CREDIT RISK MANAGEMENT AND DEPOSIT MONEY BANK PERFORMANCE IN NIGERIA

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Abstract

This study sought to investigate the effect of credit risk management on the profitability of quoted deposit money bank in the Nigerian capital market. The panel regression system was applied in the estimation of the panel data from 2006 to 2018 covering 12 banks in Nigeria. The return on the asset was used as a proxy for bank performance (dependent variable) and the bank non-performing loan ratio, bank loan to deposit ratio as well as bank leverage were used as the independent variables. The result of the empirical tests showed a significant relationship between credit management and bank performance. The bank non-performing loan ratio had an indirect (negative) relationship with the performance of the banks. On the other hand, a bank loan to deposit ratio had a direct impact on the performance of banks in Nigeria. However, bank leverage did not have any impact on the performance of the banks in Nigeria. It is, therefore, recommended that bank credit should be channelled to self-liquidating projects as well as monitored and managed efficiently to boost bank performance.

Keyword: **Credit Risk, Profitability, Non-performing Loan and Deposit Money Banks**

1. Introduction

The advancement of any economy depends on the continuous stability and growth of the country's existing financial system. The financial system in Nigeria is basically made up of the money market, capital market and the emerging mortgage market. The money market serves as the lubricant of both the capital market and the mortgage market in Nigeria. The capital market, on the other hand, serves as an important barometer and engine of sustained growth and development of any economy. The most advanced economies in the world have the most developed capital market as well as the money market.

This study is focused on the money creating ability of the deposit money banks (DMBs) as well as the risk involved in their financial intermediaries' functions. Deposit money bank accepts deposit from the sufficient units in the economy and in turn, provide credit facilities to the deficient units in the economy to meet their short to medium-term obligations.

The management of credit facilities of the deposit money bank comes with its attendant risk. The inability of the deficient units to repay it loan as at when due could result to default risk, which is classified initially as doubtful debt, and subsequently as bad debt when the customer cannot pay after the bank has used all legal means to claim it loan back. This could mitigate the profitability of the deposit money banks as well as their continued existence because credit creation serves as the major sources of income.

Over time, the continuous increase of non-performing loan in the Nigerian deposit money banks has led to bank crises in the early and late '80s and beyond. This still poses a big challenge not only to bank management but to the regulators, shareholders and other stakeholders. Since non-performing loan cannot be completely avoided in the banking sector, it can be curtailed within a manageable band through the effective management of credit in the banking system.

2 Review of Literature

Deposit money banks are wide-open to risk probably due to the nature of their business. Yesuf (2003) posits that deposit money banks are opened to various forms of risk such as default risk, credit risk or counterparty risk, interest rate risk, operational risk, foreign exchange risk, liquidity risk, political risk and market risk. Rehman, Muhammad, and Sarwar (2019) assert that previous studies established the causes of the credit crisis as well as proffer possible solution to assist financial institutions worldwide to evade disaster in the future.

Credit risks are losses occasioned by the failure of a bank customer to effect the payment of interest and principal amount owed on time and in full. Conford (2000) asserts that credit risk is the probability that loan contracted to a customer could deviate from that which was expected in terms of fulfilling payment obligations. Basel committee on banking supervision-BCBS (1999) sees credit risk as a future threat to the financial strength of the financial sector. The deposit money banks are mandated to maintain certain minimum capital requirement as well as maintain proper leverage ratios to avoid or mitigate potential credit crisis.

BCBS (1999) sees credit risk as the likelihood that counterparty (a bank borrower) will fail to meet its obligations in accordance with agreed terms. And that bank is gradually exposed to counterparty risk in several financial instruments such as loans, settlement of transaction, financial futures, options, swaps, interbank transactions and foreign exchange transactions.

Credit risk is essentially caused by many factors which are within and outside the control of the bank such as poor supervision from the Nigeria deposit insurance system and central banks, unnecessary government intervention, poor credit assessment and lending practices, faulty credit policies, unstable interest rates, non-adherence to basic lending principle and so on.

All these can be moderated through efficient credit risk management. Kou, Ergu, Lin, and Chen, (2016) posit that the banking sector is highly competitive and the main survival strategy is for banks to effectively manage credit risk as well as engage in the diversification of financial services and product to attract and keep potential customers and improve performance.

Credit risk management becomes imperative due to the volatile nature of the banking industry. Coyle (2000) asserts that credit risk management focuses on identifying, measuring, monitoring and effective control of risk prompted by the probability of loan repayment failure. Bikker and Metzmakers (2005) assert that credit risk management involves the basic processes of

identifying, assessing and analyzing, audit monitoring as well as the control or treatment of risk in the deposit money banks.

Liquidation, bankruptcy and macroeconomic problems could lead to credit risk in the financial system. The accumulation of these events could lead to bank failure or bank crisis. Sanusi (2002) posits that bank distresses in the Nigerian banking system are due to poor bank management, insider abuses, political considerations, adverse ownership influence as well as protracted court process especially as concerning the recovery of debts.

