmers. Nevertheless, the part has not been able to grab as a result of higher interest rates charge with conditions of collateral (Anthony et al., 2015). The assessment of commercial bank in the area of loans and advances can be measured via monetary policy tools and market intervention portfolio (Jegede, 2014). Therefore, many empirical studies conducted domestically and globally focused on monetary policy and commercial banks credit to agricultural or on economic growth (see: Umeh et al., 2021; Steven et al., 2020; Asukwo et al., 2020; Peter, 2019; Anthony et al., 2019; Osakwe et al., 2019; Alenyi, 2018; Duruechi, 2018; Ogolo, 2018; Olaoluwa and Shomade, 2017; Chris et al., 2016; Apere & Karimo, 2015; Matemilola, 2014; Owolabi and Adegbite, 2014; Victor & Eze, 2013). This study carried out to address the gap in terms of variables measurement in literature on the monetary policy and credit supply by commercial banks to agricultural sector in Nigeria from1981 to 2021. Alongside this background, the remaining section on this paper is structured as follows. Section two is the literature review, the third division introduces methodology. The fourth and final sections present the analysis of results and conclusion and recommendations respectively.

LITERATURE REVIEW

In Nigeria, monetary policy term ponder by the authority whose objective is to regulate the money source and credit form in the persistence to attain positive general economic unbiased (Ojo, 2002; Jhingan, 2013; Onuorah et al., 2011). Monetary policy is an economic strategies of the government presumed the apex bank in the country to increase macroeconomic stability

ISSN: 2795-3831
E-ISSN: 2795-3823

and to encourage economic growth (Hillary et al., 2018). Commercial banks objective is to provide an individual, government, firm or organization the loans (CBN, 2019). Agricultural sector expansion depends on the effect of macroeconomic policies in term of financial variables with productive objectives that would unintended destructive results on agriculture (Aroriode & Ogunbadejo, 2014).

Theoretically, monetary circuit theory and credit rationing theory was adopted. Graziani framed the Monetary Circuit Theory (1989) engaged that central bank cannot make attempt operative to regulate over the money supplied due to unpredictable with the CBN role. The classic further outlines anytime cash reserve requirement is proven by the specialist, banks have uncontrolled contact to the monetarist vile because the authority required to implement an accommodative behavior and to certify steadiness between demand, supply of money and total liquidity of the structure. Money hoard is inevitable to match the demand existing level of interest rates since of accommodative performance, functions and universal practice that will parade by the central in banking systems (Keen, 2009).

Credit Rationing Theory was propounded by (Stiglitz and Weiss, 1981; Bester, 1985; Cressy, 1996; Baltensperger and Devinney, 1985). Credit rationing at financier level befalls in a point where demand exceeds supply of credit at the essential interest rate (Stiglitz and Weiss, 1981). On the other hand self-rationing is states where credit rationing is voluntary, that is where borrowers didn't seek for credit due to individual, values or communal reasons or could be discouraged (Arora, 2014). Bester (1985) recommended that investors may select some borrowers due to their negative acts. Likewise, complex interest payments form spur investors to select projects with a higher possibility of economic failure (Afonso & Aubyn, 1997, 1998; Matthews & Thompson, 2014). However, a rise in collateral requests may also result in a weakening the lender's profits in fixed rate of interest (Cressy, 1996). According to Andretti (1983), stated that if investors set collateral requirements and the rate of interest to monitor investors' hazardousness, so no credit rationing will occur at firmness.

Empirically, much research has carried out in the area of monetary policy and commercial banks credit allocated to agricultural sector. Umeh et al. (2021) survey the monetary policy and commercial banks' supplied to agriculture credit for the period from 1985-2017. ARDL techniques were used. The study therefore, discovered that cash reserve ratio positively significant on commercial banks' credits supplied to agriculture in Nigeria, monetary policy rate reports positive but insignificantly with commercial banks' credit supplied to agricultural sector in Nigeria, liquidity ratio has positive and not significantly on commercial banks' credit to agricultural sector in Nigeria. Therefore, the study reported short-run relationship between monetary policy indicators and the commercial banks' credit supplied to agriculture in Nigeria.

