Credit Risk and Financial Performance of Deposit Money Banks in Nigeria: Moderating Role of Risk Management Committee

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ABSTRACT: *The global financial crisis of 2008 and the economic dislocation that followed the emergence of COVID 19 adversely affected financial institutions leading to debt crisis in the Nigerian banking sector. Despite the risk management framework within the banking sector, credit still remains a crucial factor in comparison to other driving factors in the bank, due to its attendant risk and the effect on the economy. This study examined the risk management committee's role on the effect of credit risk on financial performance of 13 deposit money banks in Nigeria from 2012 to 2021. Finance distress theory was adopted for the study. The study adopted census sampling technique. Regression model used to analyze the panel data. The multiple regression result revealed that credit risk has a negative and significant effect on financial performance. The moderating role of risk management committee revealed that credit risk has a positive and significant impact on financial performance of deposit money banks in Nigeria. The study recommends that DMBs in Nigeria should continue improving on their risk management policies to enable good credit facility procedures to borrowers, also the board of directors should actively participate in managing the credit facilities to customers.*

KEYWORDS: credit risk, financial performance, deposit money banks, Nigeria, risk management

INTRODUCTION

Banks and other financial institutions are exposed to variety of risks chiefly among them is credit risk which is more severe than the other risks the banks experience. Nwude and Okeke (2018) stated that banks use customers deposits to generate credit for their borrowers, which in fact is a revenue generating activity for banks. This credit creation process exposes the banks to high default risk which might lead to financial distress. According to Bhattarai, (2020) risk is seen as a probability or threat of damage, liability, loss, or any other negative occurrence that is caused by external or internal vulnerabilities, and that may be avoided through preemptive action.

The financial health of the banks largely depends on the possession of good credit risk management dynamics. Banks may have a keen awareness of the need for identification, measurement, monitoring and controlling credit risk as well as to determine that they hold adequate capital against these risks and that they are adequately compensated for risks incurred (Bhattarai, 2016).

Credit risk is faced by commercial banks when borrowers default in honoring debt obligations on maturity date which can lead banks to be in financial crisis if it is not properly managed (Kinyua, 2017). This is because, the higher the credit risk of a bank, the more the likelihood of the bank being distressed. As such, credit remains a crucial factor compared to other driving factors due to its attendant risk and its effect on the bank's financial performance. Therefore, financial performance is the ability of firm to make profit for all business activities. Safii, (2019) indicated that financial performance is one instrument to assess the success or failure of a bank. Thus, a bank can be successful if it can achieve the set objectives of its banking to the maximum. Furthermore, the survival of banks can be maintained, if they are willing to mitigate the credit risk with various precautionary measures.

Credit risk arises from non-performance by a borrower from the bank, this may arise from either as a result of inability or an unwillingness to perform in the pre-commitment contracted manner Bizuayehu (2015). However, an effective risk management is crucial for banks. Malik and Shafie (2021) argued that the need for Corporate Governance such as risk management committee (RMC) is crucial in that it places explicit emphasis on managing risk activities due to the growth in market risk intensity which also often affects other sectors of the economy. In Nigeria, the Central Bank of Nigeria code on Corporate Governance (2014) clearly states the roles and responsibilities of the bank's board toward risk management framework. The code highlighted for the Board to have a system which effectively identifies, measures, monitors, controls and manages risks. This shows how important risk management committee is to the banks.

The motivation for this study is due to the economic crisis that occurred in 2020 as a result of the COVID 19 outbreak and the global economic dislocation aftermath which has negatively affected financial institutions and other sectors of the economy. This further necessitated the Central bank of Nigeria (CBN) to design several policies and frameworks to guide the banks in Nigeria against the repeat of the 2008 global financial and economic meltdown through the banking reforms. The 2020 CBN reform immediately brought the idea that commercial banks should hold substantial amount of capital that would make them survive when such economic crisis occur again and ensure strict compliance with CBN credit risk management system.

However, the 2018 CBN forensic audit report that led to the collapse of Skye Banks Plc has continued to raise concern to stakeholders in Nigeria (CBN, 2018). Furthermore, the merger of Access bank Plc and Diamond Bank Plc in 2019 as result of liquidity challenge which arose due to poor credit management. In 2021, the first bank Plc was faced with the challenge of non-performing loans which further negatively affected market shares of the bank has further necessitated the need for examining the mediating role of risk management committee on the relationship between credit risk and financial performance of DMBs in Nigeria.

The Russia-Ukraine crisis has affected the global economy of which Nigeria was not left out as the increase in crude oil and gas prices brought about a corresponding increase in the pump price of petroleum products locally and this gave rise to capital outflows, decreased economic activities and dampened returns on investment particularly in the oil sector which has indirectly affected the banking

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sector in terms of credit facility. In addition, the loan to the oil and gas sector is about 30% of the total risk assets in the banking sector as at 2019 (Central Bank of Nigeria Bulletin, 2019).

