

# Determinants of Commercial Banks' Lending Behavior in Nigeria

Felicia Omowunmi Olokoyo

Department of Finance, School of Business, College of Development Studies, Covenant University

Ota, Ogun State, Nigeria

Tel: +234-802-394-8641 Email: [felicitymy79@gmail.com](mailto:felicitymy79@gmail.com)

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## Abstract

This study investigated the determinants of commercial banks' lending behaviour in the Nigerian context. The study aimed to test and confirm the effectiveness of the common determinants of commercial banks lending behaviour and how it affects the lending behaviour of commercial banks in Nigeria. The model used is estimated using Nigerian commercial banks loan advance (LOA) and other determinants or variables such as their volume of deposits (Vd), their investment portfolio (Ip), interest (lending) rate (Ir), stipulated cash reserve requirements ratio (Rr) and their liquidity ratio (Lr) for the period; 1980 – 2005. The model hypothesizes that there is functional relationship between the dependent variable and the specified independent variables. From the regression analysis, the model was found to be significant and its estimators turned out as expected and it was discovered that commercial banks deposits have the greatest impacts on their lending behaviour. The study then suggests that commercial banks should focus on mobilizing more deposits as this will enhance their lending performance and should formulate critical, realistic and comprehensive strategic and financial plans.

**Keywords:** Lending, Deposits, Investment, Portfolio, Liquidity, Solvency, Interest rate.

## 1. Introduction

Lending which may be on short, medium or long-term basis is one of the services that commercial 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 mean of aiding their growth in particular or contributing toward the economic development of a country in general.

Commercial 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. Therefore, no matter the sources of the generation of income or the economic policies of the country, commercial 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. However, commercial 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 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. 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 banks 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.

Other banking enactment stipulated that banks loans should be directed to preferred sector of the economy in order to enhance economic growth and development. In full consideration of all these regulations the banks resorted to prudential guidelines necessary to avoid failures and to enhance maximum profitability in their banks lending activities. These generally depend on type of bank, the capital base, the deposit base and density of the deposit, the credit guidelines issued from time to time by the controlling authority and internal policies of the banks since loans and advances accounts for the highest percentage of the total assets of the banks. This study becomes imperative because commercial 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. This study will try to provide insight into the best lending practice and behaviour.

The major objective of this paper is to confirm the effectiveness of the common determinants of commercial banks lending as specified and how it affects the lending of commercial banks in Nigeria. The paper has five sections; following this introduction is the literature review as section two, section three is the methodology of the study while analysis of data and the conclusion make up the last two sections.

## 2. Literature Review and Theoretical Framework

A lot has been reviewed in terms of lending activities of various commercial 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. Most of these earlier studies agreed on the fact that it is logical for banks to have some basic lending principles or consideration to act as a check in their lending activities. Since there are many studies in respect of bank's lending behaviour, it is therefore imperative to highlight and consider some factor that economist and professionals alike have proposed as virtually significant in explaining the determinants of commercial banks lending behaviour.

In the view of Nwankwo (2000), "credit constitutes the largest single income-earning asset in the portfolio of most banks. This explains why banks spend enormous resources to estimate, monitor and manage credit quality". This is understandably, a practice that impact greatly on the lending behaviour of banks as large resources are involved. Chodechai (2004) while investigating factors that affect interest rates, degree of lending volume and collateral setting in the loan decision of banks, says:

*Banks have to be careful with their pricing decisions as regards to lending as banks cannot charge loan rates that are too low because the revenue from the interest income will not be enough to cover the cost of deposits, general expenses and the loss of revenue from some borrowers that do not pay. Moreover, charging too high loan rates may also create an adverse selection situation and moral hazard problems for the borrowers.*

According to Adedoyin and Sobodun (1991), "lending is undoubtedly the heart of banking business. Therefore, its administration requires considerable skill and dexterity on the part of the bank management". While a bank is irrevocably committed to pay interest on deposits it mobilized from different sources, the ability to articulate loanable avenues where deposit funds could be placed to generate reasonable income; maintain liquidity and ensure safety requires a high degree of pragmatic policy formulation and application.

