

Credit Management and Performance of Selected Deposit Money Banks in Nigeria

Abstract

This study examined credit management and performance of selected Deposit Money Banks in Nigeria. The time series data was sourced from the audited financial statements of the banks from 2007-2020. Non-performing Loans (NPLs), Loan-to-Deposit Ratio (LDR), Liquidity Ratio (LQR), and Capital Adequacy Ratio (CAR) were used as proxy of credit management while Return on Equity (ROE) was used in measuring performance. The stationarity of the time series was tested using the LLC, IPS, ADF PP tests. Using the panel regression of Fixed effects and Random effects techniques, the study found credit management having a positive and significant effect on performance of MDBs under the reviewed period. From the indicators, the liquidity ratio (LQR) was found to have a positive but insignificant effect on ROE. The findings also revealed that NPL has a positive but insignificant effect on ROE. The study further found the capital adequacy ratio (CAR) to have a negative but significant effect on ROE. Loan to deposit ratio (LDR) was found having negative and insignificant effect on ROE. The study recommended, among other things, that to maintain a stable liquidity ratio and meet financial obligations, banks should endeavor to operate within the CBN policy minimum requirement of liquidity ratio at 30% , which can be achieved by shortening asset maturity, lengthening liability maturities, and possibly issuing more equity.

Keywords: Credit Management, Non-Performing Loans, Liquidity Ratio, Capital Adequacy Ratio, Return on Equity

JEL Code: G21, G32, G33, G28, G10

1. Introduction

The banking industry is a cornerstone of economic development, playing a vital role in facilitating commerce, providing liquidity, and supporting efficient payment systems. In Nigeria, as in other nations, the sector's strategic importance is evident in its role in mobilizing funds from surplus units to deficit units through lending activities. The timely repayment of loans and advances is crucial, as it enables banks to extend additional credit to existing and future customers.

However, the lending function exposes banks to significant credit risk, which refers to the possibility of losing outstanding loans due to borrowers' default. Poor credit risk management can erode a bank's profitability and lead to distress, highlighting the need for effective credit management practices. As credit creation is the primary income-generating activity for banks, the importance of managing credit risk cannot be overstated. Despite various regulatory measures and interventions by the Central Bank of Nigeria (CBN) and other authorities, challenges such as non-performing loans (NPLs) continue to pose significant risks to the stability and performance of Nigerian banks.

This study aims to explore the effects of credit management on the financial performance of Deposit Money Banks (DMBs) in Nigeria, focusing on key variables such as liquidity ratio, non-performing loans, capital adequacy ratio, and loan-to-deposit ratio. Understanding these relationships is crucial for improving the resilience and sustainability of the banking sector in Nigeria.

The persistent issue of non-performing loans has been a major concern for the Nigerian banking industry. Despite various reforms and guidelines implemented by regulatory bodies, the sector continues to face liquidity challenges due to poor credit management. In 2009, non-performing loans across the industry reached alarming levels, prompting interventions such as the establishment of a private credit bureau and the consolidation program by the CBN. Although these measures initially led to a reduction in NPLs, the problem has resurfaced, with the non-performing loan ratio rising again in subsequent years.

The resurgence of NPLs highlights the ongoing struggle to effectively manage credit risk within the banking sector. Poor credit management not only hampers a bank's ability to lend but also undermines the overall financial stability of the institution, affecting both current and potential customers. The conflicting empirical evidence on the impact of credit management practices on the financial performance of banks further complicates the issue, with some studies indicating a negative relationship between credit management and performance, while others suggest positive or insignificant effects.

This study seeks to address these inconsistencies by providing an analysis of the relationship between credit management and the financial performance of selected Deposit Money Banks in Nigeria. By focusing on key indicators such as liquidity ratio, non-performing loans ratio, capital adequacy ratio, and loan-to-deposit ratio, the study aims to offer insights that could inform better credit management practices and contribute to the stability and profitability of the Nigerian banking sector.

Given the importance of effective credit management as a strategy for preventing bank distress, the findings of this study are expected to be of significant value to bank

management, regulators, policymakers, and other stakeholders in the financial industry. The study's outcomes could also provide a foundation for further research on enhancing the resilience of the banking sector in the face of credit-related challenges.