The asset quality of commercial banks in Nigeria was adversely affected and this was attributed to high rate of foreign exchange, and high cost of power as a result of global crude oil downturn and the non-performing loan ratio of banks which jumped to 5.3% in April 2022 from 4.84% in February 2022 (CBN report, 2022). However, Non-performing loans (NPLs) which arise due to loan default (credit risk), is the major challenge faced by DMB's in Nigeria (CBN, 2020). In addition, many financial corporations such as Skye bank Nigeria Plc, and Diamond Bank Nigeria Plc, among others have collapsed and some banks are facing near collapse because of inappropriate or faulty assessment of loans to firms and people with bad and unreliable source of income.

The economic crisis in Nigeria has increased the non-performing loans and its adverse effect on bank revenue is a source of concern to stakeholders like the shareholders, management of the banks, customers and the policy makers. However, past empirical studies have tried to examine this adverse effect of credit risk on banks financial performance in Nigeria. Al-Husainy and Jadah (2021) Also, Bhattarai (2020), Inegbedion et al., (2020), Nwosu, Okedigba and Anih (2020), John and Okika, (2019)Afolabi et al., (2020) found that regression model results showed that non-performing loan ratio (NPLR) has significant negative effect on financial performance. While, credit to deposit ratio (CDR) has no significant and negative effect on financial performance. On the other hand, Nwude and Okeke (2018)study revealed that credit risk has a positive and significant effect on the return on asset and return on equity of the deposit money banks in Nigeria. On the contrary, the study of Siriba, (2020), John and Okika, (2019) and Afolabi et al., (2020) found that non-performing loans has a negative and no significant impact on bank profitability.

Furthermore, the studies of Fakhrunnas and Imron, (2019) and Bogale, (2019) reported that credit risk has negatively impacted on performance while Safii's (2019) findings showed a positive and insignificant impact on bank profitability. Additionally the studies of Tam and Linh, (2020), and Ajao and Oseyomon (2019) revealed that credit risk is significant and positively impacted on financial performance. On the other hand, Ekinci and Poyraz (2019), and Mudanya and Muturi (2018) established that credit risk (NPL/TL) is negative and statistically significant on profitability. However, based on the divergent and inconsistent outcomes on the relationship between credit risk and performance, it would be helpful in finding out the central point of credit risk system in Nigeria for the recent years, based on the combined interaction between risk management committee and credit risk on financial performance. Therefore, it is desired to bridge this gap in knowledge which formed the basis of this empirical study.

In the light of the foregoing, this study intends to address the degree of new entry threats faced by moderating credit risk and financial performance with risk management committee. This study will address the existing literature gap, especially in Nigeria and will provide a link between theories and practice. The result of the study will certainly support the position of past empirical research. The objective of the study is to examine the moderating role of risk management committee on the impact

of credit risk on financial performance of Deposit Money Banks in Nigeria. Hence, other objectives are to:

i. analyze the impact of credit risk on performances of DMBs in Nigeria
ii. assess the influence of non-performing loans on financial performance of DMBs in Nigeria
iii. examine the moderating role of risk management committee on the impact of non-performing loans on financial performance of DMBs in Nigeria

To achieve the objectives of the study, the hypothesis is stated in null form
H_0: Risk management committee has no significant moderating role on the impact of credit risk on financial performance of DMBs in Nigeria.

LITERATURE REVIEW

Conceptual and Theoretical Framework of the Study
Financial performance is a measure of how a bank can use its assets from major objectives of operations to generate profit. According to Hindasah et al., (2020) a firm will generate high profit with little error in managing the affairs of the company. Thus, monitoring the company credit facilities by the risk management committee can help achieve their goals and improve the performance of the banks. Therefore, risk management committee is one of the vital instruments towards the success of a company. Ugwu et al., (2021) asserted that the risk management committee of a company is crucial to its corporate survival. The committee members in the board are appointed by the board of directors with the cardinal objective of supervising the attainment of the set goals of the banks.

Credit risk is a vital element that needs to be efficiently managed by the management of banks because credit is a core mandate of the banking sector. The credit risk is the probability of losing an outstanding loan either partly or in full, as result of default in repayment. A dynamic credit risk framework is vital for banks to maximize profit and prevent forceful merger and/or acquisition (Coco, 2019). Djan, Stephen, Bawuah, and Halidu (2015) argued that credit risks can cause cash flow problems which in turn, affects banks 'performance levels. Iwoye (2012) stated that banks witnessed high non-performing credit portfolios in Nigeria due to non-repayment of loan by borrowers, and this affected the banks performance. Shahid et al., (2019) explained that credit risk is the main determinant of financial performance of banks. Credit risk can be adequately managed if the bank's board of directors can put in place a very good risk management framework to evaluate the loan given to customers in order to reduce the non-performing loan that affect the bank performance.

A good performing bank indicates that they can generate profits that will easily attract investors to increase the capital base and create more employment opportunities, thus, contribute to GDP of the country. Therefore, performance is a measure of profit and this is referred to as the returns on investment or earnings from the business activities of a company. These returns are compared with the resources employed to ascertain the level of firm's profit. Abdelaziz Hakimi and Khemais (2017) argued that the performance and soundness of banks are vital pillars for profitability and is considered an essential mechanism for economic development.

Zhongming and Frimpong (2019) states that financial performance assesses the profitability of a company by measuring a firm's creditworthiness and operational cost effectiveness. Therefore, financial performance is a guide of the net outcome of operations of a firm in order to maintain its stability. In the same vein Maaka (2013) believes that a performing business will earn a high profit and have the capability and capacity to reward its owners with a high return on the capital invested. On the other hand, a non-performing business will not be profitable and cannot survive in the long run.

