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Autoregressive Distributed Lag Model Approach on the Effect of Monetary Policy in Nigerian Banking sector

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ABSTRACTS

Healthy banking system is determined by the amount of money supply which can be monitored through various monetary policy instruments. A lot of study has shown studies from other countries on various monetary policies used with scanty literature as it relates to Nigeria, and this research is aimed at looking at the Nigerian scenario. Method used for this study is empirical on the effect of monetary policy on banking in Nigeria. Time series data from 2004-2019 was used with an autoregressive distributed lag approach and error correction mechanism. The findings from this study are; there is an evidence of significant relationship between the dependent and the explanatory variables with a long-run relationship between credit reserve ratio and money supply on bank loans and advances while other variables such as monetary policy rate (MPR) and liquidity ratio (LQR) are not significant on bank loans and advances in Nigeria. The error correction mechanism reveals the existence of cointegration, stating that there is a long run relationship among the dependent and the explanatory variables. Structural changes in monetary policy is significant on bank loans hence suggesting a significant effect on bank loans and advances. This research serves as a great relevance to policy makers which implies monetary authorities should review and formulate an efficient policy such as fiscal policy to help boost bank industries in Nigeria.

INTRODUCTION

Onouorah (2011), ‘‘Monetary policy is known to be an economic stabilization weapon which involves procedures outlined in monitoring and controlling the volume and availability of cost, inflow and outflow of credit in an economy, to achieve their main objectives of macro-economic policy’’. Central Bank in Nigeria like many other monetary authorities all over the world uses this as a means in controlling credit condition and supply of cash in an economy, to realize a wider range of economic objective. Okpara (2010), ‘‘states that monetary policy is one of the strategies put in place to influence the direction of money, availability and volume of credits to realize major economic objectives’’.

One of the instruments operated by central bank which was given to them by the government of Nigeria is monetary policy, i.e, to say that this policy is used for the control of both aggregate demand/supply of circulation of cash in the economy. This policy was used to help stabilize goods and services prices and in wages (Akanbi and Ajagbe, 2012). ‘‘Monetary policy helps in the control of bank credit and money in a such a way where it affects the total demand of money in the direction of job opportunity and price stability’’ (Anyanwu 1993). Monetary policies are set as the sole responsibilities and duties of the CBN, as they are the ones in charge in the conduct of this policy to achieve their core objectives. Globally monetary authorities such as the Central Bank which is what we have in Nigeria most times make use of some monetary policy instruments such as Cash Reserve Requirements, Open

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Market Operation, charges on bank rates and some credit control instruments, to help determine some monetary variable targets. Although these objectives may seem to align with each other, while some might not, like in a case where some objectives of stabilizing interest rate and high level of employment most times conflict with price stability objectives.

In a quest in manipulating tools of monetary policy like exchange and credit rate, which affects money supply growth rate, interest rate levels, prices of securities, liquidity creation and availability of credit from commercial banks, the above mentioned factors can help influence the economy's monetary imbalances by affecting total output level of investments, exports, price level consumption, government spending and income in an economy.

The research will answer some of these research questions, which are the effect of monetary policy on credit availability and cost, effect of money supply on (bank's loan/ advances), effect of 3 liquidity ratio in the availability of credit (bank's loan and advances) and finally, effect of cash reserve ratio in the availability of credit (bank's loan and advances) in Nigeria. This study will help the financial authorities in providing policies alongside monetary policies that are aimed at achieving monetary policy goals in the Nigerian banking sector.

LITERATURE REVIEW

Okoye and Udeh (2009) looked at effect of monetary policy on banking sectors making profits as reflecting in the Nigerian economy. Analysis of linear regression was used to carry out the study. Data sourced were secondary data gotten from CBN yearly bulletin. The study developed four models which are expected to fulfill the purpose of forecasting the future profits of the examined banks. Ayodele A.A (2021) findings showed monetary policy had stilted deposit money banks profitability in Nigeria. Strict adherence to deregulation was highly recommended, among others, and that monetary authorities and government should adopt legal reserve ratio that will be suitable, to avoid distress and liquidity in the money banks.

