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CREDIT MANAGEMENT AND PERFORMANCE OF DEPOSIT MONEY BANKS IN NIGERIA

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Granting of loans and advances remains one of the ways deposit money banks generate income to boost their performance. However, as important as this appears, it has led to incidence of rising non-performing loans in the credit portfolio of deposit money banks. Against this backdrop, this study investigated the effect of credit management on the performance of deposit money banks in Nigeria. The study employed secondary data sourced from Central Bank of Nigeria (CBN) statistical bulletin and annual reports of Nigeria Deposit Insurance Corporation (NDIC) from 1986 to2016. From the data, bank performance (dependent variable) was measured by return on assets (ROA) while credit management (independent variable) was proxied by ratio of non-performing loans to total loans (NPFL), bank deposit (BDEP) and lending rate (LENDR). The study employed autoregressive distributed lag (ARDL) technique to examine the effect of the independent variables on the dependent variable. The findings revealed that ratio of non-performing loans to total loans with coefficient of -0.362733 had negative effect in the short run but produced positive effect on performance of deposit money banks in the long run as indicated by the coefficient of 1.583503. On the other hand, bank deposit exhibited positive influence while lending rate had negative effect on the dependent variable both in the short run and long run. Given the overall significance of the model, it was concluded that credit management had significant effect on performance of deposit money banks in Nigeria. Thus, it was recommended that bank management should endeavor to reduce incidence of non-performing loans by conducting thorough assessment of any credit application prior to approval, especially customer's character and previous credit record. Also, banks should closely monitor customer's investment activities to ensure that granted loans are not diverted to unprofitable ventures which the loans are not initially meant for.

Keywords: Credit management, non-performing loans, bank performance, bank deposit, lending rate.

1. Introduction

The role of financial intermediaries, especially banks, in facilitating rapid economic growth of a nation cannot be overemphasized. The banking industry is essential in the growth process of an economy as it provides funds to all stakeholders of a nation. The development apparatus, such as business community, governments, as well as individuals, are empowered to contribute their respective quota to the growth and development of a country through the intermediation activities of banks. As profit making organization, banks connect lenders and borrowers together through their financial intermediation function by channeling surplus financial resources from corporate and individual customers to the deficit unit for productive utilization (Driga, 2012; Uwuigbe, 2013).

Credit management is the method by which bank collects and control the payments from customers. Myers and Brealey (2003) describe credit management as strategic plan put in place by a firm to ensure that it maintain an optimal level of credit and its effective management. It is an aspect of financial management involving credit analysis, credit rating, credit classification and credit reporting. A proper credit management will lower the capital that is locked with the debtors, and also reduces the possibility of getting into bad debts.

Nwanna and Oguezue (2017) noted that deposit money banks are susceptible to variety of risks among them; interest rate risk, foreign exchange risk, political risk, market risk, liquidity risk, operational risk and credit risk; and what banks do is to manage these challenges especially the credit aspect. In some instances, deposit money banks and other financial institutions have approved decisions that are not vetted; there have been cases of loan defaults and non-performing loans, massive extension of credit and directed lending. In order to minimize the adverse effects of these actions, policies have directed toward bank merging, better banking practices, stringent lending, review of laws to be in accordance with the global standards, well capitalized banks which are expected to be profitable, liquid banks that are able to meet the demands of their depositors, and

maintenance of required cash levels with the central bank which means less cash is available for lending.

Incessant crisis in the banking sector has been attributed to poor credit management. This emanated from the recognition given to finance as importance ingredient of business growth in an economy with the fact that every economy has both surplus and deficit sides. As a result of this, deposit money banks (DMBs) create loans from deposits from customers and these loans are major income generating source for majority of the banks. However this intermediation function of DMBs from surplus unit to deficit unit is associated with enormous risks to both the banks and the deficit units.

Banks are now working so hard to attract the massive number of people who are not banking with them. This has led to an increase in banks' surplus units and deficit units as well. With the aim of increasing revenue and gaining a large portion of the market share, many banks have given out loans and advances which could not be recovered leading to a massive growth in Non-Performing Loans (NPLs) in their accounts (Nwanna & Oguezue, 2017). This has become a worrisome situation for banks and other stakeholders. Hence, the question: what is the effect of credit management on performance of deposit money banks in Nigeria?

This question has attracted the interest of scholars to investigate the relationship between credit management and bank performance. Among these scholars, some reported negative relationship between credit management and bank performance [See Molyneux & Thornton (1992), Angbazo (1997), Miller & Noulas (1997), Hassan & Bashir (2003), Kolapo, Ayeni & Oke (2012), Owoputi, Kayode & Adeyefa (2014)]. While some others submitted that there is positive relationship between the phenomena [See Ahmed, Takeda & Shawn (1998), Kosmidou, Tanna & Pasiouras (2005), Osuka & Amako (2015), Nwanna & Oguezue (2017)]. Evidently, there is no consensus on this discourse in the literature which calls for further investigation. Based on this, this study examined the effect of credit management on performance of deposit money banks in Nigeria. Therefore, it was hypothesized that credit management has no significant effect on performance of deposit money banks in Nigeria.