Asukwo et al. (2020) observes the Commercial banks' Lending and Agricultural Sector's growth in Nigeria. Data sourced secondarily, with uses of multiple regressions statistical technique. The study revealed a positive significant correlation between loans and advances, liquidity ratio and bank asset and interest rate on agricultural output in Nigeria.

ISSN: 2795-3831
E-ISSN: 2795-3823

Using annual facts source from CBN for the period from 1981 to 2019 with OLS regression model in the study conducted by Steven et al. (2020) on monetary policy and agricultural sector gross domestic product in Kenya. The findings revealed that broad money supply positively influence agricultural GDP while exchange rate negatively impacted performance agricultural sector.

Anthony et al. (2019) assesses cash reserve requirement and credit to SMEs in Nigeria with annual data from 1981-2017. ARDL model was used to capture objectives. Cash reserve ratio insignificantly impacted Credit allocated to SMEs in Nigeria and lending interest rate negatively but significant impact on Credit supplied to SMEs in both short and long run in Nigeria

Peter (2019) investigates monetary policy and deposit money banks performance in Nigeria. Secondary data were composed from CBN statistically bulletin from 1986 to 2015. Regression techniques were used to conducted analysis. The study shown that money supply, monetary policy rate and cash reserve ratio positively significant with credit supplied to the private sector while liquidity ratio negative and insignificant relationship with credit supplied to private sector in Nigeria.

Osakwe et al. (2019) evaluate monetary policy and banking sector credits in Nigeria. Data analyzed indicated the long run relationship between monetary policy variables and bank credit in Nigeria. Liquidity ratios and monetary policy rate positively significant with banking sector credits allocated in Nigeria while cash reserve ratio and treasury bill rate negatively significant in long-run on the credit allocated by bank in Nigeria.

Alenyi (2018) investigate monetary policy tools and commercial banks loan and advance supplied to agricultural sector in Nigeria over period from1980 to 1995. The multiple regression analysis was used. It was revealed that liquidity ratio and cash reserve ratio were opposing the credit supplied to agriculture sector in Nigeria while discount rate and lending interest rate were positively connected credit supplied to agriculture sector in Nigeria

Duruechi (2018) tested monetary policies and deposit money banks credit allocated to all sectors in Nigeria from 1988 to 2016. The data sourced secondarily and OLS estimations were adopted. Findings revealed long-run connection between monetary policies and deposit money banks sectoral credit. The study publicized that only monetary policy rate (MPR) and cash reserve ratios (CRR) were the policy tools that impact significantly on deposit money banks total sectoral credit.

Ogolo (2018) examined monetary policy and commercial banks' loaning to the real sector from 1981 to 2014. Annual time series data were sourced secondarily. The results found that monetary policy rate and interest rate positively connected with commercial banks' loaning to the agricultural sector while exchange rate, liquidity ratio, money supply and Treasury bill rate negatively affects commercial banks' lending to the real sector in Nigeria. Furthermore, exchange rate, liquidity ratio, money supply interest rate and Treasury bill rate negatively

ISSN: 2795-3831
E-ISSN: 2795-3823

affect commercial banks' credit lend to manufacturing sector. Finally, monetary policy rate positively affects commercial banks' credit supply to manufacturing sector..

Olaoluwa and Shomade (2017) reviewed monetary policy and commercial banks' loan and advance behaviour in Nigeria. Data were extracted from CBN Statistical Bulletin from 1980 to 2014. OLS techniques were used. The finding indicated long run correlation between monetary policy and commercial banks' loan and advance behavior in Nigeria.

Chris et al. (2016) appraised commercial banks' credit allocated to agricultural production in Nigeria. OLS regression technique was employed. Based on the results, positive and significant existence was found between agricultural credit guarantee structure fund and agricultural output in Nigeria. Also positive and significant relationship exist between commercial banks loan and advance to agricultural sector in Nigeria. Again, positive and significant relationships were obtained between government outflow and agricultural production in Nigeria and interest rate and agricultural output were negatively existence in relationship.