Risk management committee expertise measures the proceedings of board of director's members that serve on the risk management committee that have the required training or knowledge. Board of directors with accounting or finance expertise have added advantage to understanding the risks in their various disguise(Ugwu et al., 2021). The competence of the risk committee members in accounting or finance will determine their ability to detect, manage and control risk of a firm to enhance their performance (Kallama, 2015). Khan (2019) indicated that the monitoring and advisory roles of board of directors can be performed efficiently and effectively if the expertise of risk committee are well constituted. Thus, to manage the credit risk of the bank, risk management committee is more concerned with the objectivity of loan and advance to customers, they therefore emphasize on ensuring that the bank credit risk framework are properly adhered to when issuing out loan to customers and in accordance with best corporate governance practice as risk management committee is saddled with the responsibility of checkmating the activities of the management on issuance of loan to customers.

Finance Distress Theory
The finance distress theory is applicable to a company that has reached a declining stage where it cannot meet its daily financial obligation to its customers, therefore, the company is believed to have been in the state of financial distress (Baldwin & Mason, 1983). Furthermore, a company enters financial distress in the first year that the current maturities long term debt is more than its cash flows. Thus, the inability for such a firm to meet its agreed debt obligation is considered as a state of 'finance distress' (Whitaker, 1999). In any instance where a deposit money bank is unable to give loans to customers as at when they demand, may lead to financial crisis. Therefore, credit risk in deposit money banks need to be tackled with immediate effect since it may result to financial distress. It is important for the banks to manage the credit portfolio in order to avoid financial distress. Therefore, the theory provides for non-biasness on the impact of credit risk indicators on performance of the banks.

Previous Research
Several empirical studies documented that credit risk and an active and efficient risk management committee is considered a major determinant of bank performance. In this regard, Al-Husainy and Jadah, (2021) assessed the effect of credit risk on profitability of 18 commercial banks in Iraqi from 2010 to 2020. Panel data model was employed in the study, and a Generalized Methods of Moments (GMM) regression of Fixed-effects models was used for the study. Findings of the study showed that credit risk has an adverse significant impact on bank profitability. The study is limited to foreign context. Also, Kiptoo, Kariuki1 and Ocharo (2021) examined the impact of credit risk management and the financial performance of 51 insurance firms in Kenya from 2013 to 2020. The regression results of the study indicated that credit risk has a negative and significant effects on financial performance.

Inegbedion, Vincent and Obadiaru (2020) examined the effect of credit risk management on financial performance of commercial banks in Nigeria. A longitudinal survey, and ex-post facto research design was adopted for the study. Generalized method of moments (GMM) and vector Error Correction Model were used to analyze the data. The findings revealed that credit risk significantly and negatively influenced bank profitability. Furthermore, Bhattarai, (2020) analyzed the effect of credit risk on the financial performance of 10 commercial banks in Nepal from 2001 to 2016. The study adopted a balanced panel data and the result of the regression model established that non-performing loans ratio (NPLR) have significant effect on financial performance. Also, credit to deposit ratio (CDR) has no significant effect on financial performance.

Fakhrunnas and Imron (2019)assessed the risk attributes and performance of 21 biggest Islamic rural banks in Indonesia during 2013-2017. Based on the analyzed panel data, the findings revealed that Non- Performing Financing (NPF) has negative and significant influence on Return on Asset (ROA). This study was limited to specialized bank system (Islamic bank in Indonesia) and was moderated. Also, Nelly *et al*. (2019) analyzed the influence of financial risk exposure on financial performance of banks in Kenya. The study adopted a descriptive research design and structure panel data was used in the study. The result showed that credit risk is negative and significantly impacted on financial performance. The finding of the study in Kenya may not be applicable to the Nigerian environment and this study was moderated by economic variables and geographical factors which will not permit generalizing the study to Nigeria.

Bogale (2019) examined the factors influencing the profitability of fourteen (14) banks in Ethiopia, from 2008 to 2017. The study adopted unbalanced panel data. The fixed effect result output revealed that credit risks are not powerful variables in the determination of banks profitability. The study was in a different geographical location and may not be reliable to generalize it to the Nigerian economic environment. Furthermore, Elshaday, Kenenisa, and Mohammed (2018) in their analysis of the determinants of financial performance of eight banks in Ethiopia from 2007 to 2016, used the random effect model. The results showed that non-performing loans and loan loss provision are negative, and they significantly have an effect on the financial performance.

Afolabi et al., (2020) evaluated the effect of credit risk on financial performance of six microfinance banks in Nigeria covering the periods of 2012 to 2018. The panel Ordinary Least Squares (OLS) regression was used. The results of the analysis showed that non-performing loans has a significant and negative effect on returns on asset, while loan-loss provisions have a negative and insignificant impact on returns on assets. The study is limited to microfinance banks in Nigeria and the result findings may not be applicable to DMBs in Nigeria. On the other hand, Ajao & Oseyomon, (2019) examined the impact of credit risk management on the performance of Deposit Money Banks in Nigeria from 2006 to 2016. The dynamic Generalized Method of Moments technique was used for the study. The results showed that non-performing loan and loan loss provision have significant positive impact on bank performance.