Commercial banking in Nigeria witnessed an era of impressive profitability, characterized by high competition, huge deposits and varied investment opportunities; in an effort to make quick profits the commercial banks relied essentially on self liquidating loans and diversified their portfolio into less risky investments with safe margin. The current trend in Nigerian banking and finance sector, suggest that the days of cheap profits are now over and only banks with well conceptualized lending and credit administration policies and procedures can survive the emerging competition.

Ezirim (2005), further stressed that "Bank lending decisions generally are fraught with a great deal of risks, which calls for a great deal of caution and tact in this aspect of banking operations. The success of every lending activity to a great extent therefore, hinges on the part of the credit analysts to carry out good credit analysis, presentation, structuring and reporting.

Osayameh (1991), supported this view by stressing that "the days of armchair banking are over and that the increasing trend in bad debts and absence of basic business/corporate advisor services in most Nigerian commercial banks, suggest an apparent lack of use of effective lending and credit administration techniques in these banks". Prior to 1984, the bulk of most commercial bank deposit was made up of demand deposit. The position has now changed with the

evolution of improved treasury management by corporate savers and customers as well as favorable interest rate now payable on deposits, particularly since interest rates were regulated in 1987. The result of this is additional rise in cost of funds for banks. If they are able to meet the cost element in fund and eke out some profits to meet corporate growth and shareholders' expectation, they must really give adequate attention to the single most important source of their earnings-lending and credit administration.

Emphasizing this assertion, Osayameh (1996) further stressed that, "the major objective of commercial banks' lending is to maximize profit". The staggering increase in volume of banks credit in Nigeria in 2005 alone lends credence to this assertion. In 2005, aggregate banks credit to the domestic economy grew by 30.8% to a staggering increase of N2,007.4 billion compared with the rate of 22.5 per cent, while credit to the core private sector increased by 29.4 per cent to N1,950 billion(CBN). Management of such resources should therefore transcend the use of traditional techniques based mainly on the use of rule-of thumb, hunches and experience. The present volume and complexity of transaction in bank lending and credit administration in Nigeria call for the use of scientific techniques like those of management science and operations research to aid their lending and credit administration.

Ojo (1999), in a study on roles and failure of financial intermediation by banks in Nigeria revealed that, "commercial banks can lend on medium and short term basis without necessarily jeopardizing their liquidity. If they must contribute meaningfully to the economic development, the maturity pattern of their loans should be on a long term nature rather than of short term period". However, Oloyede (1999) claimed that "it is generally acknowledged that commercial banking by its nature is highly prone to volatility and fragility – whether arising from exogenous shocks or endogenous policy measures – and therefore, amenable to regulations and supervision". The forms of regulation vary, but in general, they embrace statutory regulations or rules of behaviour that may be administratively imposed or that can be guided through a market-oriented approach. One of such guidelines is Section 20 of Bank and Other Financial Institution Act (BOFIA) as amended which restricted the terms and amount of loans that can be given to banks insider. For instance, a bank is not allowed to grant unsecured credit facilities in excess of one year to any of his officers and employees.

Similarly, Chizea (1994) asserted that "there are certain aspects of fiscal and monetary policies which could affect the decision of the discerning and informed public to patronize the bank and the lending behaviour of commercial banks. Paramount amongst these measures is what could be called the interest rate disincentive. Interest rates have been so low in the country that they are negative in real terms". As inflation increased, the purchasing power of money lodged in deposit accounts reduce to the extent that savers per force pay an inflation tax. There is also the fear that the hike in interest rates would increase inflation rates and make a negative impact on the rate of investment.

Usman (1999) also supported this position by stating that "a major regulation affecting commercial banks lending in Nigeria is the restriction on the amount of interest they are allowed to pay on deposits in an effort to attract additional depositors and the interest they charge on their fund based activities". Goldfeld and Chandler (1980) claimed that, "commercial banks must pay more attention to liquidity than many other types of financial institutions such as life insurance companies. This results from the high turnover of their debt liabilities. A large part of the gross out payments by a bank is met from current gross receipt of funds in the normal course of business".

Similarly, John (1993) commented that, "the ability of commercial banks to promote growth and development depends on the extent to which financial transactions are carried out with trust and confidence and least risk". They require safe and sound banking practices. Where commercial banks indulge in unsafe and unsound banking practices, the confidence and trust, which the public reposes in them, may be threatened.

