

Credit Risk and Financial Performance of Quoted Commercial Banks in Nigeria

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Abstract

This study determined the relationship between credit risks and the financial performance of quoted commercial banks in Nigeria. The credit risk variables studied were exchange rate, interest rate and liquidity rate. Financial performance was measured using return on assets. The research design employed in this study was the Ex-post facto research design. The population comprised the top 10 commercial banks in Nigeria as of December 2021 with updated financial statements up to 2021. The banks were ranked in terms of assets. The study covered a period of five years - 2017 to 2021. The study utilized secondary data that were extracted from the annual report and accounts of the commercial banks. Descriptive statistics were used to summarize the mean, median, standard deviation, maximum and minimum mean values of the study variables. Regression analysis was used to analyze the research hypotheses. The findings of the study revealed a significant relationship between liquidity ratios and financial performance, but no significant relationship between exchange rate, interest rate and financial performance. As the exchange rate and interest rate rose, the return on assets reduced. The study concluded that high-interest rates have a negative effect on bank performance. It was recommended that banks should mitigate credit risks by using appropriate risk management strategies through forwards, futures, swaps, options, and insurance as well as securitization techniques.

Keywords: Credit risk, Commercial banks, Financial institutions, Financial performance, Profitability

Introduction

Credit creation is one main income-generating activity for commercial banks, however, it involves huge risks both to the lender and the borrower. Credit is further defined as a process whereby possession of goods or services is allowed without spot payment upon a contractual agreement for later payment. Timely identification of potential credit default is important as high default rates lead to decreased cash flows, lower liquidity levels and financial distress. In contrast, lower credit exposure means an optimal debtor level with reduced chances of bad debts and therefore, financial health. According to Krahn (2013), in today's business environment risk management and improvement of cash flows are becoming very challenging. According to Ndyagyenda (2020), credit risk refers to the risk that a borrower will default on any type of debt by failing to make payments which it is obliged to do. The risk is primarily that of a lender and includes lost principal and interest, disruption to cash flows, and increased collection costs. The loss may be complete or partial and can arise in several circumstances. Credit risk management is very important for banks as it gives an idea of how much exposure they have with counterparties and how much counterparty exposure is there against the contracts. It is important to assess the counterparty risk and have some mitigation strategies in place. Credit risk helps banks adjust their capital. Credit risk leads to market risk as it reduces the liquidity of instruments and also to systemic risk. Thus, managers are advised to employ a modern risk management technique to

diversify the earning activity of the bank.

Credit risk is by far the most significant risk faced by commercial banks all over the world and the success of their businesses depends on accurate measurement and efficient management of this risk to a greater extent than any other business risk (Gieseche, 2018). It is a risk of financial loss that arises when a borrower or counterparty fails to honour commitments under an agreement and any such failure has an adverse effect on the financial performance of deposit money banks in Nigeria. Granting credit is one of the main sources of income for commercial banks and also a source of credit and future interest on loans and deposits. All these factors stand as constraints to lending.

The risk of a trading partner not fulfilling his or her obligation as per the contract on the due date or at any time can greatly jeopardize the smooth functioning of the bank's business. On the other hand, a bank with high credit risk has high a bankruptcy risk that puts depositors in jeopardy. In a bid to survive and generate adequate profit levels in this highly competitive environment, banks have tended to take excessive risks by reducing some of the rules guiding credit issuance. The increasing tendency for greater risk-taking has resulted in the insolvency and failure of a large number of banks. The major cause of serious banking problems continues to be directly related to low credit standards for borrowers and counterparties, poor portfolio management and lack of attention to changes in economic or other circumstances that can lead to deterioration in the credit standing of banks (Haruna, 2019).

The microeconomic risk factors are worsening the risks faced by banks. These factors are interest rate risks, exchange rate and liquidity risks. Taken together or individually, these risks can impact market activities negatively. In studying currency crashes from the financial crisis, Brunnermeier (2009) highlights the importance of liquidity in the forex market. A decline in forex liquidity impacts carry traders and triggers liquidity spirals. Carry trades are investments where investors borrow from low-interest-rate capital markets and invest in high-yield markets capitalizing on the interest rate differential (Avery, 2015). However, where initial investments were made at higher interest rates, only for the interest rate to be lowered later, more often than not, it leads to losses. Credit risks are not just about bank borrowers, it also affects banks borrowing to do business. Interest rates, exchange rates and liquidity all have effects on the financial performance of commercial banks.

