

Credit Risk and Return on Shareholder's Fund: Evidence from Deposit Money Banks in Nigeria

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ABSTRACT: This study investigated the impact of credit risk on the return on shareholders' funds (RSF) of deposit money banks (DMBs) in Nigeria over a 14-year span from 2010 to 2023. Using a multiple regression model along with post-estimation diagnostic tests, the research assessed how credit risk variables influence RSF. The results revealed that the Loan-to-Deposit Ratio (LDR) ($\beta = 1.731004$, $p = 0.1224$) had a positive but statistically insignificant relationship with RSF. Similarly, the Lending Rate (LR) ($\beta = 0.302337$, $p = 0.6704$) also showed a positive yet statistically insignificant connection to RSF. The R-squared value indicated that LDR and LR together accounted for approximately 23% of the variation in RSF, with the remaining 77% due to other factors not included in the model. The Durbin-Watson statistic of 2.222600 suggested an absence of autocorrelation, but it also pointed to the likelihood that several key variables were omitted from the model. The study concluded that both LDR and LR positively influence the return on shareholders' funds in Nigerian banks, although their effects are not statistically significant. It recommended that deposit money banks in Nigeria should place greater emphasis on managing and controlling their loan-to-deposit ratios and lending rates to enhance financial performance. Furthermore, for effective supervision, banks should operate within a sound credit granting framework, ensure efficient credit administration including monitoring and processing, and maintain strong controls over credit risk. In addition, establishing mechanisms to hedge against financial market risks is essential for sustaining stability and improving performance.

Keywords: Credit risk, Loan to Deposit Ratio, Return on Shareholders Fund, CBN, Deposit Money Banks.

I. INTRODUCTION

According to Ajaja and Adebayo, as well as Oke, Adebayo, and Adeleye (2025), deposit money banks play a vital role in promoting economic growth and development by facilitating the mobilization of savings and the efficient allocation of financial resources. Their performance is closely tied to their ability to generate funds and channel them into profitable investments. These banks are driven to issue loans and advances while adhering to three core principles: profitability, liquidity, and solvency—irrespective of a country's economic policies or income sources. However, several factors influence a bank's lending decisions, including prevailing interest rates, the volume of deposits, levels of domestic and foreign investments, the bank's liquidity ratio, its public image, and its overall reputation. The origins of lending practices date back to the Industrial Revolution, a time when increased production and trade created a demand for substantial capital investment. Business leaders, unable to meet these growing financial needs, began to rely on banks for financial support (Isakov, 2023). The stability of a country's financial system is crucial, as its failure can hinder economic progress. In pursuit of greater profitability, financial institutions often encounter heightened risk levels. Banks are exposed to various types of risks in their operations, including interest rate risk, foreign exchange risk, political risk, credit risk, market risk, and liquidity risk. Effective decision-making and risk mitigation strategies are essential for improving operational efficiency and overall performance. Among these

risks, credit risk stands out as having a particularly significant impact on a bank's performance.

As noted by Isakov (2023), credit risk is considered to be the biggest risk for commercial banks because the main stream of income for commercial banks are generated through lending and these institutions might face significant financial hurdles if the borrowers fail to pay back their obligated amounts. The collapse of a single bank or market can be directly transmitted to other markets or institutions because of the spillover effect and result in a financial crisis in a country or in a region as a whole. If credit is not properly rerouted, managed and regulated, it has a significant negative impact on banks, reducing their output and causing greater harm and frustration (Berger and Christo, 2009). According to Alalade, Binuyo and Oguntodu (2014), the main reasons for the difficulties of the Nigerian banking sector are poor credit management and inadequate lending. Effective management of credit risk is vital for the survival and expansion of financial institutions. Credit risk management is an organized method of managing uncertainty through risk assessment, planning and reduction of risk using management resources. Some options include transfer to a new party, avoiding the risk, limiting its negative effects, and accepting some or all of the risk.