Usman (1999), commenting on the factors that affect commercial banks' lending behaviour said that, "the sound and viable functioning of commercial banks in Nigeria is adversely affected by the choice of certain policy instruments for the regulation of banking operations. Such instruments include a rigidly administered interest rate structure, directed credit, unremunerated reserve requirements and stabilizing liquidity control measures like the stabilization securities of the past".

Ituwe (1983) also asserted that, "a bank's ability to grant further advances is checked by the available cash in its vault. Customers' drawings are paid in two ways, either in cash or through bank accounts. Since cheques have to be met in cash in many cases, commercial banks, therefore, have to stock reasonable quantity of cash to meet customers' demands". Where a bank grants advances in excess of its cashing ability, the bank soon runs into difficulty in meeting its customers' cash drawings. Chodechai (2004) further stressed that "banks' lending decisions are also influenced by the past relationship with the borrowers". Past relationship according to him can help banks to obtain more private information, leading to a more accurate understanding of the borrower's business and financial situation. Carletti et al (2006) however, discussing on multiple-lending is of the opinion that banks choose to share lending whenever the benefit of greater diversification, in terms of higher cost per project monitoring dominates the cost of free-riding and

duplication of efforts.

## 2.1 Theoretical Framework

### 2.1.1 Loan Pricing Theory

Banks cannot always set high interest rates, e.g. trying to earn maximum interest income. 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.

### 2.1.2 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 & Ziane, 2008)

### 2.1.3 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 and after a process consolidation. Both outside equity and mergers and acquisitions increase banks' lending capacities, thus reducing their need of greater diversification and monitoring through share lending. (Carletti et al, 2006; Ongene & Smith, 2000; Karceski et al, 2004; Degryse et al, 2004). This theory has a great implication for banks in Nigeria in the light of the recent 2005 consolidation exercise in the industry.

### 2.1.4 Hold-up and Soft-Budget-Constraint Theories

Banks choice of multiple-bank lending is in terms of two inefficiencies affecting exclusive bank-firm relationships, namely the hold-up and the soft-budget-constraint problems. According to the hold-up literature, sharing lending avoids the expropriation of informational rents. This improves firms' incentives to make proper investment choices and in turn it increases banks' profits (Von Thadden, 2004; Padilla and Pagano, 1997). As for the soft-budget-constraint problem, multiple-bank lending enables banks not to extend further inefficient credit, thus reducing firms' strategic defaults. Both of these theories consider multiple-bank lending as a way for banks to commit towards entrepreneurs and improve their incentives. None of them, however, addresses how multiple-bank lending affects banks' incentives to monitor, and thus can explain the apparent discrepancy between the widespread use of multiple-bank lending and the importance of bank monitoring. But according to Carletti et al (2006),

*When one considers explicitly banks' incentives to monitor, multiple-bank lending may become an optimal way for banks with limited lending capacities to commit to higher monitoring levels. Despite involving free-riding and duplication of efforts, sharing lending allows banks to expand the number of loans and achieve greater diversification. This mitigates the agency problem between banks and depositors, and it improves banks' monitoring incentives. Thus, differently from the classical theory of banks as delegated monitors, their paper suggested that multiple-bank lending may positively affect overall monitoring and increase firms' future profitability.*

### 2.1.5 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).

### 2.1.6 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 et al, 2000).

### 3. Methodology

For studies that involve measurement of variables such as are used in this study, analytical method is the most appropriate method to be used. Hence, this study is analytical in nature and inferential statistical analysis was employed. Secondary data that captured the whole population of commercial banks (89 banks) in Nigeria for the period 1980 – 2005 were also used in the study. The scope was limited to 2005 because of the major banks' consolidation that took place from December 2005 which drastically reduced the numbers of banks in Nigeria.

