

# Monetary Policy and Commercial Bank's Lending Ability Nexus: The Case of Selected Banks in Nigeria

Alex Ehimare. Omankhanlen<sup>\*</sup>, Esangaya Mengot and Olaide Kehinde

Department of Banking and Finance; Covenant University, Ogun State, Nigeria.

[\\*alexander.omankhanlen@covenantuniversity.edu.ng](mailto:alexander.omankhanlen@covenantuniversity.edu.ng)

*Abstract—Monetary policy has been set up by government to regulate and measure the activities of commercial banks. The main objective of this study is to examine the relationship between monetary policy and commercial banks' lending ability. For data analysis, the ordinary least square, unit root test, Johansen test for co-integration and VAR were used. The findings revealed that there is a relationship between monetary policy and bank lending in the economy. It is recommended that the reserve requirement be reduced in order to make more money available for banks to give out as credit to the investors.*

**Keyword—** Loans; Advances; Monetary Policy; Savings and Banks lending.

## 1. INTRODUCTION

Monetary policy refers to the aggregate of discretionary measures intended to regulate and control the money supply in an economy by the monetary authorities with the perspective of attaining identified or aimed macro-economic goals. In the Nigeria economy today monetary policy is the major tool embraced by the government to guarantee total economic growth and advancement in order to accomplish specific predetermined macroeconomic goals. Monetary policy creates the major policy thrust of the government in the realization of various macro-economic objectives Since the late 1980's monetary policy has become a major policy instrument in Nigeria, throughout this period CBN's monetary policies focused on fixing and controlling interest rates and exchange rates, sectorial credit allocation, maneuvering of the discount rate and involving moral suasion (Omankhanlen 2011).

Lending which may be on short, medium or long-term basis is one of the services that commercial banks do provide to their customers. In other words, banks do grant loans and advances to individuals, business organizations as well as government in order to enable them set out on investment and development activities as a method of assisting their growth in particular or adding toward the economic improvement of a country in general. Commercial banks are the most vital savings mobilization and financial resource allocation institutions. Subsequently, these responsibilities make them important institutions in economic growth and development.

### 1.1 Statement of the Research Problem

One of the most difficult matters facing government is recognizing the applicable level and form of intervention in the banking sector. Its efficiency as a regulator is a

significant determinant of the overall efficiency of the economy. The level of regulatory interference may also establish whether financial markets can develop to their full potential or not. Ultimately, any inefficiency must be funded by higher charges passed on to the economy as cost arising from stringent regulation. The more sophisticated the monetary policy, the greater its exposure to failure of banks to deliver against its promises (Udeh 2015). According to Omankhanlen (2014) The Nigerian banking system can be said to be the one that does the essential role of aiding monetary policy implementation and facilitating the role of financial intermediation in the economy. Therefore, since the introduction of monetary policy it has being noticed that policies implemented by the monetary authorities has not been effective on the deposit bank lending ability which has reduced the performance of the bank within the financial system and their profitability

### 1.2 Objectives of the Study

The main objective of this research work is to establish the impact of monetary policy on commercial banks' lending ability to the economy. The sub-objectives are as follows:

- i. To determine how money supply ( $M^2$ ) affects commercial bank lending ability in the economy.
- ii. To determine how interest rate affects commercial bank lending ability in the economy.
- iii. To determine how cash reserve ratio affects commercial bank lending ability in the economy.

The research questions and hypotheses are drawn from the above objectives.

### 1.3 Scope of the Study

This scope of study will cover the period 1983-2016 that is

34 years in Nigeria. The data that will be used in this study will be secondary data. This study will focus on the performance of money supply, interest rate and cash ratio on lending of commercial banks in the economy.

**1.4 Limitations On Bank Lending**

The following are the factors that cause a constraint on commercial banks ability to lend to the economy:

**i. Liquidity**

One of the greatest essential tasks faced by the management of commercial banks is ensuring sufficient liquidity. A bank is measured liquid if it has prepared access to instantly spendable funds at a rational cost at exactly the time the funds are required. This is stable with the results of Kashyap and Stein (2000) that banks amend their liquidity according to their recent investment opportunities, increasing liquidity when lending opportunities are poor and decreasing liquidity when lending opportunities improve. It should be noted that improved bank profits will re-enforce further bank loans and investments that further increases bank profits to ideal level. Insufficient liquidity is often one of the first signs that a bank is in serious financial trouble. (Uremadu, 2012). The exact bank in question usually begins to lose deposits as persons out of fear withdraw their deposits from the bank; this erodes its supply of cash and forces the institution to dispose of its more liquid assets.