Omankhanlen et al. (2015) explored monetary policy rate and commercial banks' loan risk coverage in Nigeria. The data were secondarily and analyzed with OLS techniques. The study reveals that lending rate negatively significant backing of loans and advances. However, the study also revealed that monetary policy rates positively significant with commercial banks loans and advance in Nigeria. In another development, similar study was conducted by Apere and Karimo (2015) to determine monetary policy and bank credits supply to Nigeria economy from 1981 to 2013. The results revealed negative connection between money supply and banks' credit to the economy in Nigeria. Monetary policy rate positively affect banks' credit allocated to economy in Nigeria. Whereas money supply and banks credit supply to the economy answers positive relationship in Nigeria.

In a similar studied carried out by Matemilola (2014) to examine monetary policy and bank lending rate. Data extracted quarterly from 1978: 1 to 2012: 4. The result revealed that bank lending rate response faster to decrease the monetary market rate while commercial banks adjust their lending rates skyward to support the customer response postulate and opposing selection postulate.

METHODOLOGY

In this study, ex-post facto research design was applied to examine monetary policy and banks credit supplied to agricultural sector in Nigeria for the period of 1981 to 2021. This study used time series data sourced from Central Bank of Nigeria (CBN) statistical bulletin. The autoregressive distributed lag model was in estimating the nexus among the series. In addition, diagnostic test were conducted to ensure all data are in the same measure and to avoid the problem of multicollinearity, serial correlation, heteroscedasticity and normality test. Monetary policy was proxied by liquidity ratio, loan to deposit ratio, treasury bill ratio, cash reserve ratio and monetary policy rate and while commercial banks credit was proxies by

ISSN: 2795-3831
E-ISSN: 2795-3823

commercial banks loan and advance allocated to agricultural sector in Nigeria

Model specification

To apprehend the relationship between the monetary policy and commercial banks credit allocated to agricultural sector in Nigeria. This study adopted the model from the work of Chinedu and Ezekwe (2021) with some modifications. Thus, the model is given as:

This study specified ARDL model in equation (1) below

$$\Delta InCCB_t = \alpha + \sum_{i=1}^{n} \Psi_{1i}\, \Delta \mathrm{InCCB}_{t-1} + \sum_{i=0}^{n} \Psi_{2i}\, \Delta \mathrm{InCRR}_{t-i} + \sum_{i=0}^{n} \Psi_{3i}\, \Delta \mathrm{InLIQ}_{t-i} + \sum_{i=0}^{n} \Psi_{4i}\, \Delta \mathrm{InLTD}_{t-i} + \sum_{i=0}^{n} \Psi_{5i}\, \Delta \mathrm{InMPR}_{t-i} + \sum_{i=0}^{n} \Psi_{6i}\, \Delta \mathrm{InTBR}_{t-i} + \beta_{1i} \Delta \mathrm{InCCB}_{t-1} + \beta_{2i} \Delta \mathrm{InCRR}_{t-1} + \beta_{3i} \Delta \mathrm{InLIQ}_{t-1} + \beta_{4i} \Delta \mathrm{InLTD}_{t-1} + \beta_{5i} \Delta \mathrm{InMPR}_{t-1} + \beta_{6i} \Delta \mathrm{InTBR}_{t-1} + \gamma_7 ECT_t + \mu_t \qquad (1).$$

Where: CCB – Commercial Banks Credit to Agricultural sector, CRR – Cash Reserve ratio, LIQ – Liquidity Ratio, LTD – Loan to Deposit Ratio, MPR – Monetary Policy Rate, TBR-Treasury Bill Ratio; Δ = first difference operator; α= the drift component; μ_t = the error term; β_1 - β_6 - the parameters of the short-run dynamics of the model; Ψ_1 -Ψ_6 - the parameters of the long-run relationship; γ_7 -the coefficient of the error correction term (ECT). Theoretically, measurement of independent indicators is expected to be negative, that is, impacting the dependent variable negatively: $\alpha 5 < 0$.