Ekinci and Poyraz, (2019) studied the impact of credit risk on performance of 26 commercial banks in Turkey from 2005 to 2017. Panel data was considered. The estimation result suggested that non-performing Loans (NPLs) have a negative and significant effect on profitability. Similarly, Hamza (2017) evaluated the influence of credit risk management on performance of banks in Pakistan. Regression results showed that Loan loss provision ratio and Non-performing loan ratio (NPLR) have negative and significant impact on financial performance.

Fali et al., (2020) investigated the effect of specific insurance risks on profitability in Nigeria from period of 2009-2018, with a sample size of 19 insurance firms. The independent variables are re-insurance, technical provisions and underwriting risk and dependent variable is net profit margin. The study results of the fixed effect regression model revealed the technical provision and the underwriting ricks had a negative and significant impact on profitability, while the re-insurance risk had a negative and insignificant impact on profitability. Similarly, John and Okika, (2019) investigated the effect of credit risks on financial performance of 15 banks in Nigeria, from 2006 to 2017. The results of regression model revealed that non-performing loans and impairment loan charge-off have negative but significant impact on performance, and the impact of capital adequacy on financial performance was also found to be negative but statistically insignificant. In the same vein, Shahid1 et al., (2019) examined the effect of credit risk on 24 banks financial performance in Pakistan, from 2010-2017. The study adopted panel regression model. This study evidenced that leverage, non-performing loans and provision for facilities ratios had significant and negative effect on financial performance. Another study by Safii, (2019) findings showed that credit risk is positive and insignificant impact on bank profitability, while the study of Tam & Linh, (2020), On the other hand, Mudanya1 & Muturi (2018) established that credit risk (NPL/TL) is negative and statistically significant on profitability.

The research study of Ugwu et al., (2021) examine the effect of corporate risk management committee on performance of firms in Nigeria of listed 18 banks in Nigeria as found in Nigeria Stock Exchange, 2020. The study sample size comprised five banks that have consistently been in banking operations and have the required size of shareholders wealth as reported by NDIC annual report from (2009-2019) and have mandatorily been reporting risk management issues to date. Data collection was based on content analysis using systematic classification, coding, identifying items and subject interpretation of text data. The study applied Descriptive Statistics; Pearson Correlation; Hausman Test (Random and Fixed Effect) Regression Model; Variance Inflation Factor (VIF) to check Multicollinearity of the independent variables, Heteroscedasticity Test and Ramsey RESET Test. The results of the study show that corporate risk management committee impacts ROE of the sampled firms especially banks. corporate risk committee composition CRCC are positively significant; while corporate risk committee expertise is positively insignificant and corporate risk committee size is insignificant on ROE.

METHODOLOGY

The study adopted ex-post facto research design. Population and sample size is thirteen (13) DMBs in Nigeria. Census sampling technique is employed. The data was sourced through the annual report and accounts of the DMBs from the 2012 to 2021. Multiple regression analysis is used to examine the moderating role of board size on the impact of credit risk on financial performance of DMBs in Nigeria.

Post estimation tests such as Multi-collinearity, heteroskedasticity, Hausman and Pagan Lagrangian multiplier tests were conducted to fulfil the assumption of the classical linear regression model (CLRM) and to ensure the fitness of the selected model.

Table 1 Population and Sample Size of the Study

S/n	Bank	Period of data collection	Observation
1	Access Bank Plc	2012-2021	10 Years
2	Ecobank Nigeria Plc	2012-2021	10 Years
3	Fidelity Bank Plc	2012-2021	10 Years
4	First Bank of Nigeria Plc	2012-2021	10 Years
5	First City Monument Bank Plc	2012-2021	10 Years
6	Guaranty Trust Bank Plc	2012-2021	10 Years
7	Stanbic IBTC Bank Limited	2012-2021	10 Years
8	Sterling Bank	2012-2021	10 Years
9	United Bank for Africa	2012-2021	10 Years
10	Union Bank of Nigeria Plc	2012-2021	10 Years
11	Unity Bank Plc	2012-2021	10 Years
12	Wema Bank Plc	2012-2021	10 Years
13	Zenith Bank Plc	2012-2021	10 Years

Source: NXG 2022

The model encapsulates the contribution of credit risk on financial performance;

$$FP_{it}= \beta_{0it} + \beta_1 CR_{it}+ \beta_2 NPL_{it} + \varepsilon_{it} \text{ --- (I)}$$

Incorporating risk management committee expertise as the moderating variable. The model (II) two is developed below;

$$FP_{it}=\beta_0+\beta_1 CR_{it}+ \beta_2 NPL_{it}+ \beta_3 RMCE_{it}+ \beta_4 NL*RMCE_{it}+ \beta_5 NPL*RMCE_{it}+ \varepsilon \text{ -------------(II)}$$

Where:

FP= Financial performance   proxy by ROA (Profit before tax to Total Asset)

CR= Credit Risk (Non-performing loans to Total loan)

NPL= Natural Logarithms of total non-performing loan

RMCE= Risk Management Committee Expertise

NL* RMCE= Interaction between Non-performing to total loan and Risk Management Committee Expertiseas moderator

NPL* RMCE = Interaction between Natural log of Non-performing and Risk Management Committee Expertise as moderator

i= number bank observation, 1- - - 13

 t= the index of time periods

ε =is the error component for bank

β_0= Intercept of the model "Constant"

β= 1, 2 . . . are parameters to be estimated

RESULT AND DISCUSSION

Descriptive Analysis
Table 1
Descriptive Statistics .