Statement of the Problem

Banks are at the core of the financial system and credit risk is the main risk that they face. For commercial banks, identifying credit risks and managing them is essential for minimizing losses and exposure to bad debts (Avery, 2015). However, risks still arise that often lead the bank into bad debts. Loans expose banks to the greatest level of risk. As averred by Yinka, et al (2015), many banks that collapsed in Nigeria in the late 1990s and the preceding years were a result of poor management of facilities reflected in the high levels of non-performing loans. Some of these risks are actually beyond the control of banks, nonetheless, require management. The identified risks arising from interest rate hikes, fluctuations in the exchange rate and inconsistencies of the central bank in managing the exchange rate are exposing banks to another level of risk (Haruna, 2019). This is exacerbated by liquidity issues that banks have to deal with due to cash crunch and monetary policies. In effect, banks are facing heightened risks that are not just affecting operations but can impact performance as well. Inadequate management of credit risks will lead to increased defaults, soured relationships with bank customers and lowered profitability. Looking at the emphasis that is laid on credit risk management by commercial banks in recent times, the level of contribution of this factor to financial performance has not been analyzed properly. In the face of rising interest rates, exchange rates and liquidity squeezes, this research intends to study the relationship between credit risks and banks' profitability.

Objectives of the Study

The main objective of this study is to examine the relationship between credit risks and the financial performance of quoted deposit money banks in Nigeria. Specifically, the study sought to:

- i. determine the relationship between liquidity risks and financial performance of quoted deposit money banks in Nigeria.
- ii. determine the relationship between exchange rate risks and the financial performance of quoted deposit money banks in Nigeria.
- iii. determine the relationship between interest rate risks and the financial performance of quoted deposit money banks in Nigeria.

Research Questions

The following research questions were stated for the study:

- i. What is the relationship between liquidity risks and the financial performance of quoted deposit money banks in Nigeria?
- ii. What is the relationship between exchange rate risks and the financial performance of quoted deposit money banks in Nigeria?
- iii. What is the relationship between interest rate risks and the financial performance of quoted deposit money banks in Nigeria?

Research Hypotheses

The following hypotheses guided the study:

Ho1: there is no significant relationship between liquidity risks and the financial performance of quoted deposit money banks in Nigeria.

Ho2: there is no significant relationship between exchange rate risks and the financial performance of quoted deposit money banks in Nigeria

Ho3: there is no significant relationship between interest rate risks and the financial performance of quoted deposit money banks in Nigeria.

Literature Review

Concept of Financial Performance in Banks

Pandey (2008) in Abdulkadir (2017) defines financial performance as a subjective measure of how well a firm uses asset from its primary mode of business to generate revenues. He further says that the term can also be used as a general measure of a firm's overall financial health position over a given period, and can be used to compare similar firms across the same industry or to compare industries or sectors in aggregation. Evaluating the performance of firms is critical to ascertain whether the business is viable. A key performance measure used in modern financial management is the financial ratio analysis. The type of financial analysis varies according to the specific interests of the party involved.

Significant changes have occurred in the financial sector in Nigeria. This has led to heightened interest in the financial performance analysis of commercial banks. Casu (2016) observes that performance analysis is an important tool used by various agents operating either internally to the bank or who form part of the bank's external operating environment. This is why investors in shares and bonds issued by banks consider the investment outcome before forming an opinion about the ability of its management. A good means of measuring the performance of banks and other business organizations is financial analysis. Financial analysis is the process of identifying the financial strengths and weaknesses of a firm by properly establishing a relationship between the items of the balance sheet, and the profit and loss account (Abdulkadir, 2017). The

determinant of a firm's financial performance from the view of investors is measured by how better off the variables of performance or performance indicators such as return on asset, ROA, return on equity ROE, net profit margin, NPM, earnings per share, EPS etc. are met at the end of a period than it was at the beginning. Ratios are derived from financial statements, mainly, the balance sheet and income statement, or using data on stock market prices (Berger & Patti, 2002). These ratios indicate whether the firm is achieving the owners' objectives of making them wealthier and can be used to compare a firm's ratios with other firms or to find trends of performance over time.