#### 3.1 Formulation of Empirical Model

It could be conjectured from the works reviewed in the previous section that the lending of commercial bank in Nigeria is determined by some factors both at the micro and macro levels. Thus in respect of the hypotheses stated below, the main issue is an investigation of the relationship that exists between the loan and advances of commercial banks and each of the other explanatory variables that have been identified through literature and theory i.e. volume of deposits, investment portfolio, interest rate, cash reserve requirement, liquidity ratio, foreign exchange and gross domestic product. Other factors not explicitly included in the model are policy instruments for regulation of banks operation like government control and monetary authorities' guidelines and past relationship with customers. These are captured by the error term in the model. The model adopted for the paper assumes an underlying relationship between the variables expressed in a functional form and banks' loans and advances. The belief was informed by Usman (1999) that banks lending should vary from time to time with the variables expressed although with the addition of two macroeconomic variables i.e. gross domestic product(GDP) and foreign exchange (Forex).

The model is specified implicitly below:

$$LOA = f( Vd, Ip, Ir, Rr, Lr, Fx, Gdp, Z ) \quad (1)$$

Where Z contains other variables not explicitly included in the model.

The explicit form of equation (1) above is represented as follows:

$$LOA = \alpha_0 + \alpha_1 Vd + \alpha_2 Ip + \alpha_3 Ir + \alpha_4 Rr + \alpha_5 Lr + \alpha_6 Fx + \alpha_7 Gdp + \mu \quad (2)$$

Where:

LOA: Loans and Advances

Vd: Volume of Deposits

Ip: Investment Portfolio

Ir: Interest Rate (Lending Rate)

Rr: Cash Reserve Requirement Ratio

Lr: Liquidity Ratio

Fx: Annual Average Official Exchange Rate of the Naira vis-à-vis the United State's Dollar

Gdp: Gross Domestic Product at current market price

$\mu$ : error term controlling for unit-specific residual in the model

$\alpha_0$ : intercept of the regression line

$\alpha_{is}$  (i=1-7) : coefficients to be estimated and their apriori expectations are as follows:  $\alpha_1, \alpha_2, \alpha_5, \alpha_6$  and  $\alpha_7 > 0$  while  $\alpha_3, \alpha_4, < 0$

The model specified above, would be used to empirically achieve the objective of the study.

#### 3.2 Statement of Hypotheses

The main arguments of the study were synthesized into the following hypothesis:

**H<sub>0</sub>**: No functional relationship exists between the dependent variable (banks' loans and advances and specified independent variables (volume of deposits, level of domestic and foreign investment, interest rate, cash reserve requirement and liquidity ratio).

**H<sub>1</sub>**: There is functional relationship between the dependent variable (banks' loans and advances and specified independent variables (volume of deposits, level of domestic and foreign investment, interest rate, cash reserve requirement and liquidity ratio).

#### 3.3 Sources of Data

The sample analyzed in this paper consists of statistical secondary data collected from Annual Reports of the Nigerian Deposit Insurance Corporation (NDIC) and Statistical Bulletin of the Central Bank of Nigeria (CBN) for the period of 1980 – 2005 (26 years). Nominal variables were used in the study.

#### 4. Analysis of Data Collected

This section deals with analysis of data used in this paper (see Table 1 in the appendix). The paper adopts econometric approach to test the degree of correlation between the variables by employing the multiple regression analysis of the Ordinary Least Square (OLS) method with E-Views 5.1 package. Other error correction models employed are the Unit Root Test using the Augmented Dickey-Fuller (ADF) technique, the Johansen's Multivariate Co-integration Test which shows the short run and long run relationship between the specified variables and the Vector Error Correction Estimates. The variables were logged to bring them to a comparative level in as much as log captures rate of change within the specified variables (Note 1).

##### 4.1 Interpretation of Results

###### 4.1.1 Ordinary Least Square Estimation

From the results of the estimated OLS regression equation, the coefficient of the multiple determinations - R-squared of 0.989 and F-statistics of 367.79 were far too high. Since the estimation was not blue- best linear unbiased estimator, there is an implication that the result may be unreliable as the time series may not be stationary. Hence, the need for a unit root test.

###### 4.1.2 Unit Root Test of Variables

It had been shown in econometric studies (see Engle and Granger, 1987) that most macroeconomic time series are not stationary at levels. This implies that most ordinary least squares (OLS) regressions that are carried out at levels may not be reliable. Giving this knowledge, testing for stationarity of variables to obtain a more reliable result becomes very essential. This paper carried out stationarity test of the variables using Augmented Dickey-Fuller (ADF) (Note 2) Unit Root Test at both intercept with and without trend, which are reported in Table 2 (see appendix).