Amassoma, Wosa and Olaiya (2011) made a study on monetary policy development in Nigeria which looked at the impact of this policy on some economic variables from 1986 to 2009. OLS technique was used, co-integration test was carried out also with the unit root test, from the findings it was deduced that over the years previewed monetary policy was sustained. It showed there was a positively significant effect on money supply and exchange rate on monetary policy while price stability had a negative and insignificant influence on monetary policy.

Ajayi and Atanda, (2012), ''studied the effect of monetary policy tools on deposit money bank's performance in view to find out if a long-run relationship exists amongst variables used from 1978 to 2008. Two step co-integration approach of Engle-granger was used and empirical estimates showed exchange rate, bank rate and inflation rate are totally boosting credit, while liquidity ratio and cash reserve ratio had an insignificantly negative effect on credit of banks. Though, cash reserve ratio and exchange rate were significant at 5% critical value. Co-integration tests showed that H_0 was accepted meaning no existence of co-integration. It was concluded that monetary policy tools are not effective in credit control on the long-run, while bank's credit is highly responsive to cash reserve ratio, thus stated that monetary authorities must try as much as possible to reduce their minimum policy rate as an instrument to regulate deposit money banks operations in Nigeria''.

Ayodele J.C (2014) ''studied effect of monetary policy on bank's lending in Nigeria, from 1988 - 2008, he used time series variables which are exchange rate, interest rate, liquidity ratio, money supply, and bank's loan and advances. VECM of OLS technique was the method used. The result showed there is a long run relationship amongst variables. He

finally deduced monetary policy tools are less effective to facilitate money deposit bank's loan and advances on the long-run and total credit of banks are very responsive.

RESEARCH METHOD

The population size for this research will consist of all money deposit banks stated on the stock exchange of Nigeria as at December 2019. Secondary sourced data was used in the research and was extracted from CBN's statistical bulletin from 2004 to 2019 on a yearly basis. The major technique for data analysis in this research is the Autoregressive distributed lag model and an error correction mechanism. The ARDL model have been in existence over the years, but recently, it proved to be a driving statistical tool for testing the existence of a long -run relationship amongst time series data. ARDL bounds testing was adopted in this study, co-integration test was carried out to determine the existence of long run and short run relationships amongst variables of interest. Autoregressive distributed lag model is used not minding if the variables under investigation are integrated of the same order or not and in the case of Johansen co-integration methods, it requires that all variables used should be of equal and same order of integration. It can also mean that ARDL is used when variables under study are integrated in either order one, zero and even when integrated fractionally.

An ECM provide short-run coefficients alongside the long-run equilibrium and not losing any valid coefficient on the long-run eventually. ECM mechanism was first developed in economics by a man named James Davidson, David F. An error correction mechanism is a regression model of time series data which is established on assumptions that the behavior of two or more time series data shows an equilibrium relationship exists which will determine the short-run and long run behavior, but if no long-run relationship exists, ECM won't be appropriate.

$$yt = \alpha 0 + \alpha 1xt + \alpha 2x\ t\ -1 + \alpha 3yt\text{-}1 + \mu t$$

Model specification:

The econometric model is given as:

$$LADV = f(MPR, MS, LQR, CRR) \ldots\ldots (1).$$

The relationship that between the interests of variables can be represented in the following model:

$$LADVt = \beta 0 + \beta 1LMPRt + \beta 2LMSt + \beta 3LLQRt + \beta 4LCRRt + \mu t \ldots\ldots (2).$$

Where:

LADV = Bank loans and advances.

LMPR = Log of monetary policy rate.

LMS = Log of money supply.

LLQR = Log of Liquidity ratio.

CRR = Log of credit reserve ratio.

β_1, β_2, $\beta 3$ and β_4= Coefficients.

$\beta 0$= Intercept.

μt= Error Term.