Concept of Credit Risk

Risk in general terms refers to variability around the expected value. Ama (2009) considers risk as being synonymous with uncertainty. Chrouchy et al. (2006) define risk as the volatility of returns that lead to unexpected losses, with higher volatility indicating higher risks. According to Ahsan (2016), credit risk is the risk that counterparty would fail to honour its payment obligations to the bank, leading to financial loss. Credit risk is the current and prospective risk to earnings or capital arising from an obligor's failure to meet the terms of any contract with the bank or otherwise to perform as agreed. Credit risk is found in all activities in which success depends on counterparty, issuers, or borrower performance. It arises any time bank funds are extended, committed, invested, or otherwise exposed through actual or implied contractual agreements, whether reflected on or off the balance sheet (Kargi, 2011).

Credit events usually include events such as bankruptcy, failure to pay a due obligation, repudiation/moratorium or credit rating change and restructure. Basel Committee on Banking Supervision-BCBS (1999) defines credit risk as the potential that a bank borrower or counterparty will fail to meet its obligations under agreed terms. The report identified credit risks to include interest rate risks, exchange risks and liquidity-related risks.

Liquidity Risk and Financial Performance

Corporate liquidity connotes firms' ability to weather the storm when the need arises by possessing the cash and near cash equivalents that could meet up with its challenges, especially the short-term obligations. Liquidity is very critical for the survival of any organization especially, financial institutions whose primary assignment requires keeping deposits. Agbada & Osuji (2013) found that as uncertainty made funding sources evaporate, many banks quickly found themselves short on cash to cover their obligations as they become due. In extreme cases, in the interest of broader financial stability, substantial amounts of liquidity were provided by authorities in Nigeria as bailout funds. The crisis drove home the importance of liquidity to the proper functioning of financial markets and the banking sector.

Banks' liquidity is simply the ability of the bank to maintain sufficient funds to pay for its maturing obligations. It is the bank's ability to immediately meet cash, cheques, and other withdrawal obligations as well as new loan demands, while also abiding by existing reserve requirements. Commenting further, Elijah, Jaya & Jacklinne (2017) state that liquidity management, therefore, involves the strategic supply or withdrawal from the market or circulation, the amount of liquidity consistent with a desired level of short-term reserve money without distorting the profit-making ability and operations of the bank. It relies on the daily assessment of the liquidity conditions in the banking system, to determine its liquidity needs and thus the volume of liquidity to allot or withdraw from the market.

Many scholars have written much on the relationship between liquidity management and banks' performance. Lamberg & Valming (2009) suggest that the adaptation of liquidity strategies does not have a significant impact on ROA, only increased use of liquidity forecasting and short-term financing during a financial crisis has a positive impact on ROA. Moreover, it was found that the

importance of key ratios, which monitors companies' liquidity has not changed between the studied time points. Li (2007) found that the result for liquidity on profitability is mixed and not significant, indicating that the conclusion about the impact of liquidity remains questionable and further research is needed.

Exchange Rate and Financial Performance

The exchange rate measures the value of one country's currency in terms of other currencies. Exchange rate fluctuations have been of big concern to policymakers, regulators, investors and financial analysts since the abolishment of the fixed exchange rate system of Bretton Woods in 1971. This system is replaced by different versions of floating exchange rate systems in which the price of a currency is determined mainly by the supply and demand of that currency. Given the frequent changes in supply and demand for currencies, which are influenced by numerous economic factors, this new system is responsible for exchange rate fluctuations, especially in developing economies, and Nigeria is not an exception.