2. Literature Review

Conceptual Review

Deposit money banks do not exist only for the acceptance of deposit but also for the extension of loans and advances to different categories of customers. As a matter of fact granting of credits is the main earning activities of deposit money banks. In other words, giving of loans and advances (lending activities) to customers is one of the major activities of banks (Adeusi & Dada, 2017). In the process of discharging this duty, there is the possibility that borrowers may not repay the fund as at when due. Where this happens it is usually referred to as default or credit risk. Therefore, deposit money banks need to properly manage any credit application by borrowers so as to avoid or reduce credit risk as much as possible.

Tetteh (2012) noted that deposit money banks cannot shy away from granting of credit to borrowers because is one of the ways to strengthen their financial position. Consequently, Nzotta (2004) noted that credit management highly impacted on the success or failure of deposit money banks as well as the financial soundness of other financial institutions.

Myers and Brealey (2003) opined that credit management is the methods and strategies employed by corporations to attain and ensure effective management of optimal credit level. They submitted that credit management involves activities such as credit analysis, credit rating, credit classification and credit reporting.

Credit management, according to Nelson (2002), is an integral part of management of any corporation involved in credit transactions because it is impossible to have null credit or default risk. Credit management, therefore, simply refers to the ways a firm manages its credit sales.

To Pasha and Mintesinot (2017), credit management involves the entire process of lending activities which begin with inquiring about potential borrowers and to the stage of complete recovery of the amount of loan granted. Therefore, credit management can be viewed to entail activities which have to do with accepting credit application, credit appraisal, credit approval, loan monitoring and ultimately recovery of doubtful loans (Sahlemichael, 2009).

In a general sense, performance refers to how a firm faired over a period of time. It could mean the outcome of a corporation's activities in actualizing its objectives within a given period. Therefore, bank performance can be explained to refer to the output of a bank's operation at the end of a given period, usually a financial year. Abaenewe, Ogbulu and Ndugbu (2013) noted that the major document that reveals this performance is mainly the published financial statement of the bank.

Evidence from literature shows that profitability is the commonest gauge used by scholars to measure the performance of deposit money banks (Adeusi & Dada, 2017). Devinaga (2010) in line with this thought pointed out that this fact is based on the understanding that shareholders and/or investors are interested in the magnitude of profit made by banks because it reveals how effective the bank management have been able to utilize shareholders' investments.

Nwanna and Oguezue (2017) posited that bank profitability is also a way to assess managers' attitude to risk when it comes to investing shareholders' funds in profitable ventures. They are of the view that banks that make high profits will not be timid to dabble into

risky investments with the intention to further generate greater return on investment so as to induce better performance.

Therefore, profitability is a means to assess the capability of banks to bear risk and it further indicates the effectiveness and meritorious performance of bank management (Li & Zou, 2014). Consequently, Aktan and Bulut (2008) submitted that the performance of deposit money banks, measured by net income from operation, is their ability to attract greater resources emanating from their routine operation over a financial period.

Literature revealed that some of the indicators of deposit money banks' performance include return on assets (ROA), return on investments (ROE), net income margin (NIM), banks' total assets and total bank deposits. For the purpose of this study, return on assets (ROA) was used to measure the performance of deposit money banks.

Theoretical Review

The following theories considered relevant to this study were reviewed thus:

Theory of Information Asymmetry

Information asymmetry explains the importance of information availability in credit management. It refers to a situation where lenders and borrowers (business entrepreneur) of fund should have access to relevant information pertaining to the potential risks and returns associated with a prospective business investment. It describes a situation where there is imbalance access to basic information between parties involved in a transaction.

Edwards and Turnbull (1994) posited that information asymmetry occur in the debt market where a borrower has better information than the lender about the potential risks and returns of a particular investment for which the credit/loan was meant for.

Information asymmetry usually gives rise to two types of risks as affecting the bank. This includes risks of moral hazard and adverse selection. Moral hazard occurs where banks find it difficult to monitor the activities and behavior of borrower. This problem do persist in credit management because banks find it unreasonable and unprofitable to commit scarce resources to the assessment and monitoring of relatively small amount of loan coupled with the fact that the data needed to assess credit application may not be freely accessible to banks (Binks & Ennew, 1992). On the other hand, adverse selection occurs where banks made error in lending decisions as a result of imperfect information about the risk and returns associated with the particular business for which the fund was meant for (Olabamiji & Michael, 2018).