The primary problem this study addresses is the persistent challenge of non-performing loans (NPLs) in Nigeria's Deposit Money Banks (DMBs), despite numerous regulatory interventions. While DMBs rely heavily on loans created from customer deposits as a key revenue source, poor credit management has led to a significant increase in NPLs, which in turn jeopardizes the financial stability and performance of these banks. Despite efforts by the Central Bank of Nigeria (CBN) to mitigate this issue through various programs and reforms, including the establishment of private credit bureaus and the revision of safety guidelines, the NPL ratio has continued to rise, leading to liquidity problems and reduced lending capacity. The empirical literature presents conflicting results regarding the impact of credit management on the financial performance of DMBs, further complicating the issue and necessitating a more in-depth investigation. This study is thus motivated by the need to address these gaps and provide clearer insights into the relationship between credit management and bank performance in Nigeria. The study will focus on three quoted deposit money banks (DMBs) namely Zenith Bank Plc., First Bank Plc, and, Guarantee Trust Bank Plc.

2. Literature Review

A discussion of some theoretical literature in information asymmetry and liquidity management in the financial markets is reviewed. Asymmetric Information theory presents

possibilities to banks since their information states differ from borrowers' states; there can be moral hazard and adverse selection problems. This theory, as described by Akerlof's Lemon Problem, makes people understand that information asymmetry affects the market dealing through credit markets, whereby lenders face problems in evaluating the risks of borrowers and thus may incur high costs in interest rates or result in refusal of financing. Anticipated Income Theory asserts that the banking system can control or regulate liquidity by scheduling loan re-payments to correspond with the borrowers' anticipated income, thus ensuring both the supply of short-term and long-term credit facilities. Also, the Shift-ability theory suggests that certain assets are easily negotiable or can be sold to provide liquidity and, thus, the need for a large amount of cash.

Non-performing loans (NPLs) have burdened banks, particularly in emerging markets like Nigeria. Rehman et al. (2024) assessed that controlling corruption is one of the significant factors that influence NPL, and poor control of corruption leads to high NPLs in South Asian countries. This is true in Nigeria as various regulatory efforts have failed to tame the acts that lead to NPLs, even with efforts made by CBN.

Banks' operating results, therefore, can be seen as correlated with credit risk management approaches. In a similar vein, Ekinci and Poyraz (2019) establish a negative association between credit risk and financial performance within Turkey's banking sector study; however, they highlighted the need for adequate credit risk management to ensure the sustenance of profitability among the banks. Likewise, Sadaa et al. (2023) studied the antecedent of credit risk in Iraqi banks and concluded that poor governance practices increase the financial craze associated with credit risk. The above facts make an extreme case for

effective credit risk mitigation that would help protect the emerging market banks' balance sheets.

Financial innovation is also a double-edged sword in the banking sector. Ashiru et al. (2023) demonstrated that electronic banking services significantly enhance banks' profitability in Sub-Saharan Africa, including Nigeria. However, deploying such technologies must be carefully managed to avoid increasing exposure to credit risk and other financial vulnerabilities. In contrast, Osabutey and Jackson (2024) highlighted the challenges of financial inclusion initiatives in Africa, particularly the limitations of mobile money systems in reaching the poorest segments of the population. These challenges suggest that financial innovation can drive performance but must be aligned with broader economic and social objectives.

The conflicting evidence on the impact of credit management practices on bank performance in Nigeria further complicates the issue. For example, Fajinmi et al. (2023) found that effective portfolio management significantly influences Nigerian Deposit Money Banks (DMBs) profitability and asset quality. Yet, there remains a gap in understanding the specific mechanisms through which credit management practices affect bank performance.

3.Method of Study

In achieving the objectives of this study, the study adopted Longitudinal ex-post facto research design as past data in the form of secondary data were utilized. Thus, data were sourced from the audited annual financial statement of listed banks covering for a fourteen year period were analyzed guided by the availability of relevant data used for the study, three banks namely Zenith

Bank Plc., Guarantee Trust Bank Plc., and First Bank Plc., were selected. The study modeled the effect of credit management indicators and performance of DMBs as follows:

$$ROE_t = \beta_0 + \beta_1 NPL_{it} + \beta_2 LDR_{it} + \beta_3 LQR_{it} + \beta_4 CAR_{it} + e_{it} \quad (1)$$

Where:

ROE: Return on Equity

NPL: Non-performing Loan ratio of *ith*bank at year t.