RESULT AND DISCUSSION

Table 1: Summary of Descriptive Statistics

	CCB	CRR	LIQ	LTD	MPR	TBR
Mean	192.6141	9.653659	49.09756	67.48268	13.00000	12.79634
Median	48.56000	8.000000	46.23000	66.90000	13.00000	12.50000
Maximum	1457.820	27.50000	104.2000	96.82000	26.00000	26.90000
Minimum	0.590000	1.100000	26.39000	37.56000	6.000000	4.500000
Std. Dev.	317.8072	7.539002	14.69148	13.50897	3.959167	4.884910
Skewness	2.293063	1.001659	1.455989	-0.209460	0.734305	0.391721
Kurtosis	8.304804	2.951513	6.355396	2.605606	4.542775	3.077358
Jarq-Bera	84.00472	6.860043	33.71959	0.565528	7.750652	1.058767
Prob.	0.000000	0.032386	0.000000	0.753697	0.020748	0.588968
Obs.	41	41	41	41	41	41

Source: Authors' compilation using E-Views Version10.

The summary statistics presented in table above indicate that, average value of credit of commercial banks allocated to Agricultural sector from 1981 to 2021 to be 192.6% and the related minimum and maximum values are 0.59% and 1457.8% respectively. Seeing its standard deviation of 317.8 exceeded the average value credit of commercial banks, is considered to present wide dispersion from its average value 192.6%. The variable commercial bank credit to agricultural sector is not symmetric around its mean, still positively skewed is 2.29 and its kurtosis is 8.30 well above 3. The Jarq-Bera statistics is 84.0 with a very low probability value (0.0000), submitted that the variable is not normally distributed.

ISSN: 2795-3831
E-ISSN: 2795-3823

Moreover, the descriptive statistics of the variables revealed that, 9.65%, 49.09%, 67.48%, 13.00 and 12.79% constitute the mean values for treasury bill ratio, liquidity ratio, Loan to deposit ratio, cash reserve ratio and monetary policy rate in Nigeria respectively, for the period 1981 to 2021. To considered the mean values with the standard deviation, it shows that all the independents variables regarded as relatively stable around their mean because they were exceeded std. Dev. Considering the skewness the variable cash reserve ratio and liquidity ratio were positive due to more higher values, loan to deposit ratio are negative value and monetary policy rate and treasury bill ratio consider to be normal values. The result of Kutosis shows that liquidity ratio and monetary policy rate consider being positive, cash reserve ratio and liquidity ratio were of negative values and treasury bill ratio to be normally distributed. The Jarque-Bera statistics, loan to deposit ratio and treasury bill ratio were normality distributed while cash reserve ratio, liquidity ratio and monetary policy rate are seen not to be normally distributed.

Table 2: Correlation Matrix

Corr. Prob.	CCB	CRR	LIQ	MPR	TBR	LTD
CCB	1.000000					
CRR	0.696314	1.000000				
	0.0000	-----				
LIQ	0.231913	0.421207	1.000000			
	0.1446	0.0061	-----			
MPR	0.029670	0.052549	0.066174	1.000000		
	0.8539	0.7917	0.6810	-----		
TBR	0.197765	0.183110	-0.035591	0.794328	1.000000	
	0.2152	0.2518	0.8252	0.0000	-----	
LTD	-0.328781	-0.266209	-0.050080	-0.404334	-0.540379	1.000000
	0.0358	0.0925	0.7558	0.0087	0.0003	-----

Source: Authors' compilation using E-Views Version10

The table 2 above presents correlation matrix of the independents variables. It was detected that the variables judiciously correlated between -0.32 and 0.69). There is reasonable relationship between the variables, since all are less than 0.8, therefore there is no problem of multicollinearity.