Theory of Anticipated Income

The theory of anticipated income posits that the management of banks' lending activities to ensure liquidity is dependent upon the structure of loans commitment made by a bank to borrowers. This theory explains that the liquidity of a bank can be planned based on the anticipated income expected from the borrower's future earnings. Nzotta (1997) assessing this theory said that the main emphasis of the theory is on the earning capacity and credit viability of the borrowers. This according to him is one of the ways to guarantee adequate liquidity of the bank.

According to Okoh, Nkechukwu and Ezu (2016), considering this theory, appropriate credit management is a tool to manage the liquidity position of deposit money banks. According them this can be achieved by making sure that approved and granted loans are appropriately monitored and directed towards the purpose it was meant as well as ensuring that repayment is made as at when due.

Shiftability Theory

This theory was propounded and propagated during the 1920's and 1930's as a result of increase in holding marketable securities by banks. To ensure the liquidity of banks, this theory advocates that banks' marketable assets can be shifted or sold to other buyers. A well-developed secondary market is a pre-condition for successful realization of this theory.

Kreps (1972) posits that this theory was considered by bankers as an advancement of the commercial loan doctrine. According to him, for this theory to be really practicable, there must be a lender of last resort, willing and able to lend to banks during the period of liquidity crunch.

These theories are relevant to this study. For example, the theory of asymmetric information postulates that borrowers may have better information than the lender regarding the potential risks and returns of the venture for which the loan is meant for. A situation where this is case then the lender may be put at disadvantage, hence the need for adequate information to guide the lender in deciding the profitable credit portfolio.

Also, the anticipated income theory will guide the lender to determine if the loan will be able to liquidate itself. The shiftability theory also guide deposit money banks on the proportion of its deposit liability to be invested in marketable securities and the percentage to channel towards liquid loan portfolio. However, this study was anchored on the anticipated income theory.

Empirical Review

Olabamiji and Michael (2018) examined the influence of credit management practices on financial performance of deposit money banks in Nigeria with specific focus on First bank Plc. Using purposive sampling method, data were collected from thirty respondents. The study employed both descriptive and inferential statistics to analyze the data. The results showed that credit management practices have significant positive influence on the financial performance of First bank Plc. The outcome of the study pointed to the fact that client appraisal, credit risk control and collection policy are the main predictors of financial performance of First bank Plc. Thereby, it was suggested that management of others

banks should emulate First bank by improving their client appraisal, credit risk control as well as adopting a more strict policy to improve their financial performance.

Nwude and Okeke (2018) investigated that impact of credit risk management on the performance of deposit money banks in Nigeria by considering five banks with the highest asset base (the banks according to the study include Diamond Bank, First Bank, Guaranty Trust Bank, United Bank for Africa and Zenith Bank) from 2000 to 2014. The study adopted ordinary least square analytical technique to test three hypotheses. It was revealed that credit risk management had a significant positive impact on total loans and advances, return on asset and return on equity of deposit money banks in Nigeria. Consequently, it was recommended that bank managers should intensify efforts in controlling the incidence of non-performing loans by carrying out a critical examination of borrowers' repayment ability from the point of loan application.

Investigating the impact of credit risk management on deposit money banks performance in Nigeria, Adeusi and Dada (2017) formulated a panel model for ten selected banks from 2001 to 2015. The study used profit after tax (PAT) as proxy of performance while Non-performing loan ratio (NPLR), Loan loss provision ratio (LLPR), Loan to total assets ratio (LTAR), Interest rate (INTR) and Inflation rate (INFR) were used as indicators of credit risk management. Fixed effect, Random effect and Hausman test were conducted to analyze the variables. It was shown that non-performing loan ratio, loan loss provision and interest rate had negative relationship with profit after tax while loan to total assets and inflation rate produced a positive relationship with deposit money bank performance. Consequently, it was pointed out that despite that the several policies and reforms put forward by the government to ensure better performance of banks, incidence of credit risk emanating from laxity in management still persist among the deposit money banks as a result of high default in repayment of loans and advances. Therefore, the study submitted that deposit money banks should concentrate on their credit risk management strategies so as to reduce the persistent occurrence of non-performing loans.

Nwanna and Oguezue (2017) analyzed that nexus between credit management and profitability of deposit money banks in Nigeria between the periods 2006 to 2015. Using secondary data sourced from the Central Bank of Nigeria statistical bulletin, the study adopted ordinary least square econometric technique. The results showed that loans and advances and loan loss provision had insignificant positive effect on profitability, while non-performing loan has insignificant negative influence on profitability of deposit money banks. It was emphasized that sound credit management increases the profitability and strengthen the financial standing of deposit money banks in Nigeria. Based on the findings, the study recommended that sound credit management policies and practices should be put in place. Also, provision should be made for loan losses to provide absorber for tolerable level of credit risk exposure.