LDR: Loan-to-Deposit Ratio of *ith*bank at year t

LQR: Liquidity Ratio of *ith*bank at year t

CAR: Capital Adequacy ratio of *ith*bank at year t.

e = Stochastic or disturbance term.

t = Time dimension of the Variables

β_0 = Constant or Intercept.

β_{1-4} = Coefficients to be estimated or the Coefficients of slope parameters.

To determine which of the results of the two regressions (Fixed effects and Random effects models) is appropriate for purpose of valid inference, the Hausman's(1978) specification test was conducted as presented in table 4

4.1 Results and Discussion

Table 1 Descriptive Statistics

	ROE	NPL	LQR	LDR	CAR
Mean	18.24405	3.410000	59.76190	41.46000	31.29048
Median	18.85000	3.060000	57.35000	46.75000	26.50000
Maximum	33.98000	12.26000	90.60000	85.74000	58.70000
Minimum	2.000000	0.300000	40.07000	2.570000	16.64000
Std. Dev.	8.578177	2.410908	11.97030	25.22088	11.71258
Skewness	-0.161347	1.408299	0.433557	-0.239452	0.786762
Kurtosis	2.122977	5.588460	2.531649	1.721849	2.396639
Jarque-Bera Probability	1.528275	25.60835	1.699668	3.260281	4.970039
	0.465735	0.000003	0.427486	0.195902	0.083324

Table 1 shows the descriptive statistics for the five variables under study. From the table, the average value of DMBs performance (ROE) is 18.24% indicating that during the period under review (2007-2020), on the average, the total returns equity generated by the three sampled DMBs in Nigeria is 18.24%. Judging from the global industry standard of 10%-12%, the studied banks are profitable and are efficient in generating profits for their shareholders.

The non-performing loan (NPL) ratio among the selected Nigeria DMBs ranges between 3.41% and 12.26% (Max), and 0.3% (Mini) respectively of which is within the statutory threshold of 5%. The above indicates a moderate level of volatility among the banks' ability in managing credit risk.

Further, the minimum and maximum Capital Adequacy Ratio (CAR) of the banks stood at 58.7% (max) and 16.64% (mini) of which are higher than the CBN and Basel II requirements regulatory threshold of 10%. Thus, the banks have a strong capital base and have complied with the CBN directives and Basel II requirements.

The liquidity ratio (LQR) of the sampled DMBs varied from 90.6% (max) to 40.0% (mini) with a mean of 59.76% and standard deviation of 11.9%. The above implies that the banks have been able to comply with the CBN minimum liquidity requirement of 30%. Thus, the banks are holding enough cash and can easily meet their short-term obligations.

The banks' loan-to-deposit ratio (LDR) mean is 41.46% of which is below the CBN threshold of 65%. The above however implies that MDBs have moderate liquidity to cover any unforeseen fund requirements.

Table 2: Panel Unit Root Test: Summary

Variables	LLC	IPS	ADF Fisher	PP Fisher	Breitung	Remark
ROE	-1.90463**	-2.09856**	14.7236**	13.0361**	-3.04242**	I(0)
NPL	-8.83158**	-4.61379	28.2074**	19.6640**	-2.51067**	I(1)
LDR	-5.31240**	-2.78868**	17.9844**	22.3041**	-1.84213**	I(1)
LQR	-4.29358**	-3.54621**	22.3376**	41.4542**	-2.51050**	I(1)
CAR	-4.85015**	-3.20196**	20.7943**	34.9930**	-2.12665**	I(1)

Table.2 indicates the stationarity test of the panel data using five different types of tests to test the null hypothesis (Ho) of the presence of unit root. At level, ROE test indicates the absence of unit root since all the variables were significant. However, NPL, LDR, LQR, & CAR were stationary at first difference in all the tests such as LLC, IPS, ADF, PP, Breitung

Table 3 presents the result of the regression based on Fixed effects and Random effects techniques. The two approaches demonstrated an agreement of Liquidity Ratio (LQR) having a positive but insignificant effect on the performance of MDBs (ROE). Also, the two approaches (Fixed and Random effects) are in agreement of Capital Adequacy Ratio (CAR) having negative but significant effect on the performance of MDBs under the period under review. Further, Loan-to-Deposit Ratio (LDR) in both approaches had negative positive on ROE. However it was insignificant under random and significant under fixed effect. Finally, Non-performing Loan (NPL) was found having negative and insignificant effect (Fixed effect) and positive and insignificant effect on ROE under Random effect.