Table 3: Results of the Unit Root Test using Augmented Dickey-Fuller

Var.	Level	Critical val	Prob.	First diff	Critical val.	Prob.	Order of integ.
Log CCB	0.841462	-2.936942	0.7961	-7.154140	-2.938987	0.0000	I(1)
CRR	0.395960	-2.936942	0.9803	-2.774514	-2.941145	0.0715	I(1)
LQR	-3.534723	-2.936942	0.0120	-	-	-	I(0)
LTR	-2.992761	-2.936942	0.0441	-	-	-	I(0)
MPR	-3.334522	-2.936942	0.0198	-	-	-	I(0)
TBR	-3.199330	-2.936942	0.0274	-	-	-	I(0)

Source: Authors' compilation using E-Views Version10

The unit root test based on ADF presented in table 3. The result revealed that logged commercial banks credit to agricultural sector (log CCB) and cash reserve ratio were stationary at first difference I(1). However, loan to deposit ratio, monetary policy ratio liquidity ratio and treasury bill ratio become stationary at level 1(0) or integrated at level 1(0).

ISSN: 2795-3831
E-ISSN: 2795-3823

This implies that variables are integrated of different order with some stationary at level value while others after first difference. Thus, the results attested that ARDL is the best model to use in the estimation.

Table 4: ARDL Bounds Test of Cointegration

F-Bounds Test		Null Hypothesis: No levels relationship		
Test Statistic	Value	Sign.	I(0)	I(1)
F-statistic	5.477357*	10%	2.08	3
K	5	5%	2.39	3.38
		1%	3.06	4.15

Source: Researchers calculation using E-Views 10 (2022)

Table 4 revealed the value of F-Statistic value 5.477357, mean that the value is more than lower and upper bound test. Thus, there is proof of long run relationship among the variables.

Table 5: ARDL Long-Run Estimates

Variable	Coefficient	Std. Error	t-Statistic	Prob.
CCB (-1)	0.971077	0.025932	37.44702	0.0000
CRR	-0.006498	0.008365	-0.776729	0.4430
LIQ	-0.003695	0.003071	-1.203357	0.2377
LTD	-0.003152	0.003380	-0.932636	0.3580
MPR	-0.030902	0.018139	-1.703609	0.0981
TBR	0.035358	0.017625	2.006127	0.0534
C	0.119177	0.403369	0.295455	0.7696
R-squ.	0.990673	Mean dep. var		3.689520
Adj. R-squ.	0.988632	S.D. dep. var		2.169434
S.E. of regression	0.231302	Akaike info cri.		0.086672
Sum squ. resid	1.712020	Sch cri.		0.424448
Log likelihood	6.266567	Hannan-Quinn criter.		0.208801
F-sta.	485.5466	Durb-Wat. sta		2.264683
Prob.	0.000000			

Source: Researchers calculation using E-Views 10 (2022)

The Autoregressive Distributed lag (ARDL) long-run result in the table 5 reveals that, cash reserve ratio, liquidity ratio and loan to deposit ratio have long-run negative and not significant on commercial banks credit to agricultural sector in Nigeria. Whereas, monetary policy rate has negative and significant on commercial banks credit allocated to agricultural in Nigeria. However, the treasury bill ratio has positive and significant on commercial banks credit to agricultural sector in Nigeria at 5% level of significance. The R-squared of the model (0.9906) signifies that the explanatory variables jointly account for 99% changes in the explained variable of the commercial banks credit to agricultural sector in Nigeria model. The Durbin-Watson stat (2.264683) of the model of approximately 2 suggests that the model is free from serial correlation problem and the F-statistic (485.5466) which is significant at 1% implies the overall fitness of the model.

ISSN: 2795-3831
E-ISSN: 2795-3823

Table 6: ARDL Results of Error Correction Model

Dependent Variable: D (LOGAGRIC SEC.)

Var.	Coef.	Std. Err	t-Sta.	Prob.
ECM (-1)*	-0.028923	0.004286	-6.747632	0.0000
R-squ.	0.293708			
Adj R-Sq.	0.275121			

Source: Researchers calculation using E-Views 10 (2022)

In this table 6 above, ARDL result of Error Correction Regression Estimates model display the rate of the ARDL models to long-run equilibrium from short-run disequilibrium. The error correction term (ECT) in the model is shows negative and significant at 1%. This suggests that the model correct any error/distribution in the short-run model to restore long equilibrium at 3% annually.