Focusing on the Pakistan economy, Hamza (2017) investigated the impact of credit risk management on the performance of commercial banks. The study employed both return on assets (ROA) and return on equity to measure the performance of deposit money banks while Capital adequacy (CAR), Loan loss provision ratio (LLPR), Liquidity ratio (LR), Loan and advances (LAR) and Non-performing loan ratio (NPLR) were used as proxies for credit risk management. Adopting the pooled regression estimation technique, the findings showed that loan loss provision ratio, liquidity ratio and non-performing loan ratio produced negative impact whereas capital adequacy ratio and loan and advances had positive impact on return on assets. On the other hand, capital adequacy, loan and advances and loan loss provision ratio had significant effect on return on equity. Therefore, it was concluded that credit risk management had inverse relationship with bank performance. Consequently, banks should develop measures to check the rising non-performing loans in their credit portfolio.

Akinde and Kayode (2016) investigated the determinants of bank profitability in Nigeria, from 1998 to 2014. In their empirical analysis, bank profitability was proxy by Return on Assets, Return on Equity and Net Interest Margin. The results of their random effect model suggest the existence of positive and significant effect of capital adequacy, bank size, productivity growth and deposits on profitability. Credit risk and liquidity ratio have a negative and significant effect on bank profits.

Etale, Ayunku and Etale (2016) examined the relationship that exists between non-performing loans and bank performance in Nigeria for the period 1994 to 2014. The study collected secondary data from CBN statistical bulletin, Nigeria Deposit Insurance Corporation (NDIC) and the annual reports of listed banks. Descriptive statistics and multiple regression techniques were employed to analyze the data. The outcome revealed that bad and doubtful loans had significant negative effect on return on capital employed, while sub-standard loans exhibited insignificant negative influence on bank performance. It was concluded that high level of non-performing loans reduces the performance of banks in the long run in Nigeria. Therefore, it was recommended that credit reporting agencies and supervising authorities should be strengthen so as to reduce the menace of non-performing loans in the banking sector in Nigeria.

In an attempt to study the relationship between credit risk management and performance of deposit money banks in Nigeria, Ogbulu and Eze (2016) adopted error correction model (ECM) and Granger causality approach to analyze the effect of some credit

risk indicators on the performance of deposit money banks. Secondary data used for the study was collected from CBN statistical bulletin and the annual reports and accounts of NDIC covering the period 1989 to 2013. While the results showed that credit risk management had significant effect on the performance of deposit money banks, no evidence of significant causal relationship between the dependent and independent variables was reported. Giving the findings of the study, it was recommended that deposit money banks should focus more attention on credit risk management strategies employed so as to enhance their better performance.

Uwalomwa, Uwuigbe and Oyewo (2015) assessed the effects of credit management on listed deposit money banks' performance in Nigeria from 2007 to 2011. Analyzing the audited corporate annual financial statement of ten selected banks, the study adopted descriptive statistics and econometric method of analysis by formulating a panel linear regression. The findings revealed that ratio of non-performing loans and bad debt has significant negative effect on the performance of banks whereas the relationship between secured and unsecured loans and banks' performance was not significant. The study submitted that banks management should develop a sound lending framework, adequate credit administration procedure to ensure effective and efficient lending culture.

Taiwo and Abayomi (2013) assessed the effect of credit risk management on the profitability of some selected deposit money banks in Nigeria. The study employed panel least square estimation technique. The estimation outcome showed that credit risk management significantly impacted on the profitability of deposit money banks in Nigeria.

Following the adoption of electronic banking system, Abaenewe, Ogbulu and Ndugbu (2013) investigated the profitability performance of deposit money banks in Nigeria. The study, using judgmental sampling method, utilized four Nigerian banks which have consistently retain their brand names and remained listed on the Nigerian Stock Exchange since 1997. Using returns on equity (ROE) and returns on assets (ROA) as performance indicators, the study reported that the adoption of electronic banking has significant positive effect on the return on equity (ROE) of deposit money banks in Nigeria. Contrarily, it also showed that electronic banking do not have significant influence on return on assets of deposit money banks in Nigeria.

Kolapo, Ayeni and Oke (2012) empirically examined the quantitative effect of credit risk on the performance of commercial banks in Nigeria from 2000 to 2010. Adopting the traditional theory of profit, the study measured performance by return on assets (ROA) and this was expressed as a function of ratio of non-performing loans to loan and advances, ratio of total loan and advances to total deposit and the ratio of loan loss provision to classified loans. Employing the panel model analysis, it was shown that non-performing loan and total loan loss provision reduced the profitability of commercial banks whereas total loan and advances increase profitability of the banks. It was concluded that the effect of credit risk was similar across banks in Nigeria. Thus, commercial banks in Nigeria were advised to enhance their capacity in credit analysis and loan administration.