A common definition of exchange rate risk relates to the effect of unexpected exchange rate changes on the value of the firm (Madura, 1989 in Papaioannou, 2006). In particular, it is defined as the possible direct loss (as a result of an unhedged exposure) or indirect loss in the firm's cash flows, assets and liabilities, net profit and, in turn, its stock market value from an exchange rate move. To manage the exchange rate risk inherent in multinational firms' operations, a firm needs to determine the specific type of current risk exposure, the hedging strategy and the available instruments to deal with these currency risks. Exchange rate risk management is an integral part of every firm's decisions about foreign currency exposure (Allayannis, Ihrig & Weston, 2001). Currency risk hedging strategies entail eliminating or reducing this risk and require an understanding of both the ways that the exchange rate risk could affect the operations of economic agents and techniques to deal with the consequent risk implications (Barton, Shenkir & Walker, 2002).

Banking operations have significant implications for credit to the domestic economy, internal reserves, intermediation in the investment process and ultimately economic growth of countries. Banks are one of the leading actors in the foreign exchange market; they engage in import and export activities, the transactions of which must be paid for in foreign currencies. Banks also participate in foreign exchange markets as intermediaries for business organizations that operate internationally (Segal, 2021).

The banks' financial performance which refers to the ability to leverage operational and investment decisions and strategies to achieve profitability and financial stability, is largely affected by exchange rate fluctuations. Fluctuations in currency exchange rates, according to Segal (2021) could generate significant gains or losses, which in turn may produce distorted financial results and give the wrong impression of the financial position of the institution concerned. Due to its serious implications for banking sector stability, measuring the effect of foreign exchange exposure on the financial performance of deposit money banks has long been a core interest of academics, professionals, bankers and policymakers.

Interest Rate Risk and Financial Performance

The probability that fluctuating interest rates will result in significant appreciation or depreciation of the value of and the return from the bank's assets is known as interest rate risk (Folpmers, 2022). Credit risk and interest rate risk are often perceived by banks as worlds apart, thanks in part to the well-established risk taxonomy of the Basel Committee on Banking Supervision (BCBS). However, in practice, that is certainly not the case. Indeed, credit risk is affected by shifts in central bank policies such as interest-rate increases (New York Institute of Finance, 2022). Folpmers (2022) argues that risk-taking behaviour is incentivized during a low-interest-rate

period, partly because banks' net interest income is weakened by a smaller spread environment. However, shifts toward higher interest rates, often lead to credit risks, as borrowers tend to default and grumble under higher interest rates.

Shifts in interest rates affect the loan portfolio in multiple ways. During a period of low rates, interest rate spreads tend to decrease. Lower spreads mean less interest income for banks, and typically lead to an increase in banks' risk appetite, following a "hunt-for-yield" incentive. Consequently, during periods of low-interest rates, lending standards tend to be relaxed, increasing the likelihood of credit risk. Newly-created credit portfolios will then be riskier than the existing portfolios that originated during a period of stricter lending standards (Folpmers, 2022). As the rate rises, the repayment also rises for borrowers. Thus, when loan default sets in, sparking credit risk crises for banks.

Theoretical Framework

This study is underpinned by Anticipated Income Theory by Prochanow (1949). The anticipated income theory was propounded by Prochanow in 1949 at the end of world war 11 as a result of the fact that the compositions of the earnings assets of commercial banks began to change as resources shifted from the government to the private sector. According to Prochanow (1949), anticipated income theory argues that a bank can maintain its liquidity if loan repayments are scheduled based on the anticipated income of the borrower rather than the use made of the funds of the collateral offered. This theory also suggests that banks should rely on debtors' income and its coverage is determined based on inclusive cash-flow projections which ordinarily provide a reliable indication of the quality of the loan being financed. Hence, the future cash flows of the borrowers, rather than the nature of particular transactions being financed, assure the self-liquidating character of a loan because it will determine a borrower's overall ability to meet interest and principal payments as they fall due. If the debtors' anticipated income is estimated correctly, the bank will have a flow of funds that can be used to meet the depositor's claims and/or other loan demands.