Financial institutions require substantial financial assets to fulfill their intermediary functions. Acting as monetary intermediaries, banks allocate dormant depositors' funds across diverse investment portfolios. A failure to meet financial commitments can erode public trust in the financial system, as evidenced by the recent banking crisis. Additionally, the emergence of new banks has intensified competition within the financial sector, complicating the ability of deposit-taking banks to maintain profitability while ensuring adequate liquidity to satisfy depositor demands (Okaro and Nwakabo, 2016).

As profit-driven entities, banks are required to generate earnings to enhance shareholder value (Alper and Anber, 2011). Thus, evaluating their financial performance is crucial. The banking sector's performance can be measured through several metrics, including loans and advances, interest income, and return on assets (Ongore and Kusa, 2013; Uchendu, 2010; Uwazie and Aina, 2015). Additionally, the financial performance of banks is greatly affected by the monetary policies enacted by monetary authorities (Enyioko, 2012). Therefore, monetary authorities manage the economy by employing various

monetary tools as deemed necessary. The connection between credit risk and the financial performance of deposit money banks has been the subject of numerous studies; however, the findings have often been inconsistent and ambiguous. Given the inconclusive results from previous researchers who have investigated the relationship between credit risk and bank performance in both developing and developed nations, there is a pressing need for further exploration to enhance the existing body of knowledge. Consequently, this study aims to analyze the impact of credit risk on the return on shareholder's fund of deposit money banks in Nigeria.

The specific objectives are:

- i. To examine the influence of loan to deposit ratio on the return on shareholders' fund of deposit money banks in Nigeria.
- ii. To evaluate the effect of the lending rate on the return on shareholders' fund of deposit money banks in Nigeria.

To achieve these objectives, the study tests the following hypotheses:

H₁: loan to deposit ratio has no significantly effect on the return on shareholders' fund of money banks in Nigeria.

H₂: lending rate has no significantly effect on the return on shareholders' fund of deposit money banks in Nigeria.

II. LITERATURE AND EMPIRICAL REVIEW

According to Harelimana (2017), risk represents uncertainty or indecision regarding outcomes that may negatively affect a bank's ability to achieve its objectives. It encompasses both potential threats and opportunities. Paulinus and Jones (2017) highlighted that risk involves the likelihood of harmful events arising from internal or external vulnerabilities, which can be mitigated through proactive measures. Similarly, Fabrice (2018) emphasized that while risk-taking is an integral aspect of management, it should be approached with caution and not undertaken recklessly. The extent of a bank's exposure to risk significantly impacts its profitability and market valuation. Odawo et al. (2019) described credit risk as the possibility that a contracting party fails to fulfill obligations as per agreed terms. In line with this, Nwude and Okeke (2018), as well as Okere et al. (2018), defined credit risk as the potential financial loss resulting from a borrower's failure to

repay loans and interest according to the agreed conditions. Empirical research, such as that by Bala, Auwal, and Salisu (2022), examined the impact of credit risk on the profitability of publicly listed Deposit Money Banks (DMBs) in Nigeria. Using an ex-post facto research design, the study selected eight out of twenty-four listed DMBs on the Nigerian Exchange Group. Data was collected from audited financial statements covering the period 2015 to 2019. The researchers applied the Ordinary Least Squares (OLS) regression method and found that non-performing loans (NPLs) had an insignificant effect on the profitability of the banks, with a coefficient of 0.141 and a p-value of 0.797.

Similarly, Echobu and Okika (2019) investigated the link between credit risk and the financial performance of Nigerian DMBs from 2006 to 2017. Using secondary data sourced from the audited reports of all fifteen listed DMBs as of December 31, 2017, and conducting regression analysis, they discovered that both non-performing loans and impairment loan write-offs had a significant negative impact on financial performance. However, capital adequacy showed a negative relationship that was not statistically significant.