Table.3: Regression Results

	Fixed effects	Random effects
	ROE	
Constant	40.2721738	38.64348
(0.0001)	(0.0001)	
NPL	-0.084653	0.497742
	(0.8667)	(0.3019)
LDR	-0.183136	-0.096593
	(0.0401)	(0.1353)
LQR	0.016283	0.026330
(0.8955)	(0.8053)	
CAR	-0.483207	-0.628482
(0.0208)	(0.0001)	
R ²	0.586513	0.565186
Adjusted R ²	0.515630	0.518180
F-statistic	8.274339	12.02349
Durbin-Watson stat	1.624186	1.571713
Prob(F-statistic)	0.000013	0.000002
No of observations	42	42

Hausman's Specification

To determine which of the results of the two regressions (Fixed effects and Random effects models) is appropriate for purpose of valid inference, the Hausman's(1978) specification test was conducted as presented in table.4. According to Gujarati and Porter (2009), when the p -value is significant at 5% level, the Fixed effects model is more appropriate for valid inferences to be made. However, if the p -value is not significant at 5%, then the Random effects model is suitable to be used for inference. The results of the p -values for the model as shown in table 4 is greater than 5%, hence the discussion of regression results was made using the outcome of the Random effects model.

Table 4: Hausman's Specification Result

Test Summary	Chi-Sq. Statistic	Chi-Sq. d.f.	Prob.
Period random	4.284746	4	0.3688

Source: Authors' computation

Discussions

The empirical result in table 3 provides that the coefficient of determination (R-squared) of 0.565 (56.5%) and Adjusted R-squared of 0.51 (51%) indicating that 56.5% variation in the dependent variable (ROE) is explained by the explanatory and control variables (NPL, LDR, LQR, and CAR). The Durbin-Watson value of 1.5 (which falls within the acceptable region) clearly shows the absence of auto-serial correlation in the successive values of the parameters. F-statistic is 12.02 and this is significant at 5% level ($p = 0.000$). The above result affirms that the model as a whole is jointly fit. Hence, the explanatory values are significantly linked with the dependent variable (ROE). Thus, credit management has significant effect on the performance of MDBs.

The Random effect of the regression result in Table.3 indicates a positive (0.026330) but insignificant (p -value 0.8053) effect of liquidity ratio on ROE. Implying that increase in liquidity management will increase ROE by 0.026%. The result equally implies that the studied banks may have met the liquidity regulatory threshold of 30%, hold moderate cash to meet their short-term obligations, but the above is yet to impact significantly on ROE during the period under consideration. The positive coefficient of LQR is in line with the priori expectation because theoretically, adequate liquidity is an essential requirement for the profitability of any bank. The study hence accepted the null hypothesis and conclude that liquidity ratio has no significant effect

on ROE. The above findings contradicts the findings of Mayowa and Ehi (2019) that found liquidity ratio (LQR) having negative but significant impact on performance (ROA) of MDBs.

Non-Performing Loan (NPL) has a positive and insignificant effect on Performance (ROE) as indicated by a coefficient of 0.497742 and statistically insignificant ($p = 0.30$) at 5%. This implies that increase in Non-Performing Loan is highly detrimental to DMBs Performance (ROE). The positive effect of NPL is contrary to the priori expectation of NPL having negative effect on ROE. That is high non-performing loan has depreciated shareholders returns. Hence, the study accepts the null hypothesis and conclude that Non-performing loans (NPLs) ratio does not have any significant effect on ROE. The study's finding is in line with the findings of Mayowa and Ehi (2019) who established positive relationship between NPLR and ROA. However, the finding contradicts the findings of Uwuigbe, Uwuigbe, & Oyewo (2015) that found ratio of non-performing loans and bad debt having significant negative effect on the performance of banks in Nigeria. Also, the finding did not support that of Ifeanyi (2017) that found non-performing loan having negative and insignificant effect on profitability.