Saba, Kouser and Azeem (2012) employed ordinary least square (OLS) regression technique to investigate the determinants of non-performing loans in the United States of America (USA) banking sector over the period 1985-2010. The result showed that real total loans produced significant positive effect on non-performing loans while interest rate and gross domestic product per capital had significant negative relationship with non-performing loans.

Examining the issue of credit risk efficiency, Chen and Pan (2012) considered thirty-four (34) Taiwanese commercial banks over the time period 2005 to 2008. The credit risk measures used in the study include credit risk technical efficiency, credit risk allocative efficiency, and credit risk cost efficiency. Using the Data Envelopment Analysis (DEA), the findings revealed that over the assessment period only one bank exhibits efficiency in all the efficiency parameters employed in the study.

3. Methodology

This study employed the correlation research design. This research design was chosen because it helps to reveal the relationship between the explained and explanatory variables. The study employed time series secondary data which covered 1986 to 2016. This period was chosen to take cognizance of the introduction of Structural Adjustment Programme (SAP) in Nigeria which ushers in different polices which have one way or the other reshape the Nigeria banking sector. The data were collected from the Central Bank of Nigeria (CBN) statistical bulletin, and Nigeria Deposit Insurance Corporation (NDIC) annual reports.

The study adopted Autoregressive Distributed Lag (ARDL) estimation technique to estimate the effect of the independent variables on the dependent variable. ARDL is a least squares regression method containing lags of the dependent and independent variables. This technique was chosen consequent on the fact that it does not require all the variables to be integrated of the same order. In addition, it is more robust and performs better on small sample sizes than other co-integration approach because it automatically lags the variables when necessary, rather than for the researcher to be testing for optimum lag.

Model Specification

This study was anchored on information asymmetry theory. To capture the effect of credit management on performance of deposit money banks, a linear multiple regression model was formulated to estimate the effect of the independent

variables- ratio of non-performing loans to total loans, bank deposit, and lending rate- on the dependent variable (Return on asset).

Adapting the model provided in the work of Uwalomwa, Uwuigbe and Oyewo (2015), the association between credit management and bank performance in this study is specified below:

$$ROA = F(NPFL, BDEP, LENDR) \ldots\ldots (1)$$

Explicitly, equation (1) can be stated as:

$$ROA_t = \prod_0 + \Omega_1 NPFL_t + \Omega_2 BDEP_t + \Omega 3 LENDR_t + \mu_t \quad (2)$$

Where:

ROA = Return on Asset

NPFL = Ratio of non-performing loans to total loans of deposit money banks

BDEP = Bank Deposit

LENDR = Lending rate

μ_t = Stochastic error term

$\prod_0$, Ω_1- Ω_3 are parameters to be estimated.

***Apriori* expectation**

Theoretically, NPFL is expected to have negative relationship with performance of deposit money banks. In other words, Ω_1 is expected to be less than zero ($\Omega_1<0$). On the other hand, BDEP and LENDR are expected to have positive relationship with performance of deposit money banks. This means Ω_2 and Ω_3 should be greater than zero ($\Omega_2>0$ and $\Omega_3>0$).

4. Data Analysis and Interpretation of Results

This section presents the outcome of data analysis and the interpretation of results.

Descriptive statistics

The descriptive statistics of the variables are presented in table 1 thus:

Table 1

Result of descriptive statistics of the variables

	LROA	LNPLR	LBDEP	LLENDR
Mean	0.749250	2.878382	4.395301	3.114785
Median	0.845868	3.017983	4.790820	3.070376
Maximum	1.726332	3.817712	8.326759	3.586016
Minimum	-0.733969	1.033184	0.095310	2.484907
Std. Dev.	0.586217	0.840982	2.472158	0.212448
Skewness	-0.720561	-0.878130	-0.193795	-0.363759
Kurtosis	3.089719	2.665992	2.370126	4.384902
Jarque-Bera	2.519236	3.861843	0.660918	2.957076
Probability	0.283762	0.145015	0.718594	0.227971
Sum	21.72824	83.47308	127.4637	90.32878
Sum Sq. Dev.	9.622225	19.80301	171.1238	1.263759
Observations	29	29	29	29

Source: Researchers' computation.

The result revealed that all the variables have positive averages. The mean value of the variables include: ROA 0.749250, NPLR 2.878382, BDEP 4.395301 and LENDR 3.114785. The value of the standard deviation revealed that the variables exhibited low variation from their mean. This implies that the values of the variables would be stable relative to their mean. The asymmetric distribution of the series round its mean was measured by the Skewness of the series. The result revealed that all the variables have long left tail given their negative values. The peakedness or flatness of the variables was also measured by the kurtosis of the series. The result showed that ROA and LENDR are leptokurtic while NPLR and BDEP are platykurtic. The Jarque-bera result showed that all the variables are normally distributed. This is as shown by their probability values as well as their respective skewness and kurtosis.

