

## EFFECT OF BANK LENDING RATE ON THE PERFORMANCE OF NIGERIAN DEPOSIT MONEY BANKS

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**Abstract:** This study examined the impact of bank lending rate on the performance of Nigerian Deposit Money Banks between 2000 and 2010. It specifically determined the effects of lending rate and monetary policy rate on the performance of Nigerian Deposit Money Banks and analyzed how bank lending rate policy affects the performance of Nigerian deposit money banks. The study utilized secondary data econometrics in a regression, where time-series and quantitative design were combined and estimated. The result confirmed that the lending rate and monetary policy rate has significant and positive effects on the performance of Nigerian deposit money banks. The implication of these is that lending rate and monetary policy rate are true parameter of measuring bank performance. We therefore recommend that government should adopt policies that will help Nigerian deposit money banks to improve on their performance and there is need to strengthen bank lending rate policy through effective and efficient regulation and supervisory framework.

**Keywords:** Bank, Lending Rate, Bank Performance, Financial System, Co-integration

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### 1.0 INTRODUCTION

The financial systems of most developing nations have come under stress as a result of the economic shocks of the 1980s. The economic shocks largely manifested through indiscriminate distortions of financial prices which includes interest rates, has tended to reduce the real rate of growth and the real size of the financial system relative to nonfinancial magnitudes (Davidson and Gabriel, 2009). Rasheed (2010), states that Nigerian economy saw different interest rates for different sectors in 1970s through the mid-1980s (Regulated Regime, 1960-1985). The preferential interest rates were based on the assumption that the market rate, if universally applied, would exclude some of the priority sectors. Interest rates were, therefore, adjusted periodically with 'visible hands' to promote increase in the level of investment in the different sectors of the economy. For example agriculture and manufacturing sectors were accorded priority, and the commercial banks were directed by the Central Bank to charge a preferential interest rates (vary from year to year) on all loans and advances to small-scale industries. Since 1986, the inception of interest rates deregulation, the government of Nigeria has been pursuing a market determined interest rates regime, which does not permit a direct state intervention in the general direct of the economy (Adebiyi and Babatope-Obasa, 2004).

Lending which may be on short, medium or long-term basis is one of the services that deposit money banks do render 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 embark on investment and development activities as a means of aiding their growth in particular or contributing toward the economic development of a country in general (Felicia, 2011).

Deposit money banks are the most important savings, mobilization and financial resource allocation institutions. Consequently, these roles make them an important phenomenon in economic growth and development. In performing this role, it must be realized that banks have the potential, scope and prospects for mobilizing financial resources and allocating them to productive investments and in return promote their performance. Therefore, no matter the sources of the generation of income or the economic policies of the country, deposit money banks would be interested in giving out loans and

advances to their numerous customers bearing in mind, the three principles guiding their operations which are, profitability, liquidity and solvency (Adolphus, 2011).

However, deposit money banks decisions to lend out loans are influenced by a lot of factors such as the prevailing interest rate, the volume of deposits, the level of their domestic and foreign investment, banks liquidity ratio, prestige and public recognition to mention just but a few.

Lending practices in the world could be traced to the period of industrial revolution which increase the pace of commercial and production activities thereby bringing about the need for large capital outlays for projects. Many captains of industry at this period were unable to meet up with the sudden upturn in the financial requirements and therefore turn to the banks for assistance (Ezirim, 2005). However, the emergence of banks in Nigeria in 1872 with the establishment of the African Banks Corporation (ABC) and later appearance of other banks in the scene during the colonial era witnessed the beginning of banks' lending practice in Nigeria. Though, the lending practices of the then colonial banks were biased and discriminatory and could not be said to be a good lending practice as only the expatriates were given loans and advances. This among other reasons led to the establishment of indigenous banks in Nigeria. Prior to the advent of Structural Adjustment Programme (SAP) in the country in 1986, the lending practices of banks were strictly regulated under the close surveillance of the bank's supervisory bodies. The SAP period brought about some relaxation of the stringent rules guiding banking practices. The Bank and Other Financial Act Amendment (BOFIA) 1998, requires banks to report large borrowing to the CBN. The CBN also require that their total value of a loan credit facility or any other liability in respect of a borrower, at any time, should not exceed 20% of the shareholders' funds unimpaired by losses in the case of commercial banks (Felicia, 2011).