The anticipated income theory serves as the theoretical underpinning of this study since it incorporates credit management policies that analyze borrowers' creditworthiness. It also gives the banks criteria for evaluating the potential of a borrower for successful timely repayment of a loan which ultimately affects the interest income and can be used to influence the liquidity positions of banks. Anticipated income theory holds the view that if credit were adequately managed, interest income will be influenced, which will affect the investment opportunities and ultimately increase the liquidity position of the firm by ensuring the day-to-day operation of the firm and ultimately increase the organizational performance.

Empirical Review

Yinka, Taofeek, Abimbola & Olusegun (2015) examined the role of credit risk management in the value creation process among loan and advance loss provision, total loan and advances, nonperforming loans and total asset on return on equity and return on asset. The panel data come from 10 commercial banks listed on Nigeria Exchange Group plc. between 2006 and 2010. The result revealed that credit risk management has a significant effect on the financial performance of commercial banks and recommended that maintaining a minimal level of non-performing loans vis-à-vis provision for loans and advances will enhance financial performance through its positive effect on return on equity.

Adeleke, Ibrahim & Sunday (2016) investigated the effect of credit risk on the performance of Nigerian Banks. An ex-post facto research design was adopted by the study and secondary data from the annual reports of five banks covering the period from 2008 to 2014 was used. A purposive sampling technique was employed in the selection of the five banks from the existing

twenty-one commercial banks. Data collected were analysed using the panel least square method and the result revealed that DLA_TD, LLP/NPL and NPL/LA significantly influenced banks' performance negatively. The study, therefore, concluded that credit risk has a significant negative influence on commercial banks' profitability. The study thus recommended, amongst others, that banks in Nigeria should enhance their capacity in credit analysis and loan administration to reduce the loss on non-performing loans which raises their expenses and consequently leads to a reduction in financial performance.

Maxwell & Peter (2016) investigated the impact of credit risk management on the performance of deposit money banks in Nigeria. The findings demonstrated succinctly that the selected credit risk management indicators under study significantly impacted the performance of deposit money banks measured as return on equity, return on total assets, and return on shareholders' fund respectively. However, the findings reported no evidence of a significant granger causality relationship between the various credit risk management indicators and the various measures of performance except for a unidirectional granger causality relationship from ROE to RNPD and from ROTA to RNPS respectively. Based on the foregoing, it was recommended that given the observed significant relation between credit risk management and performance, deposit money banks in Nigeria should always pay particular attention to their credit risk management policies to significantly improve the performance of these banks.

Muriithi, Waweru & Muturi (2016) assessed the effect of credit risk on the financial performance of commercial banks in Kenya. The study covered the period between the years 2005 and 2014. Credit risk was measured by capital to risk-weighted assets, asset quality, loan loss provision, loan and advance ratios and financial performance by ROE. The study used the balance sheet components and financial ratios for 43 commercial banks in Kenya registered by the year 2014. Panel data techniques of fixed effects estimation and generalized method of moments (GMM) were used to purge time-invariant unobserved firm-specific effects and to mitigate potential endogeneity problems. The pairwise correlations between the variables were carried out. F- test was used to determine the significance of the regression while the coefficient of determination, within and between R², was used to determine how much variation in the dependent variable is explained by independent variables. From the results, credit risk has a negative and significant relationship with bank profitability. Poor asset quality or high nonperforming loans to the total asset is related to poor bank performance both in the short run and long run. Based on the study findings, it was recommended that the management of commercial banks in Kenya should enhance their capacity in credit analysis and loan administration and that clear credit policies and lending guidelines should be established.

Ghenimi, Chaibi & Omri (2017) used a sample of 49 banks operating in the MENA region over the period 2006 to 2013 to analyze the relationship between credit risk and liquidity risk and its impact on bank stability. The results showed that credit risk and liquidity risk do not have an economically meaningful reciprocal contemporaneous or time-lagged relationship. However, both risks separately influence bank stability and their interaction contributes to bank instability. These findings provide bank managers with more understanding of bank risk and serve as an underpinning for recent regulatory efforts aimed at strengthening the joint risk management of liquidity and credit risks.