The ARDL model of equation (2) is written as:

$$\Delta LADV_t = \beta 0 + \sum_{i=1}^{\bar{m}} \beta_1 \Delta LADV\ t_{-i} + \sum_{i=1}^{\bar{m}} \beta_2 \Delta MPRt_{-i} + \sum_{i=1}^{\bar{m}} \beta_3 \Delta MSt_{-i} + \sum_{i=1}^{\bar{m}} \beta_4 \Delta LQRt_{-i} + \sum_{i=1}^{\bar{m}} \beta_5 \Delta CRRt_{-i} + \alpha^1 LADVt^{-}_{i} + \alpha^2 MPRt^{-}_{i} + \alpha^3 MS\, t^{-}_{i} + \alpha^4 LQR_t t^{-}_{i} + \alpha^5 CRRt^{-}_{i} + \mu t \ldots \quad (3)$$

Although, the ARDL model is sub-divided to two representations, where the first representation of the above equation having β1 to β5 stands for the model's short-run dynamics where β1 stands for dependent variable and β2 to β5 stands for independent variables, while coefficients α1 to α6 stands for existence of long-run relationship. H0 (null hypothesis) of above model used is written as H0: α1= α2= α3= α4= α5= 0 and this tells us no co-integration amongst variables used. To begin with the estimation, we need to conduct a bound test for H0 for non-existence of a long-run relationship. Calculated F-statistics will be compared with the tabulated critical value. If calculated F-statistics is higher than upper tabulated critical value, the decision rule states that we will reject the H0 of no existence of a long- run relationship meaning co-integration does not exists not minding if the underlying integration order of the variables is at I(0) or I(1), but when the F–statistics lies below the lower critical value that means H0 cannot be rejected and if F– 6 statistics lies within the upper and lower tabulated critical values, the result is inconclusive . Error correction model is estimated so as to get the short-run coefficients of the variables under study. The ARDL specification of the ECM model of equation (3) above can be written as:

$$\Delta LADV_t = \beta 0 + \sum_{i=1}^{m} \beta_1 \Delta LADVt_{-i} + \sum_{i=1}^{m} \beta_2 \Delta MPRt_{-i} + \sum_{i=1}^{m} \beta_3 \Delta MSt_{-i} + \sum_{i=1}^{m} \beta_4 \Delta LQRt_{-i} + \sum_{i=1}^{m} \beta_5 \Delta\, CRRt_{-i} + \Delta\, ECMt^{-}_{i} + \mu t \ldots \quad (4)$$

Where ECM is representation of error correction equation and the ECM measures and determines the speed of adjustment and it shows how fast a system adjusts to restore equilibrium.

RESULTS

Table 1. Data analysis: Augmented Dickey-Fuller (ADF) Unit Root Test:

Variables	@ level		@ difference		Remarks
	t-statistics	P-value	t-statistics	P-value	
LNLADV	-1.438837	0.5282	-3.6428	0.0221	I(1)
LNMPR	-1.645941	0.4634	-3.7860	0.0148	I(1)
LNMS	-2.604483	0.1137	-5.7365	0.0020	I(1)
LNLQR	-0.624034	0.8372	-2.7328	0.0932	I(1)*
LNCRR	-0.974413	0.7236	-2.9737	0.0621	I(1)*

Source: Output of E-Views, 2020.

*denotes at 10% Critical Value

Table 2. Descriptive statistics:

	LNLADV	LNMPR	LNMS	LNLQR	LNCRR
Mean	8.938789	2.374880	9.281420	3.887837	2.078393
Median	9.050469	2.441401	9.473045	3.896556	2.282174
Maximum	9.751955	2.639057	10.44149	4.643429	3.113515
Minimum	7.325939	1.791759	7.664722	3.415429	0.000000
Std. Dev.	0.763637	0.259338	0.816709	0.295054	1.029588
Skewness	-0.944931	-1.119940	-0.654470	0.669278	-0.668847
Kurtosis	2.726375	3.483175	2.397392	4.110964	2.384814
Jarque-Bera	2.430964	3.500345	1.384308	2.017317	1.445251
Probability	0.296567	0.173744	0.500497	0.364708	0.485476
Sum	143.0206	37.99808	148.5027	62.20540	33.25429
Sum Sq.Dev.	8.747112	1.008839	10.00522	1.305849	15.90076
Observation	16	16	16	16	16

Source: Output of E-Views, 2020.