This study becomes imperative because deposit money banks in Nigeria need to understand how to manage these huge assets in terms of their loans and advances. For the banks to balance their main objectives of liquidity, profitability and solvency, lending must be handled effectively and the banks must behave in a way that their potential customers are attracted and retained. The major problem of this study is therefore, the question of finding out the extent to which bank lending rate affect profitability in Nigeria Deposit Money Banks.

This paper is organized as follows; section one is the introduction while section two reviews the empirical and theoretical literature on interest rate margin and its impact on bank profitability; section three discusses the models and methodology while section four provides data and empirical evidence and the final section which is section five provides the summary, conclusion and recommendations of the study.

## **2.0 REVIEW OF RELATED LITERATURE**

### **2.1 Empirical Review**

A lot has been reviewed in terms of lending activities of various deposit money banks. Some opinions deliberated on the factor responsible for banks willingness to extend much credit to some sector of the economy, while some discussed effect of such extension of credits on productivity and output.

Felicia (2011) used regression analysis to investigate the determinants of commercial banks lending behaviour in Nigeria. The study discovered that commercial banks deposits have the greatest impacts on their lending behaviour.

Khat and Bathia (1993) used non-parametric method in his study of the relationship between interest rates and other macro-economic variables, including savings and investment. In his study he grouped (64) Sixty-Four developing countries including Nigeria into three bases on the level of their real interest rate. He then computed economic rate among which were gross savings, income and investment for countries. Applying the Mann - Whitney test, he found that the impact of real interest was not significant for the three groups.

Adofu and Audu (2010) used ordinary least square method to ascertain the assessment of the effects of interest rate deregulation in enhancing agricultural productivity in Nigeria. The study found out that interest rate play a significant role in enhancing economic activities and as such, monetary authorities

should ensure appropriate determination of interest rate level that will break the double - edge effect of interest rate on savers and local investors.

Rasheed (2010) used error correction model (ECM) to investigate interest rates determination in Nigeria. The study found out that as the Nigerian financial sector integrates more with global markets, returns on foreign assets will play a significant role in the determination of domestic interest rates.

## 2.2 Theoretical framework

The theoretical framework for this study is adapted from (Patnaik and Vasudevan, 1998), which tries to factor the degree of openness of an economy in the analysis of the influence of both internal and external factors on interest rate movements in a semi-open economy like Nigeria. Suppose we have a closed economy, in which there is no inflow or outflow of capital and the demand for money is the demand for real money. In such an economy, money is held by the economic units purely to finance transactions and increase the demand for money with real output. However, it is worthy of note, that holding money has an opportunity cost that is measured by the nominal rate of interest, with higher interest rates discouraging the holding of wealth in the form of money.

If  $M$  is assumed to be the nominal stock of money and  $P$  is the price level, real money demand is defined as  $M/P$ , which is a function of the interest rate,  $i$  and the output,  $Y$ . Short run equilibrium in the money market exists, when the demand for money is equal to the supply of money.

### 2.2.1 Loan Pricing Theory

Banks cannot always set high interest rates. Banks should consider the problems of adverse selection and moral hazard since it is very difficult to forecast the borrower type at the start of the banking relationship (Stiglitz and Weiss, 1981). If banks set interest rates too high, they may induce adverse selection problems because high-risk borrowers are willing to accept these high rates. Once these borrowers receive the loans, they may develop moral hazard behaviour or so called borrower moral hazard since they are likely to take on highly risky projects or investments (Chodecai, 2004). From the reasoning of Stiglitz and Weiss, it is usual that in some cases we may not find that the interest rate set by banks is commensurate with the risk of the borrowers.

### 2.2.2 Firm Characteristics Theories

These theories predict that the number of borrowing relationships will be decreasing for small, high-quality, informationally opaque and constraint firms, all other things been equal (Godlewski and Ziane, 2008).

### 2.2.3 Theory of Multiple-Lending

It is found in literature that banks should be less inclined to share lending (loan syndication) in the presence of well-developed equity markets. Both outside equity and mergers and acquisitions increase banks' lending capacities, thus reducing their need of greater diversification and monitoring through share lending (Carletti, 2006; Ongene and Smith, 2000; Karceski, 2004; Degryse, 2004). This theory has a great implication for banks in Nigeria in the light of the recent 2005 consolidation exercise in the industry.