Multicollinearity Test

Multicollinearity was tested in this study by examining the pairwise correlation among the explanatory variables. The result is presented below:

Table 2

Result of pairwise correlation

	LNPLR	LBDEP	LLENDR
LNPL_TL	1.000000		
LBDEP	-0.740398	1.000000	
LLENDR	0.079437	0.311844	1.000000

Source: Researchers' computation.

The result revealed that the explanatory variables are not perfectly correlated. This is an indication that there is no problem of multicollinearity among the explanatory variables. Therefore, the each explanatory variable will be able to explain its effect on the dependent variable individually.

Serial Correlation Test

To ensure that there is no problem of serial or auto correlation among the variables, the Breusch-Godfrey serial correlation test was conducted. The result is as presented in table 3 below:

Table 3

Result of Breusch-Godfrey LM test

F-statistic	0.606288	Prob. F(2,5)	0.5811
Obs*R-squared	4.489160	Prob. Chi-Square(2)	0.1060

Source: Researchers' computation.

The result revealed that the variables are not serially correlated. This is as indicated by the F-statistics (0.606288) and P-value (0.5811).

Stationarity Test

To avoid spurious regression result, the stationarity test was conducted to check out for unit root among the variables. The stationarity test was carried out by adopting the Augmented Dickey-Fuller unit root test. The result is presented thus (*Table 4*).

The result revealed that while other variables have unit root problem only LENDR was free from unit root. As result of this, the variables were differenced. Other variables became stationary after their first difference. Therefore, while LENDR was stationary at level other variables: ROA, NPLR and BDEP, were stationary at first difference. That is LENDR was integrated of order zero I(0) while ROA, NPLR and BDEP are integrated of order one I(1).

Cointegration Test

Having established the stationarity of the variables, cointegration test was carried out to check for long equilibrium relationship among the variables. The cointegration test was conducted in this study by adopting the ARDL bound test. The result is presented as below (*Table 6*).

Table 4

Result of ADF unit root test

Variables	ADF Statistics		Critical values		Order of integration	Remark
	At level	1st diff	5%	10%		
LROA	-2.481420	-4.824235	-3.004861	-2.642242	I(1)	S
LNPLR	-1.674063	-5.231481	-2.967767	-2.622989	I(1)	S
LBDEP	-0.999303	-4.055517	-2.967767	-2.622989	I(1)	S
LLENDR	-4.625187	-	-2.963972	-2.621007	I(0)	S

Source: Researchers' computation.

Table 5

Result of Bound Cointegration Test

	Value	K
F-statistic	4.847015	3
Critical Value Bounds		
Significance	I0	I1
10%	2.72	3.77
5%	3.23	4.35
2.5%	3.69	4.89
1%	4.29	5.61

Source: Researchers' computation.

The condition for cointegration of the variables is that the F-statistics must be greater than the critical value bounds. Therefore, the null hypothesis of no long run relationships was tested against the alternative hypothesis of existence of long run relationships among the variables. Given the F-statistics 4.847015 in table 5 above, the result showed that the F-stat is greater than the critical bounds at 5 percent significance level at both the lower bound (3.23) and upper bound (4.35). This implies that there is long run equilibrium relationship among the variables and as a result the variables will not wander apart in the long run.

Interpretation and Implication of Result

The short run and long run result of the autoregressive distributed lag regression is presented in table six. The result revealed that ratio of non-performing loans to total loans (NPLR) had negative

relationship with return on asset in the short run. This is in accordance with the theoretical expectation. The coefficient -0.362733 and p-value 0.2900 indicates that ratio of non-performing loans to total loans had insignificant negative effect on performance of deposit money banks in Nigeria. This means that one percentage change in ratio of non-performing loans to total loans will cause about 36 percent decline in the performance of deposit money banks. The implication of this is that poor credit management by deposit money banks will have negative effect on their performance. However, in the long run, ratio of non-performing loans to total loans exhibits positive relationship with return on assets. This is as indicated by the coefficient 1.583503 and p-value 0.0969. This implies that ratio of non-performing loan to total loans produced insignificant positive effect on bank performance in the long run. This result negates the findings of many studies, such as Adeusi and Dada (2017), Nwanna and Oguezue (2017) and Hamza (2017), which reported negative effect of non-performing loans on bank performance. This outcome can be explained based on the fact that non-performing loans do not mean they are not irrecoverable. Given this fact, loans that are categorized as non-performing in the short run may become performing in the long run due to close monitoring and proper management of such loans and as a result when banks eventually recover them they boost the performance of the banks.