In Table 2 as shown in the appendix, it is obvious that all the variables were stationary at first difference i.e. I(1) series with the exception of logVd and logRr which are stationary at second difference. This could be traced to their volatility nature. The result implies that all variables, which were I(1) series have to be differenced once and those with I(2) twice, to yield meaningful results that will be useful in making inference.

###### 4.1.3 Cointegration Tests

When a linear combination of variables that are I(1) produces a stationary series, then the variables may need to be cointegrated. This means that a long-run relationship may exist among them, which connotes that they may wander from one another in the short-run but in the long-run they will move together. To establish whether long-run relationship exists among the variables or not, Cointegration test using Johansen's multivariate method was carried out and reported in Table 3 as shown in the appendix.

Using the trace likelihood ratio, the results point out that the null hypothesis of no cointegration among the variables is rejected in favour of the alternative hypothesis up to four cointegrating equations at 5% significant level because the values exceed the critical values. This means there are at least four integrating equations, which implies that a unique long-run relationship exists among the variables and the coefficients of estimated regression can be taken as equilibrium values.

###### 4.1.4 Vector Error Correction Estimates

Given the cointegration results as discussed above, the study went further to estimate the regression (equation 2) using vector error correction approach. This is reported in Table 4 (see appendix).

Going through the results in Table 4 as shown in the appendix, the variables appeared with the expected signs except for interest rates and minimum cash required ratio which were expected to be negative. This result is contrary to major beliefs that these variables impact negatively on the amount of loans and advances that can be extended by commercial banks in Nigeria. By and large, the results indicate that the economic criterion for the model estimation was satisfactory.

The error correction term – EC (-1) which has the expected negative sign, is significant at 10% with absolute value of 0.71748. The implication of this is that there is convergence in the long run, as was earlier revealed by the cointegration test. The coefficient indicates that the speed of adjustment from the short-run to the long-run is high and about 71.7% errors made in the previous year are corrected in the current year. This was further buttressed by the first differenced

lagged value of the dependent variable-  $dlogLoa(-1)$  that is significant at 1% level. This implies that the banks' lending performance of the previous year significantly and positively affects the current year's performance.

With respect to the general significance of the explanatory variables, the R-squared value implies that about 79.9% change in  $dlogLoa$  are explained by the variations in explanatory variables of performance, denoting that the regression has good fit and is reliable. The F-statistic, a measure of the overall significance of the regression, shows that the explanatory variables employed are significant at the 5% level, which is supported by low standard error of regression equation signifying minimized sum of squared error.

In terms of the explanatory variables, the t-statistics reveal that volume of deposits and investment portfolio of banks are significant at 1% level, portraying that the volume of deposits banks are able attract and the level of their investment portfolio greatly impact on the banks' lending performance and behaviour. The coefficients, which denote elasticity of performance with respect to the individual explanatory variable, demonstrate that N1million increase in the volume of deposit and investment portfolio will result to about N6.80m and N3.18million increase in loans and advances of banks respectively.

Foreign exchange and gross domestic product are statistically significant at 10% level each, showing that the level foreign exchange and gross domestic product of an economy at any given time impact on banks' lending behaviour. The coefficients of these explanatory variables portray that \$1 increase in foreign exchange and N1 million increases in the Nigerian gross domestic product will result to about N1.1m and N2.4million increase in loans and advances of banks respectively. This equally connotes that a high gross domestic product of the Nigerian economy will enhance lending performance of banks in Nigeria.