Haruna, Aruwa & Olasunkanmi (2020) studied Credit risk and financial performance of quoted deposit money banks. This study adopted an expo-facto research design. The population of the study consisted of the twenty- three (23) quoted deposit money banks (with an international authorisation) that were operational as of December 31, 2019. Census sampling techniques were used to select all the sampled frames for the study. Secondary data were extracted from annual reports and accounts of these banks. Multiple regression techniques were used in analyzing the

combination of time series and cross-sectional data. The findings, among others, indicated that the ratio of non-performing loans to return on asset, liquidity rate, exchange rate and interest rate have a significant positive effect on the return on asset (financial performance) of quoted deposit money banks in Nigeria. The study recommended among others that, the management of quoted deposit money banks in Nigeria should establish sound and competent credit risk management which is expected to agree with the best practices in credit risk management and adhere to the policies of the relevant authorities in Nigeria.

Research Gap

Many authors as reviewed above have conducted research on this same topic but few are in Nigeria and all those who conducted this research work looked at it from the macro view, that is, they conducted the research and the analysis focused on the common coefficient by concentrating on few banks, not all the banks. This study will add to the body of knowledge by studying commercial banks in Nigeria and the effect of credit risk on financial performance from the micro aspect.

Methodology

The research design employed in this study is the Ex-post facto research design, to establish the effect of credit risks on profitability. It is treated as ex-post facto research since it relied on data from past events. This is appropriate because ex-post facto research aims at measuring and establishing the relationship between one variable and another or the impact of one variable on another, in which the variables involved are not manipulated by the researcher. Ex-post facto research determines the cause-effect relationship among variables. The population of this study covers all twenty-four (24) commercial banks in all six geo-political zones in Nigeria. These Banks met the capitalization requirements as specified by the Central Bank of Nigeria (CBN). Purposive sampling was used to sample the top 10 commercial banks in Nigeria as of December 2021 with updated financial statements up to 2021. The banks were ranked in terms of assets and market capitalization. This includes Access bank, Zenith bank, Guaranty Trust Holding Company, First Bank, EcoBank, United bank for Africa, Union bank and Fidelity bank, first city monument bank, and sterling bank.

The study covers a period of five years, that is, from 2017 to 2021. The data utilized for analysis were collected from the banks' audited and published annual financial-year-end reports of the selected commercial banks between 2017-2021. The financial statements (disclosure) prepared by the Nigeria commercial banks are standardized according to the requirements of the law of the land and regulated by standards issued by the Central Bank of Nigeria. Based on this guideline, commercial banks in Nigeria follow the same accounting standards which make it possible for direct comparison across banks and over time. The data comprise ten (10) commercial banks, taking into account the banks'-specific characteristics of the sample. The independent variable of this study is Credit risks measured using interest rate, exchange rate and liquidity ratio. The dependent variable is financial performance. The financial performance is proxied as return on asset and measured as profit after tax/total asset. Descriptive statistics were used to summarize the mean, median, standard deviation, maximum and minimum mean values of the study variables. Regression analysis was used to analyze the research hypotheses.

Model Specification

Multiple panel regression equation is econometrically expressed as follows:

$$ROA_{it} = \beta_0 + \beta_1 LIR + \beta_2 EXR + \beta_3 INTR + e_{it}$$

Where;

ROA = Return on asset

LIR = Ratio of liquidity- measured as the ratio of current asset to current liability
 EXR = Ratio of exchange rate
 INTR = Interest rate ratio
 β_0 = Intercept or regression constant o
 β = Coefficients to be estimated for firm β in period t it
 $\beta_1 - \beta_3$ = Regression Coefficients 1,2 and 3
 e = Error Term

Analysis and Results

Table 1: Cross Tabulation of Descriptive Analysis of Variables

	N	Minimum	Maximum	Mean	Std. Error	Std. Deviation
ROA	85	12.00	49.00	31.3412	.58231	5.36868
LIR	85	20.00	70.00	42.8706	1.49320	13.76658
EXR	85	12.00	70.00	35.1294	1.23145	11.35340
INTR	85	12.00	49.00	31.0941	.61234	5.64553
Valid (listwise)	N 85					

Table 1 provides the summary of the descriptive analysis of the variables used in the study. With minimum and maximum values of 12 and 49 respectively, return on asset (ROA) has a mean value of 31.34 and a standard deviation of 5.36. This indicates that there is minimum dispersion from the mean and that the values were close to each other. The result also shows that the liquidity ratio, exchange rate and interest rate, all have standard deviation values less than the mean. This shows that the dispersions from the mean are minimal and the values all cluster around the mean. Expectedly, most banks have similar or very close interest rates, exchange rates and liquidity ratios.