It was discovered from the result that bank deposit (BDEP) had positive relationship with return on asset both in the short run and long run. This is in accordance with the theoretical expectation that bank deposit should induce positive performance of deposit money banks through credit advancement. With coefficient 0.170034 and p-value 0.5251 in the short run and 0.642988 and 0.1297 in the long run, it indicates that bank deposit had insignificant positive influence on performance of deposit banks both in the short run and long run. This implies a percentage change in bank deposit will lead to positive effect on performance of deposit money banks in Nigeria both in the short run and long run.

Contrary to the apriori expectation, lending rate (LENDR) exhibited negative relationship with performance of deposit money banks both in short run and long run. In the short run, the coefficient -0.674264 indicates that a percentage change in lending rate will lead to about 67 percent decline in the performance of deposit money banks. Likewise in the long run, a coefficient -5.149852 implies that a percentage change in lending rate will cause about 514 percent decrease in bank performance. The negative effect of lending rate on bank performance is a pointer to the fact that lending rate is high and unstable in the Nigeria banking industries. This further explains the reason for the rising incidence of non-performing loans because of the burden it places on borrowers in repaying borrowed funds.

Table 6

ARDL short run and long run result

Short Run Coefficients				
Variable	Coefficient	Std. Error	t-Statistic	Prob.*
LNPLR	-0.362733	0.316877	-1.144714	0.2900
LBDEP	0.170034	0.254262	0.668734	0.5251
LLENDR	-0.674264	0.620714	-1.086272	0.3133
C	4.799996	4.329591	1.108649	0.3042
Long Run Coefficients				
CointEq(-1)	-0.531328	0.160221	-3.316214	0.0128
LNPLR	1.583503	0.826533	1.915837	0.0969
LBDEP	0.642988	0.374517	1.716847	0.1297
LLENDR	-5.149852	3.025799	-1.701981	0.1325
C	9.033962	7.700594	1.173151	0.2791
R-squared	0.918719			
Adjusted R-squared	0.744546			
F-statistic	5.274749			
Prob(F-statistic)	0.016767			

Source: Researchers' computation.

Furthermore, the error correction mechanism of the result was appropriately signed. The error correction statistic -0.531328 indicates that the short run disequilibrium will be corrected at a speed of 53 percent. In other words, any short run disequilibrium among the variables would be adjusted at a speed of 53 percent in the long run.

Statistically, the goodness of fit of the regression line is good. This is as indicated by the coefficient of determination (R^2) which is 0.918719. This Implies that 91.87 percent of the total variation in performance of deposit money banks in Nigeria within the period of study was explained by the explanatory variables (ratio of non-performing loans to total loans, lending rate and bank deposit) while the remaining 8.13 percent was explained by other variables which are not included in this study but are accounted for by the stochastic error term.

The overall statistical significance of the model was tested by the F-statistics. The F-statistics 5.274749

is statistically significant at 5 percent level of significance given the p-value 0.016767 which is lesser than 0.05. This implies that the model is statistically significant in explaining the effect of credit management on performance of deposit money banks in Nigeria. That is, ratio of non-performing loans to total loans (NPLR), bank deposit (BDEP) and lending rate (LENDR) produced a combined significance effect on performance of deposit money banks in Nigeria.

5. Summary, Conclusion and Recommendation

This study examined the effect of credit management on the performance of deposit money banks in Nigeria from 1986 to 2017. Secondary data were sourced from the Central Bank of Nigeria (CBN) statistical bulletin and Nigeria Deposit Insurance Corporation (NDIC). From the data, performance was proxy by return on assets being the dependent variable while ratio of non-performing loans to total loans, bank deposit and lending rate was used as proxies for credit management, being the independent variable. Autoregressive Distributed Lag (ARDL) technique was employed to assess the relationship between the dependent and independent variables.

Findings revealed that ratio of non-performing loans to total loans had negative effect in the short run but produced positive effect on performance of deposit money banks in the long run. Bank deposit exhibited positive influence while lending rate had negative effect on the dependent variable both in the short run and long run. Given the overall significance of the model, it was concluded that credit management had significant effect on performance of deposit money banks in Nigeria.

Thus, it was recommended that bank management should endeavor to reduce incidence of non-performing loans by conducting thorough assessment of any credit application prior to approval, especially customer's character and previous credit record. Also, banks should closely monitor customer's investment activities to ensure that granted loans are not diverted to unprofitable ventures which the loans are not initially meant for. In addition, credit should be given at affordable lending rate to reduce the burden of repayment on the customers.