The coefficients of interest rate, minimum cash requirement ratio and liquidity ratio further demonstrate that there is a positive functional relationship between commercial banks loans and advances and the interest rate (lending rate), stipulated cash requirement and liquidity ratios. The regression coefficients show that every 1% increase in lending rate, cash reserve requirement and liquidity ratios for commercial banks will cause their loans and advances to change by 0.9%, 0.12% and 0.04% respectively. These positive correlations disagree with the point that two of the variables –  $I_r$  and  $R_r$  tend to change in opposite directions with loans and advances of commercial banks in Nigeria. This indicates that high lending rate and stipulated cash reserve requirement ratio of commercial banks may not necessarily translate into poor lending performance or lower proportion of commercial banks' funds available for lending respectively. For the test of reliability, the t-values of 0.5962, 0.505 and 0.1409 respectively are lower than the t-tabulated values at 1%, 5% and 10% significant levels which show that the parameter estimates are insignificant at all the levels. Therefore, the null hypotheses are accepted while the alternatives hypotheses are rejected meaning that the lending rate, specified cash reserve requirement and liquidity ratios of commercial banks have no significant effects on their lending behaviour.

#### *4.2 Implication of Results*

From the regression results discussed above, some findings and implications can be highlighted. First, the cointegration test shows the existence of a unique long-run relationship between banks' lending, volume of deposit, investment portfolio, interest rate, minimum cash requirement ratio, liquidity ratio, foreign exchange and gross domestic product. The error correction term also explains that about 71.7% of errors made in the previous year would be corrected in the current year for banks in Nigeria.

Though only four of the expressed explanatory variables –  $V_d$ ,  $I_p$ ,  $F_x$ , and  $G_d$  were discovered to have significant influence on the lending behaviour of banks, all the variables are positively correlated with bank lending. This implies that the explanatory variables tend to move in the same direction with banks' loan and advances.

Another implication is that though the lending rate charged by banks is relevant to their lending performance, the effect of high lending rate on banks' lending is not pronounced. This may be due to the fact that commercial banks still have the highest market share in Nigeria and the other financial institutions are not yet tough competitors. Another reason may be the relationship factor whereby the trusts the customers have in the banks, make them overlook the high rate. This lends voice to Chodechai (2004) that relationship factors are important in lending decisions of banks. Commercial banks should however take cognizance of the long-run effect as this may not always be the case.

The significant impact of foreign exchange and gross domestic product on banks' lending suggests that banks are expected to have considerable familiarity with the economic features of their locality and general economic trends. That is why banks should be in the project-evaluation business (see Chodechai, 2004; Manove, Padilla and Pagano, 2000).

Another implication is that monetary policies such as liquidity requirement and cash requirement ratio do not impact negatively on banks' lending behaviour. Bank should therefore always ensure compliance with these policies. However,

because of the long-run relationship that exist between these policies and bank lending, there is need to ensure that this policies are implemented with needed promptness for the effects to be felt on time (Osabuohien, 2007).

Volume of deposit has the highest coefficient value of 6.8004. The implication of this is that this explanatory variable has the highest impact and influence on the lending behaviour of commercial banks and a change in it will yield the highest change in banks' loans and advances. Therefore banks should strive hard to manage their deposits efficiently so that their objective of profitability can be achieved and the multiplier effects maintained to the maximum. This implies that generation of more deposits is tangent to the survival of Nigerian banks as a whole.

## 5 Conclusions

Commercial 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. However, both government and commercial banks should be mindful of the facts that the environments in which they operate are important factors in the bank performance and behavior. Where the environment is conducive and supportive, performance is enhanced and good lending behaviour guaranteed. But where the environment is unstable and harsh, the bank's performances suffer. Commercial 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. It therefore follows that effort should be made by commercial banks to enforce the most easily realizable policies and good credit management in every situation. Based on the findings in this study, the following suggestions are recommended:

- Commercial banks should develop credit procedures, policies and analytical capabilities and these efforts should be expanded into full credit management including origination, approval, monitoring and problem management tailored to the needs of each bank.
- Commercial banks should strategize on how to attract and retain more deposits so as to further improve on their lending performance.
- There should be closer consultation and cooperation between commercial banks and the regulatory authorities so that the effect of regulatory measure on commercial banks will be taken into account at the stage of policy formulation.
- The cost associated with lending to priority sectors as a national goal, should be borne by the society as a whole through the government budget instead of burdening the commercial banks with such cost. This is necessary because the commercial banks cannot afford to overprice or under price their loans for efficient lending performance.
- Nigerian commercial banks should ensure good planning which encompasses budgeting, reviews and incentives. They should formulate critical, realistic and comprehensive strategic and financial plans. This will help them be better positioned to enjoy the positive effects of macroeconomic factors such as change in gross domestic product and foreign exchange in a volatile environment such as Nigeria economy.
- It is essential for commercial banks to build system and skills in liquidity management, assets and liability management and foreign exchange management.
- 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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### Notes

Note 1. More so, the variables were first run without log but the result was quite unsatisfactory, showing possible multicollinearity, which prompted the author to use log.