Variables	OBS	Mean	Std. Dev.	Min.	Max
ROA	130	0.01711	0.0240	-0.1068	0.0656
CR	130	0.0538	0.0633	0	0.3927
NPL	130	16.4757	1.7807	9.98	20.16
RMCE	130	0.282	0.0577	0.12	0.40

STATA 13 Result Output
Table I reported a descriptive information of independent variables, dependent variable and moderating variable of thirteen (13) DMB's from the period of 2012 to 2021. The descriptive statistics show an observation of 130, with an average bank performance (ROA) of 0.0171, minimum value of -0.1068 and maximum value of 0.0656. This signified that, the least sampled bank incurred 10% loss. On the other hand, the most profitable bank among the sampled banks earned 6%. A standard deviation of .02400 showing that there is no wide dispersion from the mean across the sample bank. The credit risk (Non-performing loans to Total loan) ranging from 0 to 0.3927 with an average mean value of 0.0538 and standard deviation 0.0632 which indicates a low volatility among the bank ability. The non-performing loan (NPL) (Natural Logarithms of total non-performing loan) revealed an average value of 16.4757 with a standard deviation of 1.7807 indicating a wide volatility among the banks, and there minimum and maximum value of 9.98 and 20.16 respectively. Risk management committee expertise as moderating variable show a minimum and maximum number of expertise member to be 12% and 40% respectively with an average number of expertise risk committees among the bank to 28%.

Post Estimation Test

Table 2
Post estimation Test

	Model One	Model Two
Mean VIF	**1.09**	
Heteroskedasticity	74.70 (0.0000)	38.48 (0.0000)
Hausman Test	4.34(**0.114**)	2.94(**0.7098**)
Breusch&Lagrangian Multiplier Test	38.48(0.0000)	40.93(0.0000)

STATA 13 Result Output
The study presents the findings of each model and the post estimation test to establish the validity and reliability of the results in Table 2. The fixed effect and random effect model were conducted and the Hausman test was used to choose the best model for the study. The hausman test of the two models revealed that the p-value is insignificant which implies that the random effect is best for the study. Also, lagrangian multiplier test was conducted and the p-value is significant at 1% level of significance for both model, which means random effect model is most appropriate for the study. Heteroskedasticity

test result revealed error in the models. However, in order to correct for the error in the model, Feasible Generalized Least Squares (FGLS) regression model were adopted for the two models. Table 2 revealed the summary of the post estimated test in the study.

Regression Result
Table 3: FGLS Regression Models

Variables	Model One		Model Two	
	Coef.	P-Value	Coef.	P-Value
CR	-0.1338	0.000	-0.6599	0.005
NPL	0.0020	0.043	0.0005	0.938
RMCE			-0.1334	0.447
CR*RMCE			0.2100	0.023
NPL*RMCE			0.0006	0.825
Constant	-0.0144	0.442	0.0234	0.640
R^2		**0.1134**		**0.1554**
F-Statistics	17.55	0.0002	20.13	0.0012

STATA 13 Result Output
The overall explanatory power of the regression models is good with R^2 of 0.11 and 0.15 for model one and two respectively. This implies that 11% and 15% of the variation in performance can be explained by the independent variable of model one and in addition of moderating variable of risk management committee in model two respectively. Furthermore, the F-statistics p-value show 0.0002 and 0.0001 for model one and two respectively, and this implies that the two model are fitted for the study.

Model one in Table 3 shows that credit risk has a negative and significant effect on financial performance with a coefficients value of -0.1338 and p-value of 0.000. Therefore, the study rejects the null hypothesis. This implies that an increase in the credit risk by 1%, decreases the financial performance (ROA) by 13%. The means that a high ratio of non-performing loan to total loan can cause poor bank performance and affect the reliability and goodwill of the bank. The study is supported by research work of Arif Hussain, Ihsan & Hussain (2016) and contradicts the study of Kodithuwakku (2015). Furthermore, the Non-performing loan which is measured by (Natural Logarithms of total non-performing loan) revealed a significant positive effect on financial performance with a coefficient value of 0.0020 and p-value of 0.043. The study then rejects the null hypothesis. This implies that the non-performing loan does not adversely affect the financial performance. Therefore, the banks should ensure that their non-performing loans should not be beyond 0.0020%. This study contradicts the research of Afolabi et al., (2020) that unveiled that non-performing loans has negative and significant effect on financial performance.

The moderating variable of risk management committee expertise in model two unveiled that credit risk has a significant negative effect on financial performance with a coefficients value of -0.6559 and p-value of 0.005. This necessitated the study to reject the null hypothesis. This indicates that an increase in credit risk by 1%, decrease financial performance (ROA) by 65%. This means that a high ratio of

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non-performing loan to loan can extremely weaken performance of the bank and this can affect the reliability of banks. This is also supported by the study of Akomeah et al.(2017) and contradicts the study of Kodithuwakku (2015). Also, Non-performing loan shows a positive and insignificant effect on financial performance with a coefficient value of 0.0005and p-value of 0.938. The study, therefore, accepts the null hypothesis. This implies that the level of non-performing loan of the DMBs could not affect the financial performance. Therefore, the banks should sustain the level of non-performing loans at 0.0005%. This study contradicts the research of Afolabi et al., (2020) that unveiled that non-performing loans has negative and significant effect on financial performance.