Post estimation diagnostic test conducted after established a long term correlation and to avoid the spurious regression result and for better statistical conclusion to be drawn

Table 7: Post-Estimation Diagnostic Tests

	F-sta.	**P-value**
Serial Corr. LM Test	0.829038	0.3696
Heteroskedasticity Test	1.279208	0.2917
Normality test	6.102360	0.047303

Source: Researchers calculation using E-Views 10 (2022)

Table 7 report Auto Correlation LM test, it shows that the P-Value of 0.3696 is not significant at 5% level. This implies that there is no indication of autocorrelation problem. heteroskedasticity test displays of P-values of 0.2917 is not significant at 5%level. The indication shows that, there is absence of heteroskedasticity problem. Normality test was also conducted to find out the normally distributed of variables. The conditions for normality are all meet except Jarque-Bera that abnormally distributed because the value of skewness is less than one, kurtosis value is 3 while the jarque-bera values is 6.102360 with probability value (0.047303) indicate the significant level of 5% significance.

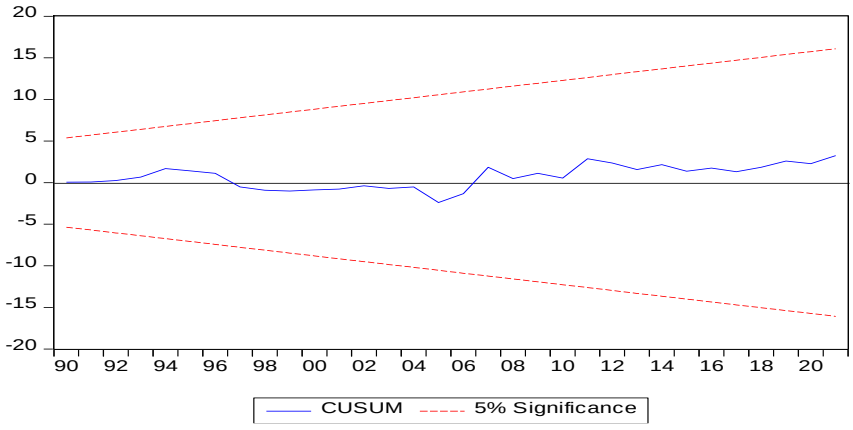

Figure I: Cusum Tests
Source: Researchers calculation using E-Views 10 (2022)

ISSN: 2795-3831
E-ISSN: 2795-3823

Figure 1 presents the plots of CUSUM test for stability with 5% level of significance. This reveals that there is no chance of having spurious regression in CUSUM for stability since the blue line is intermediate the two red lines.

DISCUSSION OF FINDINGS

The ARDL long-run result estimates of the monetary policy and commercial banks credit to agricultural sector in Nigeria show the cash reserve ratio, liquidity ratio and loan to deposit ratio have long-run negative and not significant on commercial banks credit to agricultural sector in Nigeria. Whereas, monetary policy rate has negative and significant on commercial banks credit allocated to agricultural in Nigeria. However, the treasury bill ratio has positive and significant on commercial banks credit to agricultural sector in Nigeria at 5% level of significance. In addition, ARDL result of error correction regression estimates model indicates the rate of the models to long-run equilibrium from short-run disequilibrium. The error correction term (ECT) in the model is shows negative and significant at 1%. This suggests that the model correct any error/distribution in the short-run model to restore long equilibrium at 3% annually. This is line with study of (Umeh et al., 2021; Steven et al., 2020; Anthony et al., 2019; Osakwe et al., 2019).

CONCLUSIONS AND RECOMMENDATIONS

This study examine the monetary policy and commercial credit to agricultural sector in Nigeria using annual time series data for the period from 1981 to 2021 through ARDL technique. The monetary policy variables indicators in this study were loan to deposit ratio, monetary policy rate, liquidity ratio, treasury bill ratio and cash reserve ratio while commercial credit was proxied with loan and advance to agricultural sector in Nigeria. Results from this study revealed the presence of long-run between monetary policy and commercial banks credit to agricultural sector in Nigeria existed.