The Table above provides preliminary analysis which involves the description of the variable's relevant statistical properties under review. The analysis is carried out in regards to the distributions of statistical variables used and results showed that LNLADV, LNMPR, LNMS and LNCRR are skewed negatively meaning the distribution left-side tail is longer and fatter than the right-side tail showing that the median of the variables used are greater than their means while LNLQR is positively skewed implying that distribution of the right-side tail is longer and fatter meaning the mean of the variable is lesser than their median. Observation of skewness is 16 observations. Considering the Kurtosis, it shows that LNMPR and LNLQR are leptokurtic (kurtosis > 3) indicating the distribution of the variables has fat tails than the normal distribution while LNLADV, LNMS and LNCRR are platykurtic (kurtosis < 3) meaning distributions are shorter and tails are thinner than the normal distribution. The test for normality with the use of Jarque Bera (JB) statistics, showed that the variables used are distributed normally as the P- values are greater than 0.05. Note that because observed series used in this study is not large enough, we then go with ARDL (1,0,0,0,0)

Table 3. Standard ARDL model result:

Variable	Coefficient	Std. Error	t-Statistic	Prob.
	0.494823	2.042207	0.242298	0.8242
LN LADV(-1)	-1.428701	0.643186	-2.221287	0.1129
LN MPR(-1)	-0.218340	1.080999	-0.201980	0.8529
LN MS(-1)	1.414364	0.742051	1.906020	0.1527
LN LQR(-1)	-0.109920	0.491009	-0.223865	0.8372
LN CRR(-1)	0.024051	0.238730	0.100745	0.9261
D(LNLADV(-1))	0.789951	0.493266	1.601472	0.2076
D(LNMPR)	0.267745	0.655264	0.408605	0.7102
D(LNMS)	0.649064	0.783051	0.828891	0.4680
D(LNLQR)	-0.311842	0.355711	-0.876671	0.4452
D(LNCRR)	-0.103916	0.228429	-0.454916	0.6801
R- squared	0.900943	Mean dependent var		0.154484
Adjusted R- squared	0.570752	S.D. dependent var		0.214258
S .E .of regression	0.140376	Akaike info criterion		-1.058005

Sum of squared resid	0.059116	Schwarz criterion	-0.555888
Log likelihood	18.40603	Hannan-Quinn criter.	-1.104485
F -statistic	2.728551	Durbin-Watson stat	2.239027
P rob (F-statistic)	0.221181		

Source: Output of E-Views, 2020.R2 = 0.900943 DW = 2.239027

The standard ARDL model results showed the model's R-Square stood at 90.09 percent and this indicates a best fit for the model used and this is an acceptable level of determination, note that the R-square value must be above 60 percent to fit the data properly on the line of regression, provided that most of the exogenous variables were captured in the model. Also from the result above, coefficients of Bank loans and advances for previous year, LNLADV (-1) is at Lag1 and stands negative, coefficient of monetary policy rate LNMPR(-1) is at Lag 0 and stands negative, coefficients of money supply for previous year, LNMS(-1) is at Lag 0 and its positive, coefficients for previous year, LNLQR(-1) is at Lag 0 and its negative and coefficients of credit reserve ratio for previous year, LNCRR(-1) is at Lag 0 and its positive. These are the coefficients on the long run. D(LNLADV(-1)) is at Lag1 and coefficient remained positive. D(LNMPR) is at Lag 0 and coefficient is positive, D(LNMS) is at Lag 0 and coefficient is positive, D(LNLQR)is at Lag 0 and coefficient is negative, D(LNCRR)is at Lag 0 and coefficient is negative. These are the short run coefficients.