Odawo, Makokha, and Namusonge (2019) also explored the effect of credit risk management on the performance of banks in Kenya. Their study involved 44 commercial banks—28 local and 16 foreign. Prior to analysis, data collection tools were piloted for reliability and validity. The data, including annual reports and financial statements from 2011 to 2016, were sourced from the Central Bank of Kenya. Using multiple regression analysis, the study concluded that sound credit risk management practices have a significant positive impact on bank performance.

Kajola, Olabisi, Adedeji, and Babatolu (2018) studied the effect of credit risk management on the financial performance of ten publicly listed Nigerian DMBs from 2005 to 2016. The study measured credit risk management using three indicators: Non-performing Loans to Total Loans Ratio (NPLLR), Non-performing Loans to Total Deposits Ratio (NPLDR), and Capital Adequacy Ratio (CAR). Financial performance was evaluated using Return on Assets (ROA) and Return on Equity (ROE). Employing the Generalized Least Squares (GLS) regression model with random effects, the results revealed that all three credit risk indicators had a statistically significant relationship with both ROA and ROE ($p < 0.05$).

In another study, Collins, Mepbari, Sira, and Miebaka (2018) explored the impact of credit management on the performance of Nigerian banks through a cross-sectional survey design. The population consisted of management personnel from commercial banks across Nigeria. Eleven banks were selected through systematic sampling, with six respondents (a manager and five senior staff members) chosen per bank, totaling 66 participants. Multiple regression analysis showed that credit management practices—namely credit appraisal, credit risk control, and collection policy—significantly affected bank performance.

Mureithi (2016) assessed how credit management practices influence financial performance in Kenya's commercial banking sector. The study covered all 45 banks in the country, utilizing a census approach. Data was gathered through both primary sources (questionnaires) and secondary sources (financial statements and annual reports). The regression analysis findings demonstrated that credit management strategies have a significant impact on the financial performance of commercial banks in Kenya.

III. METHODOLOGY

Secondary form of external data was used and sourced from fourteen of the DMBs in Nigeria. The data span from 2010 to 2023. The study employed ordinary least squared econometrics technique, descriptive analysis, and post estimation test as a functional model to realize the general goal of establishing a relationship between credit risk, and return on shareholder's fund of deposit money banks in Nigeria.

MODEL SPECIFICATION

$$RSF = f(LDR, LR)$$

eq 1

The econometric model of the study which accounts for the constant term, the regression coefficient

and the error term is stated as equation 2

$$RSF = \alpha_0 + \alpha_1 LDR + \alpha_2 LR + \mu$$

eq 2

Where;

α_0 = the intercept or the constant term α_1, α_2

= are the coefficients of the regression.

RSF = Return on Shareholders Fund

LDR = Loan to Deposit Ratio

LR = Lending Rate

μ is the error term of the regression.

IV. ANALYSIS OF RESULTS AND DISCUSSION OF FINDINGS

The regression results on credit risk and return on shareholder's fund (20103-2023)

Table 1 Dependent variable: RSF

Variables	Coefficient	Std error	t-stat	Prob
C	-3.757665	1.819256	-2.065496	0.0633
LDR	1.731004	1.034406	-1.673427	0.1224
LR	0.302337	0.691395	0.437285	0.6704

Source: Author's Computation, (2025)