**ii. Operational Orientation**

Medium to long-term loans tenors for loan facilities remain a worrying some of investment risk for most banks in the emerging markets. For this category of loans the major cause of risk is the term structure of the deposit liabilities of these banks. On this count, banks operating in the emerging markets are mostly disadvantaged; they often rely on short-term funds or usually find it hard to attract long-term deposits to fund term loans.

In most cases, the incapability of the banks to invite long-term deposits is due to recurring unfavourable macro-economic issues, which make long-term financial planning almost practically impossible for most economic units. And lastly, **Flaws in the Legal System**

**2 RESEARCH METHODS**

For this study secondary data gotten from Central Bank of Nigeria (CBN), Statistical Bulletins and World Development indicator covering the periods of 1983 to 2016 will be used. This study will make use of Johansen co-integration analysis to investigate the effectiveness of money supply, interest rate and cash reserve ratio on the lending ability of the commercial banks to the economy. This analysis will be based on annual data; (E Views 5.0) will be applied in the data analysis where the lending will be the dependant variable and money supply, interest rate and liquidity ratio as independent variable.

**2.1 Model Specification**

The model for this study is specified below

$$DMBLA = b_0 + b_1M^2 + b_2INTR + b_3CRR + u_i \quad (1)$$

DMBLA= Commercial banks loans and advances

M<sup>2</sup>= Money supply

INTR= Interest rate

CRR= Cash reserve ratio

Where the dependent variable is commercial banks loans and advances while independent is M<sup>2</sup>, interest rate and cash reserve ratio.

**2.2 Technique of Estimation**

To analyze the model represented above the ordinary least square method (OLS) will be used in addition to unit root test, Johansen test for co-integration and vector error correction model

**2.3 Measurement of Variables**

In this study, commercial banks' lending is proxied by the commercial banks loans and advances (DMBLA) while the monetary variables using M<sup>2</sup>, interest rate and cash reserve ratio

**3 EMPIRICAL ANALYSIS AND RESULTS**

**Introduction**

This research work is primarily interested in finding out the relevance of selected monetary policy indicators in predicting the trends of banks' lending in Nigeria from the period of 1983 to 2016. This estimation was done using E-views7.0. The empirical study is based on annual data from the Central Bank of Nigeria, (CBN,) Statistical Bulletin.

**3.1 Econometric Analysis**

**Unit root test**

The section examines the unit root property of the variables in the model. This study utilized Philips-Perron (PP, 1998) unit root tests with the inclusion of intercepts components in the test.

Table 4.1: A Table showing the Unit Root Test Results

Variables	1 <sup>st</sup> Difference			Levels		
	PP-Stats	Critical Value at 5%	Remarks	PP-Statistic	Critical Value at 5%	Remarks
LLAD VS	-5.14	-2.95	S	0.13	-2.95	N S
LM <sub>2</sub>	0.12	-2.95	S	0.12	-2.95	N S
LINTR	-2.30	-2.95	S	-2.30	-2.95	N S

LCRR	-	-2.95	S	-2.11	-2.95	N S
	2.1					
	1					

Source: Author's Compilation from E-views 7.0

Note: A variable is stationary when PP value is greater than the critical value.

<sup>1</sup>LLADVS- Log of loans and advances

<sup>2</sup>LM2-log of broad money supply

<sup>3</sup>LINTR- log of interest rates

<sup>4</sup>LCRR- log of cash reserve ratio

<sup>5</sup>S- Stationary

<sup>6</sup>N S- Non Stationary

The results are displayed in Table 1. The test statistics for the log levels of loan and advances, broad money supply, interest rate and cash reserve ratio are statistically insignificant. This shows the null hypothesis of a unit root present among the series cannot be rejected at levels for all the variables. Hence, this study further applies the unit root tests to the first difference of all the variables. A stationary series was obtained for all the variables at first difference. The PP test rejects the joint unit root null hypothesis for each variable at the 5 per cent level. Thus, from the result of the tests, the unit roots tests indicate that each variable is integrated of order one process. The evidence of an integrated series is further subjected to long run relationship test using Johansen co integration approach as shown in the subsequent table below;

**2 Co integration test**

Table 2': A Table showing Unrestricted Co integration Rank test

Hypothesized No. Of CE(s)	Eigen value	Trace Statistic	0.05 Critical Value	Prob.**
None*	0.525201	50.27814	47.85613	0.0291
At most 1	0.388413	26.44248	29.79707	0.1160
At most 2	0.258967	10.70815	15.49471	0.2301
At most 3	0.034317	1.117423	3.841466	0.2905