Capital adequacy ratio (CAR) has a negative but significant effect on Performance (ROE). This is shown by a regression coefficient of -0.62848 and statistically significant P-value of 0.0001 at 5%. Implying that increase in CAR will decrease performance (ROE) by -0.62%. The result also implies operating within and above the CBN and Basel II threshold of 10% have a significant negative effect on ROE of the studied banks. The negative effect of CAR on ROE is theoretically inconsistent with a priori expectation, and this implies that availability of adequate capital to DMBs is not the only factor that determines an improved performance of banks over time. The study's finding did support the findings of Mayowa and Ehi (2019) whose study revealed that credit risk management measured by Capital Adequacy Ratio (CAR) has a significant impact on

the profitability measured by Return on Assets (ROA) of commercial banks' in Nigeria. However, the finding is inconsistent with the findings of Kajola, Olabisi, Adedeji, & Babatolu (2018) that found CAR, NPL having positive and insignificant effect on ROE & ROA.

Loan to deposit ratio (LDR) was found to have negative and insignificant effect on Performance (ROE). This is indicated by a regression coefficient of -0.0965. The effect is statistically insignificant at $p = 0.13$ which is greater than 0.05. That is 1% increase in LDR will result to a decrease in ROE by -0.09%. This means that the LDR of the studied banks is below the CBN threshold of 65% and this have impacted negatively on their performance (ROE). Meaning also that the banks may not have the needed liquidity to cover any unforeseen fund requirements. The negative and insignificant effect of LDR on ROE is theoretically inconsistent with a priori expectation that LDR will have positive impact on ROE. The study's finding is similar to that of Oitolaiye (2019) that found Loan-to-Deposit Ratio (LDR) having positive and insignificant effect on capital employed (ROCE) and Dividend per Share (DPRS).

5.1 conclusion

The empirical analysis established that credit management had a positive and significant relationship with the performance of the MDBs within the period under consideration. In particular, liquidity ratio (LQR) and non-performing loans (NPLs) were observed to be positively related but insignificant to ROE. From the findings, it can be said that the capital adequacy ratio (CAR) has a negative significant relationship with Performance (ROE); on the other hand, the Loan to deposit ratio (LDR) has a negative insignificant relationship with Performance (ROE).

Credit management is one of the most crucial deposits money banks make, affecting their operations to achieve the set financial goals and future growth. Flawed risks are inherent in banks, including credit risk, in an effort to optimize their economic returns. Hence, if proper credit management is not employed, the winds of credit risk may negatively affect banks' business continuation. To this, the study established the effect that credit management has on the performance of MDBs in Nigeria using Non-Performing Loan (NPL), Loan-to-Deposit Ratio (LDR), Liquidity Ratio (LQR), Capital Adequacy Ratio (CAR) as an independent variable on Return on Equity (ROE).

As depicted in the statistical analysis, the conclusion derived from this study is that LDR negatively and insignificantly affects ROE. Further, it is concluded that there is a significant and positive relationship between NPL and ROE. They also find that H1b holds that CAR has a negative and significant impact on ROE. However, LDR has a negative and zero-order considerable effect on ROE. With regard to the above findings, this study concluded that credit management has a positive impact on the performance of MDBs during the period under analysis.

Based on the study's outcome, the following recommendations are proffered:

- a) To maintain a stable liquidity ratio and meet financial obligations, banks should endeavor to operate within the CBN policy minimum requirement of 30%. This can be achieved by shortening asset maturity, lengthening liability maturities, and possibly issuing more equity.
- b) Since non-performing loans (NPLs) hurt banks' cash flows significantly, they should maintain regulatory requirements at 5% in strengthening the asset quality of banks via taking

possession of assets pledged as collateral, selling the non-performing loans at significant discounts, and maintaining good lending policy through client profiling.

c) To reduce the risk of insolvency, especially in meeting loan demands, banks should maintain the regulatory requirement of 65% of LDR. This can be achieved by offering higher deposit rate to encourage more deposit from customers and utilizing various online channels (POS, ATM, Mobile Apps) in growing customer deposits.

d) Banks should have adequate capital to withstand the adverse effects of credit risk by operating above the minimum regulatory framework of 10%

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