$R^2 = 0.239029$

$R^2 (\text{adj}) = 0.100670$

DW = 2.297231

F-stat = 1.927604 significant at 5% Prob (F-Statistic) = 0.222600

The findings of the regression analysis presented in Table 1 indicates that the Loan to Deposit Ratio (LDR) has a positive yet Statistically insignificant relationship with the return on shareholder's fund (RSF) of Deposit Money Banks (DMBs) in Nigeria, with a coefficient of ($\beta = 1.731004$, $p = 0.1224$). This suggests that a one-unit increase in the Loan to Deposit Ratio (LDR) results in an increase of 1.731004 units in the return on shareholder's fund (RSF), assuming all other factors remain constant. Additionally, the findings reveal that the Lending Rate (LR) also exhibits a positive but statistically insignificant relationship with the return on shareholder's fund (RSF) of DMBs in Nigeria, with a coefficient of ($\beta = 0.302337$, $p = 0.6704$). This indicates that a one-unit increase in the Lending Rate (LR) would lead to an increase of 0.302337 units in the return on shareholder's fund (RSF), again holding other factors constant. The coefficient of determination (R^2) suggests that approximately 24% of the variations in the financial performance of deposit money banks can be attributed to the Loan to Deposit Ratio (LDR) and Lending Rate (LR), while the remaining 76% is due to other unaccounted factors. Furthermore, the Durbin-Watson statistic of 2.297231 indicates that there is no significant autocorrelation present in the model, implying that around 76% of the variables affecting the return on shareholder's fund are not included in the model.

Table 2 Descriptive Statistics:

	RSF	LDR	LR
Mean	-0.38099	1.75581	1.11581
Median	-0.41515	1.77994	1.10464
Maximum	0.07842	1.90281	1.39199

Minimum	-1.37354	1.57471	0.90579
Skewness	-1.37045	-0.42997	0.22445
Kurtosis	5.52493	2.43788	2.41469
Jarqu-Bera	8.10126	0.61570	0.31739
Probability	0.01741	0.73502	0.85325

Source: Author's Computation, (2025)

Table 2 presents the descriptive statistics for the variables under consideration: Return on Shareholders' Fund (RSF), Loan to Deposit Ratio (LDR), and Lending Rate (LR). The RSF exhibits an average (mean) value of -0.38099, with a median of -0.41515. The highest recorded value stands at 0.07842, while the lowest is -1.37354. The skewness of -1.37045 indicates a distribution that is negatively skewed, and a kurtosis of 5.52493 suggests that the distribution is leptokurtic, meaning it is more peaked than a normal distribution. The Jarque-Bera (JB) test statistic is 8.10126, accompanied by a p-value of 0.01741, which implies that RSF does not conform to a normal distribution.

In terms of the Loan to Deposit Ratio (LDR), the mean is calculated at 1.75581, with a median slightly higher at 1.77994. The maximum and minimum values for LDR are 1.90281 and 1.57471, respectively. The skewness of -0.42997 indicates a mild leftward skew, while the kurtosis value of 2.43788 suggests a distribution that is flatter than the normal curve, classified as platykurtic. Nevertheless, the JB statistic of 0.61570 and its corresponding p-value of 0.73502 reveal that the distribution of LDR does not satisfy the conditions for normality.

Concerning the Lending Rate (LR), the average is recorded at 1.11581, while the median value is 1.10464. The variable exhibits a range from a low of 0.90579 to a high of 1.39199. The skewness value of 0.22445 indicates a slight positive skew, and the kurtosis value of 2.41469 suggests that the distribution is flatter than that of a normal curve, classifying it as platykurtic. The Jarque-Bera (JB) statistic is 0.31739, accompanied by a p-value of 0.85325, which signifies that the Lending Rate does not conform to a normal distribution.

Table3. Histogram-Normality Test

Source: Author's Computation, (2025)

It is generally expected that regression residuals follow a normal distribution. While normality is not a strict requirement for forecasting, it significantly simplifies the computation of prediction intervals. Therefore, a closer examination of the histogram test results in Table 5 reveals that the residuals are normally distributed, as indicated by the Jarque-Bera (JB) statistic. The JB p-value of 2.554194 exceeds the 0.05 threshold, leading to the acceptance of the null hypothesis of normality. This confirms that the residuals from the analysis are indeed normally distributed.