Table 2: Summary of Correlation Matrix for dependent and independent variables

		ROA	LIR	EXR	INTR
ROA	Pearson Correlation	1			
	Sig. (2-tailed)				
	N	85			
LIR	Pearson Correlation	.111	1		
	Sig. (2-tailed)	.314			
	N	85	85		
EXR	Pearson Correlation	.173	.244*	1	
	Sig. (2-tailed)	.113	.025		
	N	85	85	85	
INTR	Pearson Correlation	-.164	-.103	-.060	1

Sig. (2-tailed)	.133	.350	.583	
N	85	85	85	85

*. Correlation is significant at the 0.05 level (2-tailed).

Table 2 gives the summary of the correlation matrix for the variables. The result of the analysis reveals that the correlation index between the liquidity ratio and return on asset (ROA) is .111, indicating a very weak positive relationship. With a correlation index of .173, exchange rate risk has a weak positive relationship with ROA. However, the correlation index between interest rate and ROA is -.164, indicating a negative relationship between interest rate and return on asset.

Multicollinearity Test

The Variance Inflation Factor (VIF) approach was adopted to test for multicollinearity among the independent variables. The suggested cut-off value for VIF, according to Gujarati (2003) and Rumsey (2007) is 10.0. As shown in Table 3, the VIF of the three explanatory variables and one control variable ranges between 1.116 and 1.327; while the average is 1.268. This shows that there is an absence of multicollinearity among the variables.

Table 3: Report of multicollinearity test

Model	Model	Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	t	Sig.
1	1 (Constant)	29.492	1.915		15.404	.000
	LIR	-.043	.043	.111	2.014	.000
	R Squared	.012				
	Adjusted R2	.000				
	Fstat	6.014 (p.000)				
	F SIZE	.763	1.311			

Research Hypotheses

Ho₁: there is no significant relationship between liquidity risks and financial performance of quoted deposit money banks in Nigeria.

Table 3: Summary of regression test for significant relationship between liquidity risks and financial performance of quoted deposit money banks

Model	Model	Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	t	Sig.
1	(Constant)	29.492	1.915		15.404	.000
	LIR	-.043	.043	.111	2.014	.000
	R Squared	.012				
	Adjusted R2	.000				
	Fstat	6.014 (p.000)				

Table 3 shows that the coefficient of beta is $-.043$, indicating that as liquidity risks rise, return on assets falls. The result is significant at $p=.000$. This indicates that the liquidity ratio can influence the performance of banks if not well managed. Thus, there is a significant relationship between liquidity risks and the financial performance of quoted deposit money banks in Nigeria.

Ho2: there is no significant relationship between exchange rate risks and the financial performance of quoted deposit money banks in Nigeria

Table 4: Summary of regression test for a significant relationship between exchange rate risks and financial performance of quoted deposit money banks

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	t	Sig.
1	(Constant)	28.463	1.886		15.090	.000
	EXR	.082	.051	.173	1.603	.113
R Squared		.027				
Adjusted R2		.015				
Fstat		2.308 (p.113)				

Table 4 shows that the value of the beta coefficient is $.082$, indicating that every unit rise in exchange rate increases the return on assets marginally by 0.082 . The result also shows that the adjusted R2 value is $.015$, indicating that 1.5% changes in ROA are accountable to exchange rate increases. The result shows that the F-stat is 2.308 , not significant at $p=.113$. Thus, there is no significant relationship between exchange rate risks and the financial performance of quoted deposit money banks in Nigeria.