Past records have shown that the main cause of bank failure in the banking system is the concentration and accumulation of credit risk in banks asset portfolios (BCBS, 2006). Brownbridge (1998) states that the incessant increase of non-performing loans drastically shrink the profitability of banks. And that insider lending and high-interest lending rates are majorly responsible for the growing numbers of the non-performing loan in the banks.

Robert and Gary (1994) observed that the accumulation of non-performing loans over time and macroeconomic problems are the major reasons for bank failure and not necessarily due to poor operating efficiency. Overtime in the Nigerian financial system, studies have shown that the bank failure or crisis experienced in the past are majorly due to non- performing loan (Owojori, Akintoye & Adidu, 2011). Basel Committee (1999) assert that the upsurge in credit risk could increase the marginal cost of equity and debt, and this, in turn, could raise the bank's cost of funds since loans are the biggest and most observable source of credit risk.

Catherine (2020) empirically examined the influence of credit risk management on the bank of Africa profitability in Uganda using correlation and regression analysis. The return on asset and equity were used as proxy for profitability while the diversification of risk, control of credit risk, as well as appraisal of credit form part of the independent variables in the study. The result from the study showed a positive and significant relationship between credit risk management components and financial performance in the bank of Africa in Uganda. Rehman, Muhammad, and Sarwar (2019) examined the effect of risk management on credit risk in Pakistan commercial bank using multiple regression analysis. The result of the study showed that credit risk management has a significant impact on performance. Ekinci and Poyraz (2019) investigated the effect of credit risk on bank performance in turkey from 2015 to 2017 using panel regression analysis. The result of the study showed that a relationship exists between credit risk and the performance of Turkish banks.

3. Methodology

3.1 Model Specification

To positively incorporate the impact of credit management in the deposit money banks in Nigeria, the sample of twelve (12) listed banks for a period of thirteen (13) years from 2006 to 2018 were used. The panel data multiple regression models were specified to capture the peculiarity of the data set. Therefore, the functional form of our model is shown below:

PERF = f(BNPLR, BLDR,BL) (1)

Where: PERF is a measure of bank performance proxy by return on asset (ROA); BNPLR is bank non-performing loan to ratio; BLDR is bank loan to deposit ratio; BL is bank leverage
The econometric form of the model above is stated below:

$$ROA_{it} = \beta_{it} + \beta_1 BNPLR_{it} + \beta_2 BLDR_{it} + \beta_3 BL_{it} + \delta_i + \gamma_t + U_t \quad (2)$$

Where i represent the banks, t represents time, α represents the general intercept and U_t is the general stochastic error term.

4. Results and Discussion

This section presents the results, analysis and interpretation of the panel data collected for the purpose of testing the models developed in this study. The set of analysis in this study comprises analyses to determine if banks' credit risk affect their performance.

4.1 Descriptive Statistics

The summary statistics are presented for firm performance measure as well as for the independent variables related to the banks' credit management. The sample was made up of twelve (12) quoted deposit money banks for a period of thirteen (13) years, making a total of 153 observations. On average, the dependent variable (ROA) had a mean value of 1.65. The data spread from the mean is best described by the standard deviation. Results indicate that the standard deviation of the dependent variable is 0.65, which shows a moderate variation of the dependent variable. This is further confirmed with the minimum and maximum. Looking at other variables, the bank non-performing loan ratio (BNPLR) has an average of 4.07, bank loan to deposit ratio (70.69), and bank leverage (85.43) throughout the 13 years period under study.

All the independent variable moderately spread as shown by their respective standard deviation. The return on asset is normally distributed while all the independent variables are not normally distributed as shown by their respective Jarque-Bera probability values.

Table 1: Descriptive Statistics for Measures of Firm Performance and Credit Management

	ROA	BNPLR	BLDR	BL
Mean	1.648	4.073	70.687	85.432
Median	1.850	2.180	76.350	86.780
Maximum	2.570	21.020	88.910	91.360
Minimum	0.420	0.000	48.800	75.740
Std. Dev.	0.646	5.391	15.416	4.210
Skewness	-0.452	2.362	-0.230	-0.992
Kurtosis	2.256	7.721	1.394	3.316
Jarque-Bera	8.910	289.866	18.138	26.211
Probability	0.012	0.000	0.000	0.000
Observations	156.000	156.000	156.000	156.000

Source: Author's computations 2020

The patterns of the data series are depict in the correlation analysis table below. The correlations between credit risk management variables and performance are positive and very low except for that of ROA and BNPLR which is negative at 54 per cent. The BNPLR has a negative relationship with BLDR and BL. This suggests that little relationship exists among the variables. This outcome is particularly useful in the estimation of the equations since it indicates that multicollinearity will not be a problem in the models to be estimated.