Source: Author's compilation from eviews 7.0

Table 3': A Table showing Unrestricted Co integration Rank test

Hypothesized No. Of CE(s)	Max-Eigen Statistics	0.05 Critical Value	Prob.**
None	23.83566	27.58434	0.1406
At most 1	15.73433	21.13162	0.2408
At most 2	9.590729	14.26460	0.2402
At most 3	1.117423	3.841466	0.2905

Source: Author's compilation from eviews 7.0

Generally, the existence of co integration signifies that there is at least one long-run equilibrium relationship among the variables. In this case, Granger causality exists among these variables in at least one way (Engle and Granger, 1987). The results of the long-run equilibrium relationship are presented in table 2 and 3 above. It shows that there exist at least one co integrating equation among the variables in the model. This conclusi

on is reached by comparing the maximum Eigen value and trace statistics with their corresponding critical values. An Eigen value or trace statistics greater than the critical value indicates a co integrated series. As shown in table 2 and 3 the trace statistics indicates the presence one co integrating equation at 5 percent level of significance. This further reveals the existence of a long-run equilibrium relationship among the variables estimated for the commercial banks' lending.

The VECM is used to correct the disequilibrium in the long run co integration relationship. It also tests for long and short-run causality among co integrated variables. The correction of the disequilibrium is achieved by the mean of the Error correction term (ECT).

Table 4: Normalized co integrating relationship

Normalized co integrating coefficients (Standard error in parenthesis)			
LLADVS <sup>1</sup>	LM2 <sup>2</sup>	LINTR <sup>3</sup>	LCRR <sup>4</sup>
1.000000	1.093530	0.485198	- 0.110367
	(0.02379)	(0.22387)	(-0.07439)
	[45.9659521]	[2.1673203]	[-1.4836268]

Source: Author's Compilation from E-views 7.0

Note: Standard error and T-statistics are stated in parenthesis as () and [] respectively

Table.4 shows result of the normalized co integration coefficients of the variables for the instance when there is at least one co integration equation as affirmed from table 4 with the trace statistics. The results in the table 4. are explained in regard to the inverse signs and magnitude of the variables in the normalized co integration result. The probability value of the T-statistic is used to indicate the significance or otherwise of the independent variable in the long run equation. Generally using the rule of thumb if the T-Statistics is 2 or greater than two, the variable is significant but if the reverse is the case then it is insignificant.

The result of the normalized co integrated relationship reveals a significant relationship between broad money supply, interest rate and banks' loan and advances while cash reserve apparently reveals a less significant influence on commercial banks' loan and advances within the scope of this study.

Specifically, the result from table 4 shows a significant relationship between money supply and banks lending at 1 percent level of significance. This further reveals that a percentage change in exchange results to a corresponding 1.094 percent change in lending. The analysis of the result shows a proportionate change in money supply leads to a more proportionate change in banks' loan and advances holding other variables at a constant. The evidence from the elasticity estimate reveals that the degree of responsiveness of banks' lending to the variations in

money supply is greater than one and therefore elastic. This further shows that money supply plays a significant role in determining the banks' lending in Nigeria. Hence in regard to the first objective of this study which is to determine how  $M_2$  affects commercial banks' lending ability in the economy, it is observed that a percentage increase in money supply significantly increases commercial banks' lending by 1.094 percent at 1 percent significance level. Therefore the null hypothesis that  $M_2$  has no significant impact on the influence of commercial banks' lending ability in the economy could be accepted by this study leading to the acceptance of the alternative hypothesis that  $M_2$  has a significant impact on the influence of commercial banks' lending ability in the economy.

The analysis of the estimated long run co efficient of interest reveals a significant long run relationship with banks' lending at 5 percent level of significance. A percentage change in interest rate indicates 0.485 percentage change in banks' loan and advances, all things being equal. The above evidence further reveals that a proportionate change in interest rate results to a less proportionate change in commercial banks' lending. It therefore implies that the degree of the responsiveness of banks' lending to the changes in interest rate is less than unit elasticity and thus inelastic. In respect to the second objective of the present study to determine how interest rate affects commercial bank lending ability in the economy, the evidence from the study shows there existence of a significant direct effect of interest rate on commercial banks' lending ability..

**Vector Error Correction**

The vector error correction model shows the short run dynamics between the variables in the co integration equation estimating the error correction. Table 4 shows the estimated coefficients for the error correction term based on the normalized commercial banks' loan and advances model.

From table 4 the result shows that the coefficient of the estimated banks' lending error correction result. The result of the error correction term as expected is negative and lies between zero and one and it is also significant at 5 percent level. The significance of the error correction model agrees with the co integration and gives the opinion that there is long run steady-state equilibrium between the level of share price index and the explanatory variables; exchange rate, inflation rate, interest rate and gross domestic product and oil prices.