### 2.2.4 The Signalling Arguments

The signalling argument states that good companies should provide more collateral so that they can signal to the banks that they are less risky type borrowers and then they are charged lower interest rates. Meanwhile, the reverse signalling argument states that banks only require collateral and or covenants for relatively risky firms that also pay higher interest rates (Chodechai, 2004; Ewert and Schenk, 1998).

### 2.2.5 Credit Market Theory

A model of the neoclassical credit market postulates that the terms of credits clear the market. If collateral and other restrictions (covenants) remain constant, the interest rate is the only price mechanism. With an increasing demand for credit and a given customer supply, the interest rate rises, and vice versa. It is thus believed that the higher the failure risk of the borrower, the higher the interest premium (Ewert, 2000).

### 2.3 Conceptual Clarification of Interest Rates.

Interest rate is the amount of interest paid per unit of time expressed as a percentage of the amount borrowed. The cost of borrowing money, measured in naira, per year per naira, borrowed, is the interest rate. Interest rates differ mainly in term/maturity. When maturity and liquidity together with other factors are considered, many different financial instruments and so many different interest rates will emerge (Anyanwu, 1997). Interest rates can either be nominal or real.

Nominal interest rate can be measured in naira terms, not in terms of goods. The nominal interest rate measures the yield in naira per year, per naira invested while the real interest rate is corrected for inflation and is calculated as the nominal interest rate minus the rate of inflation (Pandey, 1999).

### 2.4 Interest Rate charged on Borrowers.

There are daily reports of how Nigerian banks rip off their customers through various charges and practices. Often times, customers complain and cry out for appropriate regulatory intervention. Unfortunately, their complaints seem to fall on deaf ears, because they are unaware of any positive regulatory action in response thereto. Emboldened by regulatory inaction and indifference (which suggest tacit approval), many Nigeria banks now engage in more exploitative practices. The categories of such predatory bank practices are unfolded daily.

Normally, when a customer secures loan from a bank, the latter fixes a negotiated lending rate based on the prevailing interest rate approved by the apex bank. Any change in the interest rate should be brought to the notice of the borrower except otherwise agreed. In Nigeria, however, the lending rate is rarely negotiated and, when it is reviewed upwards by the Central Bank of Nigeria (CBN), the average bank automatically applies the new rate to the outstanding loan without notifying the borrower (Okafor, 2011). Ironically, the same bank hides the fact of any downward review of the lending rate from its mostly uninformed customer, thereby illegally subjecting the customer to a higher interest regime.

Often, what the bank staff present to a prospective borrower during loan negotiations as the total charges become hydra-headed once he swallows the bait. While processing loans, Nigerian banks impose on borrowers both "processing" and "administrative" fees which are duplicates. Again, they charge borrowers and corporate customers higher than what they pay lawyer to conduct searches at land and company registries. We believe that the interest rates Nigerian banks display at their offices and report to CBN per Section 23 of the Banks and Other Financial Institutions Act (BOFIA, Chapter B3, Laws of the Federation of Nigeria 2004) are different from what most of them impose on customers. To verify this, CBN may wish to randomly obtain and examine depositors/borrowers account statements from banks.

## 3.0 METHODOLOGY

### 3.1 Model Specification

The primary model showing the relationship between Bank Lending Rate and Performance of Nigerian Deposit Money is specified thus:

$$BE = F(LR, MPR) \dots 1$$

The above model was modified and estimated in a simple form:

$$BE = F(LR) \dots 2$$

$$BE = F(MPR) \dots 3$$

However, the linear function of the above notation is stated as

$$GDP = b_0 + b_1LR + \mu_t \dots 3.3$$

To capture the second hypothesis, the model is expressed as;

$$BE = f(MPR) \dots 3.4$$

The linear function of the above notation is stated as

$$BE = b_0 + b_1LR + \mu_t \dots 3.5$$

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Where BE	=	Dependent Variable ( $Y_t$ )
X	=	Independent Variables.
LR	=	Lending Rate ( $X_t$ )
MPR	=	Monetary Policy Rate ( $X_t$ ).
t	=	Time series (Annual)
$\alpha_0$	=	Represents the constant on Y axis.
$\alpha_1 \dots \alpha_2$	=	Are the Regression co-efficient.
$\mu_t$	=	Error or disturbance term.

To determine the consistency of the impact of bank lending rate on Nigerian Deposit Money Banks performance, lagged linear value of the variables was include in the regression estimation of equation (2) above.