In ARDL long-run Cash reserve ratio, liquidity ratio, loan to deposit report have negative and not significant on commercial banks credit to agricultural sector in Nigeria. Whereas, monetary policy rate has negative and significant on commercial banks credit to agricultural. In addition, treasury bill ratio has positive and significant on commercial banks credit to agricultural sector in Nigeria. The study therefore, concluded that monetary policy has

negative implication on commercial banks credit to agricultural sector in Nigeria.

Based on the findings ended in this study, the following recommendations were made to address some of the problems exposed. Central Bank of Nigeria should cuts down the cash reserve ratio to encourage the loanable funds available with the banks. Regulatory authority should put in place suitable policy that will prevailing cash hoarding in the economy to achieve desired liquidity ratio level. CBN should use the loan to deposit to center for regulating and moderating commercial banks for a positive significant impact to sectors in Nigeria. Authorities should use monetary policy rate to expand the volume of commercial banks' ability to grant credits. Finally, monetary policy authority should ensure that holding of treasury bills by commercial banks should be reduced to enhance the ability to grant loans and advances to the public for productive purposes.

ISSN: 2795-3831
E-ISSN: 2795-3823

REFERENCES

Anthony-Orji, O. I., Orji, A., Ogbuabor, J. E., & Nwosu, E. O. (2019). Do financial stability and institutional quality have impact on financial inclusion in developing economies? A new evidence from Nigeria. International Journal of Sustainable Economy, 11(1), 8-40.**[Crossref]**

Anthony, O., Gabriel, E. E. & Arikpo, O. F. (2015). The contribution of deposit money banks on the growth of the agricultural sector in Nigeria. Archive Research Journal, 3(2), 33-42. **[Crossref]**

Apere, T. O & Karimo, T. M. (2013). Monetary policy shocks and agricultural output growth in Nigeria, IOSR International economics and finance 6(2), 45-50.

Arora, R.U. (2014). Access to finance: An empirical analysis. European Journal of Development Research, 26 (5), 7.98-814. **[Crossref]**

Aroriode, J. R. & Ogunbadejo, H. K. (2014). Impact of macroeconomic policy on agricultural growth in Nigeria. Journal of Agriculture and Veterinary Science, 7(2), 1-17.

Asukwo, J. I., Owui, H. O., Olugbemi, M. D., & Ita, R. I. (2020). Commercial banks' lending and the growth of agricultural sector in Nigeria. IIARD International Journal of Banking and Finance Research, 6(3), 1-13.

Baltensperger, E. & Devinney, T. M. (1985). Credit rationing theory: A survey and synthesis. Journal of institutional and Theoretical Economics, 141(4), 475-502.

Bank for International Settlements (2014). Basel III leverage ratio framework and disclosure requirements, retrieved from www.bis.org/publ/bcl/bcbs270.htm

CBN. (2009). 50 years of central banking in Nigeria. A publication of central bank of Nigeria.

CBN. (2004) Annual reports and statement of accounts,31st December 2004.

Central Bank of Nigeria. (2019). Annual Statistical Bulletin. Abuja, Nigeria. Retrieved from https://www.cbn.gov.ng/documents/statbulletin.asp.

Chinedu, U. A., & daniel, O. C. (2021). Impact of monetary policy on commercial banks' supply of agriculture credit in Nigeria. International journal of research (IJR).8(5). 23-35.

Chris. O. U., Mbat, D. O., & Stephen B. D. (2016). The effect of commercial banks' credit on agricultural production in Nigeria. Journal of Finance and Accounting, 4(1), 1-10 DOI:10.12691/jfa-4-1-1.

ISSN: 2795-3831
E-ISSN: 2795-3823

Cressy, R. (1996). Funding gaps: A symposium. The Economic Journal, 112 (477), 1-16. **[Crossref]**

Duruechi, A. H. (2018). Monetary policy and deposit money banks total sectoral credit allocation in Nigeria. World Journal of Finance and Investment Research, 3(2), 47-59.

Emmanuel O. E. (2008). Macroeconomic environment and agricultural sector growth in Nigeria. World Journal of Agricultural Sciences, 4 (6), 781-786.