Table 4
Heteroskedasticity Test: ARCH

F-statistic	0.261935	Prob. F(1,11)	0.6189
Obs*R-squared	0.302360	Prob. Chi-Square(1)	0.5824

Source: Author's Computation, (2025)

Another important diagnostic is the heteroscedasticity ARCH test. Detecting heteroscedasticity is crucial in variance analysis, including regression modeling, because its presence can undermine the validity of statistical significance tests. These tests typically assume that modeling errors are consistent and uncorrelated, with constant variance over time. Although the ordinary least squares (OLS) estimator remains unbiased even in the presence of heteroscedasticity, its effectiveness is compromised due to the

underestimation of both covariance and actual variance.

In this context, the results shown in the table indicate that the observed R-squared value is 0.302360, and the associated probability from the chi-square test is 0.6189. Since this p-value exceeds the 5% significance level, it suggests the absence of heteroscedasticity in the regression model. This supports the efficiency and reliability of the regression results.

Considering the outcomes from the other diagnostic tests as well, it is evident that the regression residuals are homoscedastic (i.e., all variables have constant finite variance), normally distributed, and free from serial autocorrelation. Therefore, it can be concluded that the model is statistically valid.

V. DISCUSSIONS OF FINDINGS

Regression estimation techniques was employed to examine the effect of credit risk on the return on shareholder's fund of selected deposit money banks in Nigeria during the time period of 2010-2023. Based on the results of the analysis, Loan to Deposit Ratio (LDR) has positive effect on the return on shareholder's fund of deposit money banks (RSF) as shown by a regression coefficient of (LDR (1.731004 and a p- value of 0.1224) which is statistically insignificant related to (RSF). This is an indication that a percent point increase in loan to deposit ratio would lead to an increase in return on shareholder's fund of deposit money banks by 1.731004 percent.

Lending Rate (LR) also has positive effect on Return on shareholder's fund (RSF) of deposit money banks as shown by a regression coefficient of (LR (0.302337 and a p- value of 0.6704) which is statistically insignificant related to (RSF). This means that a percent point increase in Lending Rate brings about 0.302337 increased in return on shareholder's fund of deposit money banks. The findings of this study concurs with that of Bala, Auwal and Salisu (2022) who found a positive insignificant effect of credit risks on banks performance. But in contrary with the work of Odawo, Makokha and Namusonge (2019), and Kajola, Olabisi, Adedeji and Babatolu (2018) who reported that credit risk management has a significant influence on bank performance of deposit money banks in Nigeria.

VI. CONCLUSIONS

Based on the findings of this study, it can be concluded that insignificant relationship exists between financial performance of Deposit Money Banks (DMBs) and the loan to deposit ratio (LDR) as well as lending rate (LDR). Return on Shareholder of Fund (RSF) was adopted as proxy for financial performance of deposit money banks while loan to deposit ratio (LDR), lending rate (LR), were adopted as proxies for credit risk. Specifically the study concluded that, loan to deposit ratio (LDR (1.731004 and a p- value of 0.1224) current value is not statistically significant

with a negative influence on the financial performance of selected deposit money banks (DMBs) in Nigeria. The study also concluded that, lending rate (LR (0.302337 and a p- value of 0.6704) is not statistically significant but its current value positively influence the financial performance of deposit money banks (DMBs) in Nigeria. The study is limited to its scope that is studying; credit risk and its effect on the financial performance of deposit money banks in Nigeria from 2010 to 2023, the information used were gotten from annual financial report of the selected banks, and Central Bank of Nigeria Statistical Bulletin.

VII. RECOMMENDATIONS

Based on the findings and conclusion of the study, the following recommendations are made:

1. Nigerian deposit money banks should be more concerned in terms of monitoring and controlling of their loan to deposit ratio and lending rate with a view to improving their financial performance level.
2. In order to design an effective supervision system, banks need to establish a suitable business environment; operating under a sound credit granting process, maintaining an appropriate credit administration that involves monitoring, processing as well as enough controls over credit risk. Also, banks need to create a mechanism necessary for hedging against risks inherent in the financial market.

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