Table 2: Correlation Analysis

	ROA	BNPLR	BLDR	BL
ROA	1.0000	-0.5356	0.0666	0.4963
BNPLR	-0.5356	1.0000	0.4223	-0.8307
BLDR	0.0666	0.4223	1.0000	-0.3926
BL	0.4963	-0.8307	-0.3926	1.0000

Source: Author's computations 2020

4.2 Panel data analysis results

The series of estimates relate to the impact of credit risk management on firm performance variables using panel regression analysis. The Hausman test is initially conducted to determine the most effective method to select from a random or fixed effect. The random effect was selected because the Chi-square value for the equation in Table 3 below is not significant.

Table 3: Hausman Test for Effects

Test Summary		Chi-Sq. Statistic	Chi-Sq. d.f.	Prob.
Cross-section random		0.0000	3	1.0000
Variable	*Fixed*	*Random*	*Var(Diff.)*	*Prob.*
BNPLR	-0.0613	-0.0613	0.0000	1.0000
BLDR	0.0154	0.0153	0.0000	0.0000
BL	0.0330	0.0330	0.0000	1.0000

Source: Author's computations 2020

4.3 Credit Risk Management and Return on Assets

The result of the impact of credit management on banks' return on assets is reported in Table 4 below. The diagnostic statistics for the model are moderate and rather impressive. The adjusted R squared value of 0.39 indicates that over 39 per cent of the systematic variations in ROA among the banks is explained by the explanatory variables. The F value of 34.6 is also high and easily passes the significance test at the 1 per cent level. This shows the hypothesis of a significant relationship between ROA and all the independent variables combined is significant.

The particular impact of each of the explanatory variables on ROA is determined by considering the individual coefficients of the explanatory variables in terms of signs and significance. In the results reported, only the coefficient of bank non-performing loan ratio has a negative sign, all the other coefficients are positive.

Moreover, the coefficient of bank non-performing loan ratio has a negative impact on bank performance and passes the significance test at the 1 per cent level. This shows that bank non-performing loan has a strong negative impact on the banks' performance for the sample period. The escalation of banks' non-performing loan could drastically reduce the rate of return on the assets of the banks. Since credit creation is the main source of income for the bank, excessive accumulation of non-performing loan could lead to losing of efficiency of assets by management.

The other variable that has an effect on bank performance is the bank loan to deposit ratio. The coefficient of bank loan to deposit ratio has a positive impact on bank performance and passes the significance test at the 1 per cent level. This indicates that the increase in bank loan as a result of increasing customer deposit tend to increase the return on asset of banks in Nigeria.

The coefficients of bank leverage fail the significance test at the 10 per cent level and indicate that these changes do not affect the ROA positions of the banks.

Table 4: Impact of Credit Risk Management on ROA

Variable	*Coefficient*	*t-Statistic*	*Prob.*
C	-2.0129	-1.2494	0.2134
BNPLR	-0.0613	-4.3100	0.0000
BLDR	0.0154	5.1090	0.0000
BL	0.0330	1.8397	0.0678
R-squared	0.405	*F-statistic*	34.55(0.0000)
Adjusted R-squared	0.394	*Durbin-Watson stat*	1.95

Source: Author's computations 2020

4.4 Implications of Findings

Results from the empirical analysis specifically showed the following findings: Firstly, that banks non-performing loan ratio has a significant negative impact on its return on asset. Thus, higher non-performing loan ratio tends to weaken the financial performance of banks. The results imply that the burden of debt tends to cause management to lose the efficiency of assets management. This may come as a result of investment decisions that may not be efficient. Secondly, the bank loan to deposit has a significant positive impact on its return on asset. This implies that a higher loan to deposit ratio tends to increase the financial performance of banks in Nigeria. The results indicate that a rising bank loan tends to increase the performance of banks. This simply explains that the bank basically depends on the loan to boost its performance. Thirdly, that bank leverage does not have any impact on the performance of banks in Nigeria. The overall implication of this result is that a well-managed bank credit could increase bank performance in Nigeria.

5. Summary and Conclusion

The management of bank credit is a very important part of the banking business because it serves as the key source of income for banks. Thus, the bank ought to effectively and efficiently guide

against higher default risk which is counter-effective to the performance of a bank. For banks to increase performance and sustain the higher return on asset, emphasizes should be focused on the management of credit. Banks having good financial performance are in a better position to attract depositors. Depositors prefer these banks that have a low-risk profile. In this study, we found that leverage does not affect bank performance. Banks should consider cheap debt in order to boost their performance.

The findings made in the study give impetus for the following recommendations which are useful to both the market regulators and investors in the market. The findings suggest that banks top management as well as regulators should effectively manage and monitor the usage of such loan to reduce the rate of default on the part of the borrowers. The regulator should make feasibility policies regarding the percentage of the loan that can be made available from a given deposit. Also, bank management should maintain such percentage and should be liable to be punished if such percentage is not adhered to. Top management should balance the bank leverage in order to enhance the profitability of the banks. This is a significant policy recommendation for finance managers because they can utilize more equity to form optimal leverage to maximize the wealth of shareholders.

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