### 3.2 Estimation Technique

#### 3.2.1 Unit Root Test

The first step involves testing the order of integration of the individual variables under consideration. Researchers have developed several procedures for the test of order of integration. The most popular ones are Augmented Dickey-Fuller (ADF) test due to Dickey and Fuller (1979, 1981), and the Phillip-Perron (PP) due to Phillips (1987) and Phillip and Perron (1988). Augmented Dickey-Fuller test relies on rejecting a null hypothesis of unit root test (the variables are non-stationary) in favour of the alternative hypotheses of stationarity. The tests are conducted with and without a deterministic trend (t) for each of the variables.

#### 3.2.2. The Co-integration Test

The second step is the testing of the presence or otherwise of co-integration between the variables of the same order of integration through forming a co-integration equation. The basic idea behind co-integration is that if, in the long-run, two or more variables move closely together, even though the variables themselves are trended, the difference between them is constant. It is possible to regard these variables as defining a long-run equilibrium relationship, as the difference between them is stationary (Hall and Henry, 1989). A lack of co-integration suggests that such variables have no long-run relationship: in principle, they can wander arbitrarily far away from each other (Dickey, 1991). We employ the maximum-likelihood test procedure established by Johansen and Juselius (1990) and Johansen (1991) in testing.

### 4.0 Data and Empirical Results.

#### 4.1. Unit Root Test

There is need to know the status of the variables used in the study. To realize this, the Unit Root Test is carried out to know if the data of the variables are stationary with respect to time. The result as attached in appendix shows the results of the stationary test for all variables used. The stationary level is considered after comparing the ADF against the Mackinnon Critical value at 5% level. The variables are Bank Earnings (BE), Lending Rate (LR) and Monetary Policy Rate (MPR). From the result, it shows that the absolute values of Mackinnon Critical Value at 5% are less than the ADF test statistical value in all the variables. Hence, the null hypothesis of the presence of unit root at 1% is rejected and agrees that there is stationary of the variables at first and second differences of the time series variables.

#### 4.2 Co-integration Tests

The test for co-integration was performed using Johansen maximum likelihood estimation approach. Under this approach, trace test statistics was used on testing whether a long run relationship exist

among the variables. The result in the co-integration test as attached in appendix shows the existence of co-integration or long-run relationship among Bank Earnings (BE), Lending Rate (LR) and Monetary Policy Rate (MPR). The condition for co-integration among the variables is that the critical value at 5% must be less than the likelihood ratio. Considering the result, the critical value at 5% is less than the likelihood ratio at none hypothesized (i.e. the first column). Hence, the hypothesis of no co-integration has been rejected at 5% significance level. Furthermore, the condition for the long-run model among the one (1) co-integration equations is that the equation with the highest log-likelihood (at absolute term) is chosen to be the long-run model. Having established the long-run relationship among the variables through the use of Johansen co-integration test, the next step is to switch to the error correction model. An over parameterized error correction model is estimated by setting the lag length long enough in order to ensure that the dynamics of the model have not been constrained by a too short length.

#### 4.3 Presentation of ECM Results

Regression Result on the impact of lending rate on bank performance as proxied by bank earnings.

The empirical data associated with this regression results are as stated below;

**BE = f (LR) ... Model 1**

**TABLE 1: REGRESSION OF BE ON LR**

**Dependent Variable: LOG(BE)**

**Method: Least Squares**

**Sample: 2000-2010**

**No of observation 11**

Variable	Coefficient	St.Error	t-Statistic	Prob.
C	1.699059	2.698657	0.629594	0.0000
LOG(LR)	1.318553	0.925333	1.424950	0.0000

**R<sup>2</sup> = 0.856474**

**Source: E-views 7.0**

**BE = f (MPR) ... Model 2**

**TABLE 2: REGRESSION OF BE ON MPR**

**Dependent Variable: LOG(BE)**

**Method: Least Squares**

**Sample: 2000-2010**

**No of observation 11**

Variable	Coefficient	St.Error	t-Statistic	Prob.
C	4.600905	1.397893	3.291314	0.0000
LOG(MPR)	0.370377	0.548561	0.675179	0.0000