Table 4. Co-integration Test (Bound Testing)

Wald Test:
Equation: Untitled

Test Statistics	Value	df	Probability
F statistics	2.658737	(5,3)	0.2253
Chi-square	13.29368	5	0.0208

Null Hypothesis: C(2)=C(3)=C(4)=C(5)=C(6)=0
Null Hypothesis summary:

Normalized Restrictions (=0)	**Value**	**Std. Err.**
C(2)	**-1.428701**	**0.643186**
C(3)	**-0.218340**	**1.080999**
C(4)	**-1.414364**	**0.742051**
C(5)	**-0.109920**	**0.491009**
C(6)	**-0.024051**	**0.238730**

Restrictions are linear in co-efficient.

Persaran critical values: Lower=2.62 and upper=3.79

Above shows the co-integration test using Wald Test and the essence of this is to check if there is co-integration. The Pesaran critical values shows the lower and the upper bound limits. Decision taken is that if Fcal is lesser than the lower bound of Pesaran critical values, it means no co integration, but when F-cal is between the lower and the upper bounds of the Pesaran critical values, it means there is an inconclusive decision and if Fcal is greater than upper bound of Pesaran critical value, it means there is co-integration. Co-integration means a long run relationship exists. Since F-cal =2.6587 which falls between the lower and upper Pesaran critical values, it means that it is not conclusive, hence the need for an ARDL long-run test.

Table 5. ARDL Long-run model: Dependent Var: LNLADV

Variables	Coefficients	Standard error	t-value	P-value
LNMPR	-0.1528	0.7610	-0.2008	0.8537
LNMS	0.9900	0.1073	9.2294	0.0027
LNLQR	-0.0769	0.3250	-0.2367	0.8281
LNCRR	0.0168	0.1684	0.1000	0.9267

Source: Output of E-Views, 2020.

If LNMPR increase by a unit, it means LNLADV will decrease by 0.1528. If LNMS increase by a unit, it means LNLADV will increase by 0.9900. If LNLQR increase by a unit, the LNLADV 10 will decrease by 0.0769. If LNCRR increase by a unit, LNLADV will increase in 0.0168 of LNCRR. LNMS, (Money supply) is the only independent variable amongst all other independent variables that is significant because its P-value is less than 0.05 while other variables their P-values are greater than 0.05. We have established the facts that there exists long run relationship amongst variables used, hence the need if any short-run equilibrium exists amongst variables and identify the speed at which any short-run disequilibrium is returned to equilibrium with the help of a short-run ARDL test

Table 6. Short-run ARDL Model: ARDL(1,0,0,0,0):

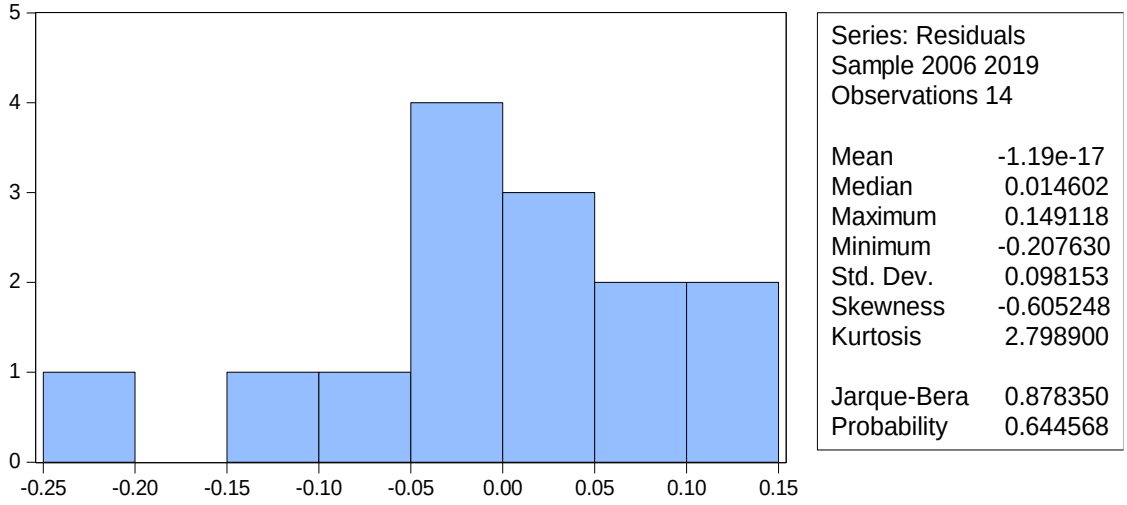
Variable	Coefficient	Std. Error	t-statistic	Prob.
C	-0.020538	0.078645	-0.261148	0.8015
D(LNLADV(-1))	0.508868	0.370202	1.374567	0.2117
D(LNMP)	0.296860	0.335720	0.884248	0.4059
D(LNMS)	0.729062	0.401182	1.817286	0.1120
D(LNLQR)	-0.395445	0.213481	-1.852362	0.1064
D(LNCRR)	-0.168535	0.141692	-1.189448	0.2730
ECM(-1)	-1.371455	0.414540	-3.308381	0.0130
R–squared	0.790140	mean dependent var		0.154484
Adjusted R-squared	0.610260	S.D. dependent var		0.214258
S. E. of regression	0.133760	Akaike info criterion		-0.878691
Sum squared resid	0.125242	Schwarz criterion		-0.559162
Log likelihood	13.15084	Hannan-Quinn criter.		-0.908269
F-statistic	4.392595	Durbin-Watson stat		1.720587
Prob (F-s tat)	0.036760			