However, with the moderating role of the risk management committee expertise, the credit risk established a positive and significant impact on financial performance with coefficient value of 0.2100 and p-value of 0.003. Therefore, the null hypothesis was rejected and concluded that moderating role of risk management committee expertise on credit risk is significant on financial performance. This means an interaction between risk management committee expertise and credit risk will increase the financial performance by 21%. Furthermore, the interaction of risk management committee expertise and non-performing loan on financial performance was found to be a positive and insignificant effect on financial performance with a coefficient value of 0.0006 and p-value of 0.825. The study is supported by Siriba, (2020).

CONCLUSION AND RECOMMENDATION

The study analysed the credit risk and financial performance with moderating role of risk management committee expertise of deposit money banks in Nigeria from 2012 to 2021. The credit risk indicators are proxy by non-performing loan to total loan ratio, the natural log of value of non-performing loans, and the financial performance is proxy by (ROA); and risk management committee expertise is proxy by the percentage of risk management committee expertise to total number of risk management committee from 2012 to 2021. The study concludes that credit risk is negative and significant impact on financial performance. Furthermore, the moderation of risk management committee expertise established that credit risk has a positive and significant impact on financial performance of DMBs in Nigeria.

Therefore, the study recommends that deposit money banks in Nigeria should review their credit management framework in terms of credit facility procedures to customers and the policy that enables the reduction of non-performing loans to total loan. Furthermore, the number of risk management committee expertise should be maintained since it was empirically found to be significant and positive in moderating the relationship between non-performing loans to the total loan of the banks.

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Appendix

```
Notes:
    1.  (/v# option or -set maxvar-) 5000 maximum variables

. *(8 variables, 130 observations pasted into data editor)

. summarize roa cr npl rmce

    Variable |       Obs        Mean    Std. Dev.       Min        Max
-------------+--------------------------------------------------------
         roa |       130    .0171077    .0240005    -.1068      .0656
          cr |       130    .0537892    .0632849         0      .3927
         npl |       130    16.47569    1.780685      9.98      20.16
        rmce |       130        .282    .0577001       .12         .4

. pwcorr roa cr npl rmce, sig star(5)

             |      roa        cr       npl      rmce
-------------+------------------------------------------
         roa |   1.0000
             |
             |
          cr |  -0.3019*   1.0000
             |   0.0005
             |
         npl |   0.0712    0.2925*   1.0000
             |   0.4207    0.0007
             |
        rmce |  -0.0505   -0.1067    0.0942    1.0000
             |   0.5683    0.2267    0.2866
             |

. regress roa cr npl

      Source |       SS           df       MS        Number of obs =      130
-------------+----------------------------------    F(  2,   127) =     8.57
       Model |  .008838613         2   .004419307    Prob > F      =   0.0003
    Residual |  .065468719       127   .000515502    R-squared     =   0.1189
-------------+----------------------------------    Adj R-squared =   0.1051
       Total |  .074307332       129   .000576026    Root MSE      =    .0227

         roa |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
          cr |  -.1338309   .0330324    -4.05   0.000    -.1991962   -.0684657
         npl |    .002351    .001174     2.00   0.047      .000028    .0046741
       _cons |  -.0144282   .0190033    -0.76   0.449    -.0520323    .0231758

. estat vif

    Variable |       VIF       1/VIF
-------------+----------------------
          cr |      1.09    0.914448
         npl |      1.09    0.914448
-------------+----------------------
    Mean VIF |      1.09
```

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```
. estat hettest

Breusch-Pagan / Cook-Weisberg test for heteroskedasticity
        Ho: Constant variance
        Variables: fitted values of roa

        chi2(1)      =     74.70
        Prob > chi2  =    0.0000

. regress roa cr npl rmce crrmc nplrmc

      Source |       SS       df       MS              Number of obs =     130
-------------+------------------------------           F(  5,   124) =    5.09
       Model |  .012661364     5  .002532273           Prob > F      =   0.0003
    Residual |  .061645968   124  .000497145           R-squared     =   0.1704
-------------+------------------------------           Adj R-squared =   0.1369
       Total |  .074307332   129  .000576026           Root MSE      =   .0223

------------------------------------------------------------------------------
         roa |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
          cr |  -.6599429   .2380485    -2.77   0.006    -1.131108   -.1887782
         npl |   .0005845   .0077503     0.08   0.940    -.0147555    .0159244
        rmce |  -.1334182    .179481    -0.74   0.459    -.4886614     .221825
       crrmc |    .210087   .0947162     2.22   0.028     .0226171    .3975569
      nplrmc |   .0006445   .0029791     0.22   0.829     -.005252     .006541
       _cons |   .0234356   .0513783     0.46   0.649    -.0782564    .1251277
------------------------------------------------------------------------------