Table 5: A Table showing the Vector Error Correction Estimates

Variable	D(LLADVS)	D(LM2)	D(LINTR)	D(LCRR)
ECM (-1)	-0.858816	0.161974	0.854438	-1.501539

Standard Error	(0.31502)	(0.18307)	(0.23490)	(0.88093)
T-Statistic	[-2.72624]	[ 0.88478]	[ 3.63753]	[- 1.70450]

Source: Author's Compilation from E-views 7.0. Standard error and T-statistics are stated in parenthesis as () and [] respectively.

The table above indicates that estimated lagged error correction term for commercial bank lending model. The magnitude of the error correction term is negative and appropriately signed, its absolute value lies between zero and one, and it's statistically significant. This suggests a long-run convergence of the model; it therefore implies that if any external shock is introduced into the model, the model would still converge back its equilibrium state with time. Evidence from result of the error correction estimate shows a relatively high speed of error adjustment of the model at 0.8588, this implies that 85.88 percent of current error in the model arising from exogenous shocks on the system would be corrected in the short run adjustment mechanism. These indicate that whenever there is the presence of external shock resulting to disequilibrium of the system, the system could easily make short-run adjustments to re-establish long-run equilibrium given the high speed of adjustment from the short-run to the long-run equilibrium at 85.88 percent per time.

**4 RESEARCH FINDINGS, RECOMMENDATION AND CONCLUSION**

From the research findings it was confirmed that there is a relationship between monetary policy and bank lending as explained below.

1. Money supply ( $M^2$ ) has a significant relationship which means is one of the major determinant of bank lending, an increase in money supply to the economy leads to more proportionate change in bank lending. Cash reserve ratio shows an insignificant relationship it implies that it does not have an effect on bank lending rate. In signs and magnitude it shows an inverse relationship with lending rate which shows an increase in cash reserve ratio would result to a decline in bank's lending capacity.
2. The positive relationship between interest rate (lending rate) and commercial banks loans and advances has implications to the bank. If the lending interest rate is high as been determined by the bank the public will not be encouraged to borrow from the bank this will lead to a decline in the bank lending to the public.
3. The negative relationship between cash reserve ratio and commercial banks loans and advances has implications to the lending ability of the bank to the economy. The positive effect occurs only when the regulatory authorities reduces the cash reserve ratio set for the bank there will be enough funds which could encourage the bank to lend out to the economy, while the negative effect is when the cash reserve ratio set by the

central bank is high and the bank is expected to meet up it the rate at which the banks would lend out will be reduced therefore, affecting the lending ability of the bank negatively.

#### 4.1. RECOMMENDATIONS

The recommendations from the findings are as follows:

1. It is recommended that government should put in place stringent rules and measures for M<sup>2</sup> to increase lending through open market operations (OMO) by purchasing of government securities such as treasury bill, treasury bonds etc. so there will be money available for lending and this will reduce the lending interest rate so that it will be easier for customers to assess loans from the bank for investment purposes.
2. The Central Bank of Nigeria should implement cash reserve ratio efficiently by increasing or reducing it as the economic parameters show to boost lending and borrowing by investors.

#### 4.2 CONCLUSION

From the research findings it can be concluded that there is a relationship between monetary policy and bank lending and is one of the major factor that influences bank lending to customers.

#### ACKNOWLEDGEMENT:

This Research Was Supported By Covenant University Ota, Ogun State, Nigeria.

#### REFERENCES

- [1] Engle.R. and Granger.C. (1987) "Co-integration and Error Correction: Representation, Estimation and Testing". *Econometrica* Vol 55, Issue 2, pp.251-276
- [2] Kashyap A.K and Stein J.C (2000)" What do a Million observations on Banks say about the transmission of monetary policy?" *American Economic Review* 90 (June); 407-428
- [3] Omankhanlen A.E (2011) "The Effectiveness of Monetary Policy in Achieving Economic Growth: the Case of Nigeria 1980-2009". *Euroeconomica*, Vol. 29, No 3.
- [4] Omankhanlen A.E (2014) "The Effect of Monetary Policy on The Deposit Money Bank System .*International Journal of Sustainable Economies Management*.3 (1) pp 39-51
- [5] Udeh (2015) "Impact of Monetary Policy Instruments on Profitability of Commercial Banks in Nigeria: Zenith Bank Experience". *Research Journal of Finance and Accounting* Vol. 6, No 10, pp 192-193.

- [6] Uremadu, S.O. (2012) "Bank Capital Structure, Liquidity and Profitability Evidence from Nigeria Banking System". *International Journal of Academic Research in Accounting, Finance and Management Sciences*, 98-113