The Error Correction Mechanism is the speed at which it takes for a system to correct itself. In the short-run D(LNLADV) Lag 1 is positively influencing the LNLADV but not significant. D(LNMPR) at Lag 0, is positively influencing the LNLADV but not significant. D(LNMS) at Lag 0 is positively influencing the LNLADV but not significant. D(LNLQR) at Lag 0, is negatively influencing the LNLADV but not significant. D(LNCRR) at Lag 0, is negatively influencing the LNLADV but not significant and this is because all their P-values are > 0.05. For there to exist cointegration the ECM(-1) at Lag1 must remain negative for it to be significant. In the results above, the ECM(-1) coefficient is -1.371455 and the P-value of 0.0130 which is less than 0.05, meaning there is cointegration significant.

Interpretation of ECM:

The ECM coefficient is negative with estimates of -1.371455 with a P-value of 0.0130 states it is significant. This shows to an extent a reasonable equilibrium high speed after a shock (which is 1.37%). So approximately 1.37% of disequilibria from the shock of the other year converges back to long- run equilibrium in the current year. Therefore, it supports the

above results that cointegration exists, meaning a long-run relationship exists amongst the variables used.



Source: Output of E-Views, 2020.

Figure 1: Normality test of the residual (Histogram and Jarque-Bera Test for Residual)

The Null Hypothesis (H_0) states that the residuals are normally distributed if the p - value of the JB statistics in the application is quite low, which usually occurs, if the value of the statistics is different from zero, one can reject the null hypothesis (H_0), and if otherwise, we do not reject the null hypothesis (H_0). The P-value of 0.644568 was gotten from the analysis results which is greater than 0. 05 critical value for the Jarque-Bera's test, giving a cause for acceptance of H_0, stating the disturbance term followed a normal distribution as shown in the result for Normality test. For the model used in this study, to satisfy OLS assumptions we need to check the normality of the disturbance term, ε_i. The Jarque-Bera (JB) test of normality is an OLS based test. The residual is the error. If P-value is greater 0.05, residuals is normally distributed and from our findings, P value is 0.644568 which is greater than 0.05, meaning the variables are normally distributed

Table 7. Serial correlation Test:

Breusch-Godfrey Serial Correlation LM Test:			
F–statistic	9.33E-06	Prob. F(1,6)	0.9977
Obs* R-squared	2.18E-05	Prob. Chi-square(1)	0.9963

Source: Output of E-Views, 2020.