. estat hettest

Breusch-Pagan / Cook-Weisberg test for heteroskedasticity
        Ho: Constant variance
        Variables: fitted values of roa

        chi2(1)      =     27.68
        Prob > chi2  =    0.0000

. xtset banks year
        panel variable:  banks (strongly balanced)
         time variable:  year, 2012 to 2021
                 delta:  1 unit

. xtreg roa cr npl, fe

Fixed-effects (within) regression            Number of obs      =        130
Group variable: banks                        Number of groups   =         13

R-sq:  within  = 0.0652                       Obs per group: min =         10
       between = 0.2973                                      avg =       10.0
       overall = 0.1052                                      max =         10

                                              F(2,115)           =       4.01
corr(u_i, Xb)  = 0.1801                        Prob > F          =     0.0207

------------------------------------------------------------------------------
         roa |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
          cr |   -.086499   .0311868    -2.77   0.006     -.148274    -.024724
         npl |   .0004875   .0011841     0.41   0.681     -.001858    .0028329
       _cons |   .0137293   .0190745     0.72   0.473    -.0240537    .0515123
-------------+----------------------------------------------------------------
     sigma_u |  .01437666
     sigma_e |  .01922272
         rho |  .35870878   (fraction of variance due to u_i)
------------------------------------------------------------------------------
F test that all u_i=0:     F(12, 115) =     5.18             Prob > F = 0.0000

. estimates store fixed
```

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```
. xtset banks year
      panel variable:  banks (strongly balanced)
       time variable:  year, 2012 to 2021
                delta:  1 unit

. xtreg roa cr npl, re

Random-effects GLS regression            Number of obs      =        130
Group variable: banks                    Number of groups   =         13

R-sq:  within  = 0.0642                   Obs per group: min =         10
       between = 0.3395                                   avg =       10.0
       overall = 0.1134                                   max =         10

                                          Wald chi2(2)       =      10.42
corr(u_i, X)   = 0 (assumed)              Prob > chi2        =     0.0055

─────────────┬────────────────────────────────────────────────────────────
         roa │     Coef.   Std. Err.      z    P>|z|     [95% Conf. Interval]
─────────────┼────────────────────────────────────────────────────────────
          cr │ -.0985703   .0306012    -3.22   0.001    -.1585477   -.038593
         npl │  .0009953   .0011429     0.87   0.384    -.0012447   .0032353
       _cons │  .0060116   .0187298     0.32   0.748    -.0306981   .0427213
─────────────┼────────────────────────────────────────────────────────────
     sigma_u │ .01194576
     sigma_e │ .01922272
         rho │ .27859664   (fraction of variance due to u_i)
─────────────┴────────────────────────────────────────────────────────────

. estimates store random

. hausman fixed random

                 ──── Coefficients ────
             │      (b)          (B)          (b-B)     sqrt(diag(V_b-V_B))
             │    fixed        random       Difference        S.E.
─────────────┼────────────────────────────────────────────────────────────
          cr │  -.086499    -.0985703      .0120713          .0060148
         npl │  .0004875    .0009953      -.0005078          .0003097
─────────────┴────────────────────────────────────────────────────────────
                    b = consistent under Ho and Ha; obtained from xtreg
         B = inconsistent under Ha, efficient under Ho; obtained from xtreg

   Test:  Ho:  difference in coefficients not systematic

              chi2(2) = (b-B)'[(V_b-V_B)^(-1)](b-B)
                      =       4.34
            Prob>chi2 =      0.1144

. xttest0

Breusch and Pagan Lagrangian multiplier test for random effects

      roa[banks,t] = Xb + u[banks] + e[banks,t]

      Estimated results:
                   │       Var      sd = sqrt(Var)
          ─────────┼──────────────────────────────
             roa   │    .000576       .0240005
               e   │   .0003695       .0192227
               u   │   .0001427       .0119458

      Test:  Var(u) = 0
                        chibar2(01) =     38.48
                      Prob > chibar2 =    0.0000
```

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```
. xtset banks year
        panel variable:  banks (strongly balanced)
         time variable:  year, 2012 to 2021
                 delta:  1 unit

. xtgls roa cr npl, panels(iid) corr(independent)

Cross-sectional time-series FGLS regression

Coefficients:  generalized least squares
Panels:        homoskedastic
Correlation:   no autocorrelation

Estimated covariances      =          1        Number of obs      =        130
Estimated autocorrelations =          0        Number of groups   =         13
Estimated coefficients     =          3        Time periods       =         10
                                               Wald chi2(2)       =      17.55
Log likelihood             =   309.1296        Prob > chi2        =     0.0002
```

roa	Coef.	Std. Err.	z	P>|z|	[95% Conf. Interval]	
cr	-.1338309	.0326491	-4.10	0.000	-.1978219	-.0698399
npl	.002351	.0011603	2.03	0.043	.0000768	.0046252
_cons	-.0144282	.0187827	-0.77	0.442	-.0512417	.0223852

```
. xtset banks year
        panel variable:  banks (strongly balanced)
         time variable:  year, 2012 to 2021
                 delta:  1 unit

. xtreg roa cr npl rmce crrmc nplrmc, fe

Fixed-effects (within) regression              Number of obs      =        130
Group variable: banks                          Number of groups   =         13