Hillary, C. E., Imo, G. I. & Uche, B. (2018). Monetary policy transmission and industrial sector growth: Empirical evidence from Nigeria. Journal of International Financial Markets, Institutions & Money, 4(3), 18-176.

Jegede, C. A. (2014). Effects of monetary policy on the commercial banks' lending in Nigeria. Review of public administration and management, 3(5), 134-146.

Jhingan, M. L.(2013). Money, banking, international trade and public finance. New Delhi, India: Konark Publishers PVT.

Jonathan E. O., & Cynthia A. N. (2017). The impact of deposit money bank's agricultural credit on agricultural productivity in Nigeria: Evidence from an Error Correction Model. International Journal of Economics and Financial Issues, 7(2), 513-517.

Keen, M. (2009). What do (and do not) we know bout the value-added tax? A review of Richard M. Bird and Pierre- Pascal Gendron's the VAT in Developing and transitional countries. Journal of economic literature, 47(1), 159-170. **[Crossref]**

Lopez-Espinosa, G., A. Moreno, A. R., & Valderrama, L. (2012). Short-term Wholesale Funding and Systemic Risk: A Global Covar Approach. IMF Working Paper, WP/12/46, February. **[Crossref]**

Matemilola, B.T., Bany-Ariffin, A.N., & Muhtar, F. E. (2002). The impact of monetary policy on bank lending rate in South Africa. Borsa Istanbul Review, xx (X) 1-7 **[Crossref]**

Matthews, K., & Thompson, J. (2014). The economics of banking, Wiley: Chichester, (3rd Edition).

Ogolo, T. M. (2018). Monetary Policy and Commercial Bank Lending to the Real Sector in Nigeria: A Time Series Study. American Finance & Banking Review, 2(1), 12-43. **[Crossref]**

Ogunyemi, O. O. (2013). The Impact of Monetary Policy on Commercial Banks Loans and Advances in Nigeria: An Empirical Investigation (1975-2009), 1(1), 78-84.

Ojo, A. T. (2002). The future of community banks in Nigeria. First Bank of Nigeria Plc Quarterly Review, 2(1) 45-61.

ISSN: 2795-3831
E-ISSN: 2795-3823

Olaoluwa, F. O., & Shomade, H. G. (2017). Appraisal of monetary policies on commercial bank lending behaviour in Nigeria banking industry from 1980-2014. Global Journal of Human-Social Science: E Economics, 17(4), 31-38.

Omankhanlen, A. E., Okorie U. E., & Taiwo, J. N. (2015). A dynamic analysis of the relationship between monetary policies and loan risk exposures in Nigerian deposit money banks. Mediterranean Journal of Social Sciences MCSER, 6(6), 247-255.

Omorogbe O., Jelena Z. & Ademoh F. (2014). The role of agriculture in the economic development of Nigeria, European Scientific Journal, 10 (4), 133-148.

Osakwe, A. C., Elias I. A., & Okonkwo, E. J. (2019). Effect of monetary policy instruments on banking sector credits in Nigeria. Advance Journal of Management, Accounting and Finance. 4(4), 32-45.

Owolabi, A. U., & Adegbite, T. A. (2014). Impact of monetary policy on industrial growth in Nigeria. International Journal of Academic Research in Business and Social Sciences, 4(1), 18-31.

Peter C. Uruakpa (2019). Impact of monetary policy on deposit money banks' performance: The case of Nigeria. Journal of Finance, Banking and Investment, 5(1), 81-106.

Steven, O.A., Samuel, O. J., Philip, Z. & Ruth, N. M. (2020). Impact of monetary policy on the performance of the agricultural sector in Kenya. International Journal of Research and Innovation in Social Science (IDRISS), IV, (VII), 562-568.

Stightz, J. & Weiss, A. (1981). Credit rationing in markets with imperfect information. American Economic Review, 7(1), 395-410.

Umeh, A. C., Ugwo, C. E. & Ochuba, C. D. (2021). Impact of monetary policy on commercial banks' supply of agriculture credit in Nigeria. International Journal of Research (IJR). 8 (5), 78-102.