Note 2. This test is similar to Philip-Perron (PP) test but it takes into cognizance time series properties in the presence of possible structural changes (Idowu, 2005)

Table 1. Presentation of Data Used in the Paper

Years	LOA (N'm)	Vd(N'm)	Ip(N'm)	Ir (%)	Rr (%)	Lr(%)	Fx (₦/\$)	Gdp (N'm)
1980	6,349.10	10,009.10	344.8	9.5	10.6	47.6	0.5464	50,848.60
1981	8,582.90	10,676.90	2,350.20	10	9.5	38.5	0.61	102,686.80
1982	10,275.30	12,018.90	3,406.90	11.75	10.7	40.5	0.6729	110,029.80
1983	11,093.90	13,938.50	5,730.40	11.5	7.1	54.7	0.7241	119,117.10
1984	11,503.90	15,734.80	9,237.80	13	4.7	65.1	0.7649	125,074.80
1985	12,170.20	17,597.80	10,875.80	11.75	1.8	65	0.8938	144,724.10
1986	15,701.60	18,137.60	5,223.30	12	1.7	36.4	2.0206	143,623.90
1987	17,531.90	23,086.70	8,712.60	19.2	1.4	46.5	4.0179	203,037.10
1988	19,561.20	29,067.10	7,565.20	17.6	2.1	45	4.5367	275,198.20
1989	22,008.00	27,164.90	4,606.40	24.6	2.9	40.3	7.3916	403,762.90
1990	26,000.00	38,777.30	10,067.80	27.7	2.9	44.3	8.0378	497,351.30
1991	31,306.20	53,208.70	7,453.50	20.8	2.9	38.6	9.9095	574,282.10
1992	42,735.80	75,047.70	6,767.00	31.2	4.4	29.1	17.2984	909,754.20
1993	65,665.30	110,453.60	31,192.00	18.32	6	42.2	22.0511	1,132,181.20
1994	66,127.60	142,537.50	40,444.00	21	5.7	48.5	21.8861	1,457,129.70
1995	114,668.90	178,962.10	22,695.00	20.8	5.8	33.1	21.8861	2,991,941.70
1996	169,437.10	214,357.80	49,751.00	20.86	7.5	43.1	21.8861	4,135,813.60
1997	385,551.00	280,028.70	42,861.50	23.32	7.8	40.2	21.8861	4,300,209.00
1998	272,895.50	314,303.50	52,993.80	21.34	8.3	46.8	21.8861	4,101,028.30
1999	322,764.90	476,350.90	193,412.90	27.2	11.7	61	92.6934	4,799,966.00
2000	508,302.20	702,104.50	285,294.40	21.55	9.8	64.1	102.1052	6,850,228.80
2001	796,164.80	928,326.90	192,731.80	21.34	10.8	52.9	111.9433	7,055,331.00
2002	954,628.80	1,100,710.30	435,601.00	29.7	10.6	52.5	120.9702	7,984,385.30
2003	1,210,033.10	1,294,492.80	434,299.00	22.47	10	50.9	129.3565	10,136,364.00
2004	1,519,242.70	1,606,174.70	677,957.40	20.62	8.6	50.5	133.5000	11,673,602.20
2005	1,847,822.60	989,791.20	94,939.60	19.47	9.7	50.2	131.6619	14,894,500.00

Source: Central Bank of Nigeria (CBN) Statistical Bulletin, Volume 13 – 16

Notes: 1. Gross Domestic Product at market price – GDP (1981-2005) is based on the National Bureau of Statistics (NBS) Harmonized Series of the National Accounts of Nigeria.

2. The foreign exchanged used is the Annual Average Official Exchange Rate of the Naira vis-à-vis the United State's Dollar.