R-sq:  within  = 0.1376                         Obs per group: min =         10
       between = 0.2094                                        avg =       10.0
       overall = 0.1447                                        max =         10

                                               F(5,112)           =       3.57
corr(u_i, Xb)  = 0.1101                         Prob > F           =     0.0049
```

roa	Coef.	Std. Err.	t	P>|t|	[95% Conf. Interval]	
cr	-.7115596	.2119884	-3.36	0.001	-1.131588	-.2915317
npl	.0043297	.0070953	0.61	0.543	-.0097287	.0183882
rmce	-.011934	.1731112	-0.07	0.945	-.3549317	.3310637
crrmc	.2518743	.0849351	2.97	0.004	.0835863	.4201623
nplrmc	-.001493	.0027523	-0.54	0.589	-.0069462	.0039603
_cons	.0169005	.0483601	0.35	0.727	-.0789189	.1127199
sigma_u	.01433243					
sigma_e	.01870917					
rho	.36982237	(fraction of variance due to u_i)				

```
F test that all u_i=0:     F(12, 112) =      5.34                 Prob > F = 0.0000

. estimates store fixed

. xtset banks year
        panel variable:  banks (strongly balanced)
         time variable:  year, 2012 to 2021
                 delta:  1 unit

. xtreg roa cr npl rmce crrmc nplrmc, re

Random-effects GLS regression                  Number of obs      =        130
Group variable: banks                          Number of groups   =         13

R-sq:  within  = 0.1364                         Obs per group: min =         10
       between = 0.2597                                        avg =       10.0
       overall = 0.1554                                        max =         10

                                               Wald chi2(5)       =      20.13
corr(u_i, X)   = 0 (assumed)                    Prob > chi2        =     0.0012
```

roa	Coef.	Std. Err.	z	P>|z|	[95% Conf. Interval]	
cr	-.70247	.2083409	-3.37	0.001	-1.110811	-.2941292
npl	.0036154	.0069507	0.52	0.603	-.0100077	.0172384
rmce	-.0361481	.1671893	-0.22	0.829	-.3638332	.291537
crrmc	.244131	.0833946	2.93	0.003	.0806805	.4075815
nplrmc	-.0010703	.0026905	-0.40	0.691	-.0063436	.0042031
_cons	.0178	.0471385	0.38	0.706	-.0745897	.1101897
sigma_u	.01385919					
sigma_e	.01870917					
rho	.35431369	(fraction of variance due to u_i)				

```
. estimates store random
```

```
. hausman fixed random

                 ── Coefficients ──
             │     (b)          (B)          (b-B)      sqrt(diag(V_b-V_B))
             │    fixed        random      Difference         S.E.
─────────────┼──────────────────────────────────────────────────────────
          cr │  -.7115596      -.70247     -.0090897        .0391555
         npl │   .0043297      .0036154     .0007144        .0014253
        rmce │  -.011934      -.0361481     .0242141        .0448912
       crrmc │   .2518743      .244131      .0077433        .0161028
      nplrmc │  -.001493      -.0010703    -.0004227        .0005796

                        b = consistent under Ho and Ha; obtained from xtreg
            B = inconsistent under Ha, efficient under Ho; obtained from xtreg

    Test:  Ho:  difference in coefficients not systematic

              chi2(5) = (b-B)'[(V_b-V_B)^(-1)](b-B)
                      =        2.94
            Prob>chi2 =      0.7098

. xttest0

Breusch and Pagan Lagrangian multiplier test for random effects

        roa[banks,t] = Xb + u[banks] + e[banks,t]

    Estimated results:
                    │     Var        sd = sqrt(Var)
        ────────────┼──────────────────────────────
            roa     │   .000576         .0240005
            e       │   .00035          .0187092
            u       │   .0001921        .0138592

    Test:  Var(u) = 0
                      chibar2(01) =    40.93
                    Prob > chibar2 =   0.0000

. xtset banks year
      panel variable:  banks (strongly balanced)
       time variable:  year, 2012 to 2021
               delta:  1 unit

. xtgls roa cr npl rmce crrmc nplrmc, panels(iid) corr(independent)

Cross-sectional time-series FGLS regression

Coefficients:  generalized least squares
Panels:        homoskedastic
Correlation:   no autocorrelation

Estimated covariances      =        1        Number of obs      =        130
Estimated autocorrelations =        0        Number of groups   =         13
Estimated coefficients     =        6        Time periods       =         10
                                             Wald chi2(5)       =      26.70
Log likelihood             =  313.0403       Prob > chi2        =     0.0001


        roa │    Coef.    Std. Err.      z     P>|z|     [95% Conf. Interval]
────────────┼────────────────────────────────────────────────────────────────
         cr │  -.6599429   .2324902    -2.84    0.005    -1.115615    -.2042704
        npl │   .0005845   .0075693     0.08    0.938    -.0142511     .01542
       rmce │  -.1334182   .1752902    -0.76    0.447    -.4769807     .2101443
      crrmc │   .210087    .0925046     2.27    0.023     .0287813     .3913927
     nplrmc │   .0006445   .0029095     0.22    0.825    -.0050581     .0063471
      _cons │   .0234356   .0501786     0.47    0.640    -.0749127     .121784


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