**R<sup>2</sup> = 0.645324**

**Source: E-views 7.0**

#### 4.3 Analysis of the model above

The equation in the first model regressed LOG(BE) on LOG(LR). The coefficient of the constant term is 1.699. The sign borne by the regression coefficient of constant is positive implying at zero performance of the independent variable, the BE increases. The regression coefficient of LOG(LR) carries positive sign and its t-value (1.424950) is statistically significant at 5% level. This implies that LR affects the BE significantly. The t-value for the regression coefficient of LOG(LR) is significant as confirmed by the t-probability (0.0000). It is estimated from the result that 1% increase in LOG(LR), on the average, will lead to 1.31% increase in LOG(BE). The computed value of R<sup>2</sup> = 0.856474 shows that 85.65% of the total variation in the Bank Earnings (BE) is accounted for by the explanatory

variable (LR) while 14.35% of the total variation in BE is attributable to influence of other variables which are not included in the regression model.

The equation in the second model regressed LOG(BE) on LOG(MPR). The coefficient of the constant term is 4.601. The sign borne by the regression coefficient of constant is positive. This implies that holding the independent variable, the BE increases. The regression coefficient of LOG(MPR) carries positive sign and its t-value (0.675179) is statistically significant at 5% level. This implies that MPR affects the BE significantly. The t-value for the regression coefficient of LOG(MPR) is significant as confirmed by the t-probability (0.0000). It is estimated from the result that 1% increase in LOG(MPR), on the average, will lead to 0.37% increase in LOG(BE). The computed value of  $R^2 = 0.645324$  shows that 64.53% of the total variation in the Bank Earnings (BE) is accounted for by the explanatory variable (MPR) while 35.47% of the total variation in BE is attributable to influence of other variables which are not included in the regression model.

## 5.0 Findings, Conclusion and Recommendation

### 5.1 Findings

This research work studied the impact of effect of bank lending rate on the performance of Nigerian Deposit Banks, the researcher subjected the data collected to Unit Root, Co-integration, and Error Correction tests.

From the findings, it was established that bank lending rate has significant effect on the performance Nigerian banking industry. This finding is confirmed by the p-value of the regression coefficient of LOG(LR) which is 0.0000. The value is seen to be less than 0.05 (5%) level of significance. The coefficient sign of the parameter estimate is positive. Bank lending rate as a variable, is a true parameter for measuring bank performance, it possesses a positive sign. Thus, it is estimated from the result that increase in the bank lending rate by 1%, on the average, will result to 1.31% increase in BE. Should there be more and higher lending rate, bank performance will be enhanced. The computed coefficient of determination (0.856474) shows a high proportion of variation in the dependent variable (LR). Thus, there is 85.65% of the total changes in the Bank Earning (BE) which is explained by LR.

In model 2, it was found that Monetary Policy Rate (MPR) has significant effect on Bank Earnings (BE). In this case, MPR is a true parameter of measuring bank performance. The findings made is confirmed by the p-value of the regression coefficient of LOG(MPR) which is 0.0000. Obviously, this value is less than the 0.05 (5%) level of significance. It is found from the result that 1% increase in monetary policy rate (MPR), will bring about an approximate increase by 0.30% increase in BE. It is observed from this result that when government increases her monetary policy rate, bank performance will be enhanced and this will eventually lead to economic growth in Nigeria.

### 5.2 Conclusion

Nigerian deposit money banks remain dominant in the banking system in terms of their shares of total assets and deposit liabilities. Their total loans and advances, a major component of total credits to the private sector are still on the increase in spite of the major constraints posted by the government regulations, institutional constraints and other macro economic factors. We concludes that, both government and deposit money banks should be mindful of the facts that the environments in which they operate are important factors in the bank performance. Where the environment is conducive and supportive, performance of banks is enhanced and good lending behaviour is guaranteed. But where the environment is unstable and harsh, the bank's performances suffer. Deposit money banks should note that they need to do a lot in order to ensure good lending behaviour even where a good measure of macro economic stability is achieved. This is because of the positive and significant relationship found between bank lending rate and bank performance in both short and long run.

### 5.3 Recommendations

Based on the findings in this study, the following suggestions are recommended:

1. Having seen that there exists a long run and short run relationship between bank earnings and explanatory variables (LR and MPR) through the use of co-integration test and error correction model, government should adopt policies that will help Nigerian deposit money banks to improve on their performance.
2. There is need to strengthened bank lending rate policy through effective and efficient regulation and supervisory framework.
3. Banks should try as much as possible to strike a balance in their loan pricing decisions. This will help them to be able to cover cost associated with lending and at the same time, maintain good banking relationship with their borrowers.

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