The tests indicate the truancy of autocorrelation in model used as shown in the results above. The P-value of F-Statistic ascertains residuals were not correlated serially. According to the above we can accept the H_0 which states there is no serial correlation between the residuals, P -value is > 0.05, where P value =0.9977. In the absence of autocorrelation, we can deduce and conclude that the model is good, which means it fulfills the condition of the Ordinary Least Square (OLS)

Table 8. Breusch-Pagan-Godfrey Heteroscedasticity Test:

F-statistic	0.632548	Prob. F (6,7)	0.7034
O bs*R-squared	4.921963	Prob. chi-square (6)	0.5539
Scaled explained SS	1.106765	Prob. chi-square (6)	0.9812

Source: output of e views, 2020.

If P- value is greater than 0.05, there is no heteroscedasticity but if P-value is lesser than 0.05 there is heteroscedasticity, therefore it means there is no heteroscedasticity in the residual and this signifies a good fit because it fulfills the OLS assumptions which states there should be a constant variance.

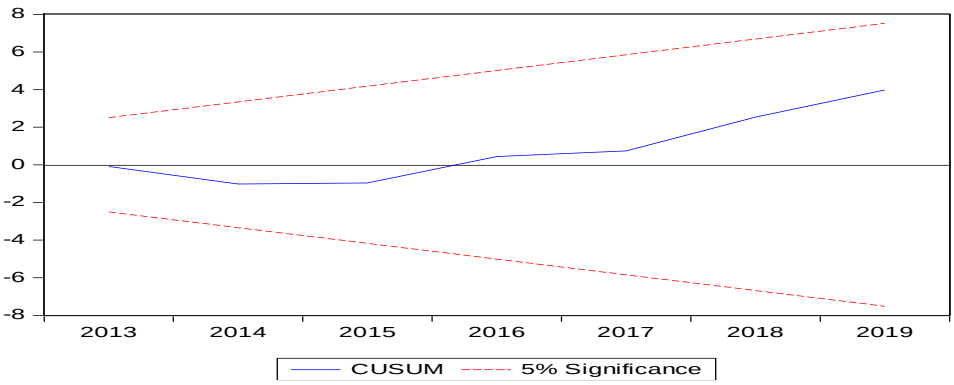


Figure 2: ***CUSUM Stability Test***

A CUSUM test is used to check if coefficients in the regression are changing either systematically or suddenly as the case may be.

Table 9. Multicollinearity Test:

	Coefficient	Uncentered	Centered
Variable	Variance	VIF	VIF
C	0.006185	4.839729	NA
D(LNLADV(-1))	0.137050	7.537473	4.646180
D(LNMPR)	0.112708	4.787677	4.747152
D(LNMS)	0.160947	6.076867	1.853525
D(LNLQR)	0.045574	2.314544	2.218166
D(LNCRR)	0.020077	6.553728	6.372405
ECM(-1)	0.171843	2.667529	2.660743

Source: output of E-Views, 2020.

Multicollinearity helps to reduce accuracy of estimate coefficient, which tends to weaken the statistical power of a regression model. If VIF < 10, it means the variable is not causing multicollinearity problem. From the above result it showed that the variance inflation factors are < 10, therefore it means no multicollinearity in the model used.

SUMMARY

This research sought to help in investigating effect of monetary policy on banking in Nigeria. A descriptive research design was used to carry out research objectives. The research using autoregressive distributed lag model and ECM to find out if there exist long- run relationships between bank loans and advances, monetary policy rate, money supply, liquidity ratio and credit reserve ratio on monetary policy on banking in Nigeria. Bank loans and advances was the dependent variable while monetary policy rate, money supply, liquidity ratio and credit reserve ratio were the independent variables in a regression equation using autoregressive distributed lag model. ARDL bound test, ECM test, normality test using the JarqueBera (JB) test of normality, Serial/Autocorrelation test, Heterosk edasticity test using Breusch-Pagan-Godfrey heteroscedasticity test, CUSUM stability test with multicollinearity test were all carried out to ascertain if there exist relationships between dependent variable and independent variables on the effect of monetary policy on banking in Nigeria.

The study looked at effect of CBN monetary policy on banking in Nigeria from 2004-2019 (15years), using an ARDL model, reviewing major tools of monetary policy with the

objectives and their achievements especially in terms of credit delivery to the economy. Hence the research analyzed the effect of some of instruments of monetary policy frequently used by the CBN.