Ho3: there is no significant relationship between interest rate risks and the financial performance of quoted deposit money banks in Nigeria.

Table 5: Summary of regression test for significant relationship between interest rate risks and financial performance of quoted deposit money banks

Model		Unstandardized		Standardized		
		B	Std. Error	Beta	t	Sig.
1	(Constant)	36.204	3.253		11.129	.000
	INTR	-.156	.103	-.164	-1.519	.133
R Squared		.027				
Adjusted R2		.015				
Fstat		1.519 (p.133)				

Table 5 shows that the coefficient of beta is $-.156$, indicating that as the interest rate rises, the return on assets falls. The result is not significant at $p=.133$.

This indicates that the ineptest rate can influence the performance of banks if not well managed. Since the p-value is greater than the alpha level of $.05$, the result is not significant. Thus, there is no significant relationship between interest rates and the financial performance of quoted deposit money banks in Nigeria.

Discussion of Findings

The result of the analysis shows a weak positive relationship between liquidity risk and return on assets. The hypothesis test indicates that there is a significant relationship between liquidity risks and the financial performance of quoted deposit money banks in Nigeria. This finding is corroborated by Yinka, et al (2015) whose results revealed that credit risk management has a significant effect on the financial performance of commercial banks. This finding is further supported by Haruna, et al (2020) who found that liquidity has a significant effect on the financial performance of quoted deposit money banks in Nigeria.

The result of the analysis shows that there is a weak positive relationship between exchange rate risk and return on assets. The related hypothesis test indicates no significant relationship between exchange rate risks and the financial performance of quoted deposit money banks in Nigeria. This finding is in line with Muriithi, et al (2016) who assessed the effect of credit risk on the financial performance of commercial banks in Kenya. They found that credit risk has a negative and significant relationship with bank profitability. The result is further supported by Ghenimi, Chaibi & Omri (2017) who found that credit risk and liquidity risk do not have an economically meaningful reciprocal contemporaneous or time-lagged relationship.

Findings from the analysis indicate a negative relationship between interest rate and ROA and a corresponding no significant relationship test of hypothesis between interest rate and financial performance of quoted deposit money banks in Nigeria. As interest goes up, borrowing is likely to reduce, impacting negatively on return on assets. These findings agree with that of Adeleke, Ibrahim & Sunday (2016) that credit risk has a significant negative influence on commercial banks' profitability. Maxwell & Peter (2016) also found no evidence of interest rates impacting positively on the profitability of firms.

Conclusion

This study examined the effect of credit risk on the financial performance of quoted commercial banks in Nigeria. Based on its findings, it is concluded that high-interest rates have a negative effect on bank performance. Those who can take up such loans may also find it very difficult to repay because of the exorbitant interest rates. A high liquidity ratio will hurt bank performance in the short term and long term. Furthermore, a higher exchange rate, though increases bank

profitability, hurts banks' performance in the long term.

Recommendations

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

1. Commercial banks should mitigate the credit risks by using appropriate risk management strategies through forwards, futures, swaps, options, and insurance as well as securitization techniques
2. The character and financial ratings of borrowers must be properly scrutinized and a careful evaluation of the customer's creditworthiness be carried out before extending loan facilities to potential borrowers to avoid giving out loans that will not be repaid.
3. Bank managers should put more effort to credit risk management, especially to control the non-performing loan (NPL) by extensively evaluating their credit customer's capacity to pay promptly both the principal and the interest before extending the facility.
4. Bank managers should put more effort to credit risk management, especially to control the non-performing loan (NPL) by extensively evaluating their credit customers' capacity to pay promptly both the principal and the interest before extending the facility.
5. Commercial banks should maintain a minimum level of non-performing loans vis-a-vis the provision for loans and advances.
6. The regulatory authority should pay more attention to banks' interest rates in order not to violate relevant provisions of the Bank and other Financial Institutions Act.
7. The regulatory authorities should pay more attention to fluctuations in the exchange rate and its effect on the financial performance of deposit money banks in Nigeria to reduce the effect of the exchange rate on the financial performance of the banks in Nigeria.

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