Table 2. Augmented Dickey-Fuller (ADF) Unit Root Test

Variable	Level		1st Diff.		2nd diff.		Decision
	intercept no trend	Intercept with Trend	Intercept no trend	Intercept with Trend	Intercept no trend	Intercept with Trend	
log(Vp)	-0.267355	-1.84675	-2.392852	-1.893455	-5.264681	-5.559471	I(2)
log(Ip)	-2.341505	-3.269956	-5.280105	-5.264539			I(1)
log(Ir)	-2.434268	-2.533131	-8.228944	-8.768491			I(1)
log(Rr)	-1.157933	-2.062023	-3.354083	-3.493667	-7.33741	-7.145699	I(2)
log(Lr)	-3.067029	-3.103644	-5.247582	-5.114137			I(1)
log(Fx)	-0.911633	-1.898099	-4.483448	-4.462775			I(1)
log(Gdp)	-0.781933	-1.769304	-5.029188	-4.844292			I(1)
critical values							
1%	-3.72407	-4.374307	-3.73785	-4.39431	-3.75295	-4.41635	
5%	-2.98623	-3.603202	-2.99188	-3.6122	-2.99806	-3.62203	
10%	-2.6326	-3.238054	-2.63554	-3.24308	-2.63875	-3.24859	

Note: A variable is stationary when ADF values exceed the critical values

Table 3. Johansens's Multivariate Cointegration Test

Hypothesized		Trace	0.05		Max-Eigen	0.05	
No. of CE(s)	Eigenvalue	Statistic	Critical Value	Prob.**	Statistic	Critical Value	Prob.**
None *	0.955093	201.9079	125.6154	0	74.47564	46.23142	0
At most 1 *	0.821552	127.4322	95.75366	0.0001	41.36297	40.07757	0.0356
At most 2 *	0.742018	86.06927	69.81889	0.0015	32.51673	33.87687	0.072
At most 3 *	0.644107	53.55254	47.85613	0.0133	24.79499	27.58434	0.1093
At most 4	0.50423	28.75755	29.79707	0.0655	16.83942	21.13162	0.1797
At most 5	0.374951	11.91812	15.49471	0.1609	11.27819	14.2646	0.1408
At most 6	0.026311	0.639932	3.841466	0.4237	0.639932	3.841466	0.4237
At most 7	0.025781	0.626867	3.841466	0.4285	0.626867	3.841466	0.4285
Normalized cointegrating equation		Logloa=1.121Vd+6.333Lr+0.0903Gdp-0.406Rr-0.294Ir-0.090Ip+0.795Fx					

Trace test indicates 4 cointegrating eqn(s) at the 0.05 level

zz \* denotes rejection of the hypothesis at the 0.05 level

\*\*MacKinnon-Haug-Michelis (1999) p values

The VAR is of order 1 and it is computed under the assumption of unrestricted intercept but no trends.

Table 4. Vector Error Correction Estimates

Variables	Dependent Variable:DlogLoa	
	Coefficients	T-statistics
constant	-0.309429	0.08075
EC(-1) term	-0.717480 <sup>c</sup>	-1.8065
dlogLoa(-1)	0.713047 <sup>a</sup>	3.17155
dlogVd(-1)	6.800402 <sup>a</sup>	3.49602
dlogIp(-1)	3.18360 <sup>a</sup>	7.51656
dlogIr(-1)	0.996726	0.59626
dlogRr(-1)	0.116722	0.50509
dlogLr(-1)	0.040523	0.14093
dlogFx(-1)	1.100023 <sup>c</sup>	1.69837
dlogGdp(-1)	2.398325 <sup>c</sup>	2.00192
R-Squared	0.79754	
Adj. R <sup>2</sup>	0.703059	
F-Statistic	2.640823	
SSE	0.266955	
AIC	0.759573	
Schwarz Criteria	0.629602	

Note: a, b and c means significant at 1, 5 and 10% respectively. Tab. 2-tailed t-values are 2.457, 2.042 and 1.697 in that order; while the tabulated F ratio is 2.51 at 5% level. D represents the difference operator. The optimal lag lengths were determined using both Akaike Information Criteria (AIC) and Schwarz Criteria; usually the regression result where both statistics have the smallest (absolute) values is preferred.