Findings showed that liquidity ratio had negatively insignificant effect on bank loans and advances on the short- run and an insignificant effect on bank loans and advances (credit availability) on the long- run in Nigeria. More so, money supply was found to have a positively significant effect on bank loans and advances on the short-run as well as having a positive and significant effect on bank loans and advances (credit availability) on the long- run in Nigeria. The study also indicates that monetary policy rate had a positively significant effect on banks loans and advances on the short run and a negatively insignificant effect on bank loans and advances (credit availability) on the long-run in Nigeria. Cash reserve ratio was seen to have a negatively insignificant effect on bank loans and advances on the short-run, and a positively significant effect on bank loans and advances (credit availability) on the long- run in Nigeria.

RECOMMENDATIONS

Monetary policy rate given by the C B N to banks should be slightly minimal in order that the lending rate given by these banks to their various customers would not be on the high side. Monetary policy rates should be effectively managed by monetary authorities to attract investors. Government through its appropriate authority should ensure that policy instruments must be geared towards stimulating and promoting development and growth in the banking sector in Nigeria. Money supply should be effectively used in such a way that it has to achieve desired price levels that will propel investors into putting in more investment resources for expansionary output. CBN should review their guidelines periodically for banks, so as to encourage them to offer more credits to the real sectors. On the other hand, banks should create more credits by formulating strategies that could reduce lending rates.

REFERENCES

Ajayi, F. O. & Atanda, A. A. (2012). “Monetary policy and bank performance in Nigeria: A two step co-integration approach”. African Journal of Scientific Research, 9 (1), 463- 476.

Akanbi, T. A. and Ajagbe, F. A. (2012), “Analysis of Monetary Policy on Commercial Banks in Nigeria”, African Journal of Business Management Vol. 6(51), pp. 12038-12042.

Amassoma. D, Wosa. P and Olaiya. S. (2011), “An Appraisal of Monetary Policy and Its Effect on Macro Economic Stabilization in Nigeria”, Journal of Emerging Trends in Economics and Management Sciences (JETEMS) 2 (3): 232-237.

Anyanwu, J. C. (1993), “Monetary Economics: Theory, Policy and Institutions”, Onitsha: Hybrid Publishers Ltd.

Ayodele J.C (2014) The effect of monetary policy on commercial bank lending in Nigeria between 1988 and 2008.

Ayodele A.A, Imam. A , Buba. A, Bilkisu. M, Iniabasi E. E, Elijah. J. (2021), “The Impact of COVID-19 on Nigeria Consumer Price Index (CPI)” NIPES Journal of Science and Technology Research 3(3) 81 - 88 pISSN-2682-5821, eISSN-2682-5821.

Central Bank of Nigeria (2006, 2009, 2011, 2012), “Monetary Policy”, CBN Publication.

Central Bank of Nigeria (2011), “Instruments of Monetary Policy”, CBN Educational Series. Central Bank of Nigeria (2019) Annual Report and Statement of Account, December 2018.

Damola, R. A. and Olateju, A. O. (2013), "The Impact of Monetary Policy on Current Account Balance in Nigeria", IOSR Journal of Humanities and Social Science (IOSR-JHSS) e-ISSN: 2279-0837, p-ISSN: 2279-0845. Volume 7, Issue 3 (Jan. - Feb. 2013), PP 67-72.

Okoro, A. S. (2013), "Impact of Monetary Policy on Nigerian Economic Growth", Prime Journal of Social Science (PJSS) ISSN: 2315-5051. Vol. 2(2), pp. 195-199.

Okpara, G. C. (2010). Monetary policy and stock market returns: Evidence from Nigeria. Journal of Economics, 1 (1), pp. 13-21.

Onouorah C. A, Shaib I. O., Oyathelemi E. and Friday, O. I. (2011), "The impact of monetary policy on Micro-economy and private investment in Nigeria", Research Journal of Finance and Accounting, Vol. 2, No. 6: 65 -75.