КРЕДИТНЕ УПРАВЛІННЯ ТА ДІЯЛЬНІСТЬ ДЕПОЗИТНИХ ГРОШОВИХ БАНКІВ У НІГЕРІЇ

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Надання позик залишається одним із способів, за допомогою яких депозитні гроші банки приносять дохід і підвищують свою ефективність. Однак, як це не важливо, це призвело до збільшення числа непрацюючих кредитів в кредитному портфелі депозитних банків. На цьому тлі в даному дослідженні вивчався вплив кредитного менеджменту на показники депозитних грошей банків в Нігерії. У дослідженні використовувалися вторинні дані, отримані з статистичного бюлетеня Центрального банку Нігерії (CBN) і річних звітів Корпорації страхування вкладів Нігерії (NDIC) за 1986-2016 роки. Виходячи з даних, ефективність банку (залежна змінна) вимірювалася по прибутковості активів (ROA), а управління кредитами (незалежна змінна) визначалося співвідношенням непрацюючих кредитів до загальної суми кредитів (NPFL), банківського депозиту (BDEP) і ставки кредитування. (LENDR). В дослідженні використовувався метод авторегресійного розподіленого лага (ARDL) для вивчення впливу незалежних змінних на залежну змінну. Результати показали, що ставлення непрацюючих позик до загальної суми позик з коефіцієнтом -0,362733 зробило негативний вплив в короткостроковій перспективі, але зробило позитивний вплив на результати діяльності депозитних грошових банків в довгостроковій перспективі, про що свідчить коефіцієнт 1,583503. З іншого боку, банківський депозит зробило позитивний вплив, в той час як ставка кредитування справила негативний вплив на залежну змінну як в короткостроковій, так і в довгостроковій перспективі. З огляду на загальну значущість моделі, був зроблений висновок про те, що управління кредитами справила значний вплив на показники депозитних банків в Нігерії. Таким чином, було рекомендовано, щоб керівництво банку прагнуло знизити кількість непрацюючих кредитів шляхом проведення ретельної оцінки будь-якої кредитної заявки до її схвалення, особливо характеру клієнта і попередньої кредитної історії. Крім того, банки повинні уважно стежити за інвестиційною діяльністю клієнта, щоб гарантувати, що надані позики не будуть перенаправлені на збиткові підприємства, для яких позики спочатку не призначені.

Ключові слова: кредитний менеджмент, непрацюючі кредити, банківські показники, банківський депозит, ставка кредитування.

КРЕДИТНОЕ УПРАВЛЕНИЕ И ДЕЯТЕЛЬНОСТЬ ДЕПОЗИТНЫХ ДЕНЕЖНЫХ БАНКОВ В НИГЕРИИ

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Предоставление займов остается одним из способов, с помощью которых депозитные деньги банки приносят доход и повышают свою эффективность. Однако, как это ни важно, это привело к увеличению числа неработающих кредитов в кредитном портфеле депозитных банков. На этом фоне в данном исследовании изучалось влияние кредитного менеджмента на показатели депозитных денег банков в Нигерии. В исследовании использовались вторичные данные, полученные из статистического бюллетеня Центрального банка Нигерии (CBN) и годовых отчетов Корпорации страхования вкладов Нигерии (NDIC) за 1986–2016 годы. Исходя из данных, эффективность банка (зависимая переменная) измерялась по доходности активов (ROA), а управление кредитами (независимая переменная) определялось соотношением неработающих кредитов к

общей сумме кредитов (NPFL), банковского депозита (BDEP) и ставки кредитования. (LENDR). В исследовании использовался метод авторегрессионного распределенного лага (ARDL) для изучения влияния независимых переменных на зависимую переменную. Результаты показали, что отношение неработающих займов к общей сумме займов с коэффициентом -0,362733 оказало отрицательное влияние в краткосрочной перспективе, но оказало положительное влияние на результаты деятельности депозитных денежных банков в долгосрочной перспективе, о чем свидетельствует коэффициент 1,583503. С другой стороны, банковский депозит оказал положительное влияние, в то время как ставка кредитования оказала отрицательное влияние на зависимую переменную как в краткосрочной, так и в долгосрочной перспективе. Учитывая общую значимость модели, был сделан вывод о том, что управление кредитами оказало существенное влияние на показатели депозитных банков в Нигерии. Таким образом, было рекомендовано, чтобы руководство банка стремилось снизить количество неработающих кредитов путем проведения тщательной оценки любой кредитной заявки до ее одобрения, особенно характера клиента и предыдущей кредитной истории. Кроме того, банки должны внимательно следить за инвестиционной деятельностью клиента, чтобы гарантировать, что предоставленные займы не будут перенаправлены на убыточные предприятия, для которых займы изначально не предназначены.

Ключевые слова: кредитный менеджмент, неработающие кредиты, банковские показатели, банковский депозит, ставка кредитования.

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