EFFECT OF CREDIT RISK ON THE PERFORMANCE OF LISTED DEPOSIT MONEY BANKS IN NIGERIA

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BY

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A THESIS SUBMITTED TO THE DEPARTMENT OF ACCOUNTANCY, SCHOOL OF MANAGEMENT AND INFORMATION TECHNOLOGY, IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE AWARD OF MASTER DEGREE IN TREASURY AND FINANCIAL MANAGEMENT OF THE MODIBBO ADAMA UNIVERSITY OF TECHNOLOGY YOLA

DECEMBER, 2019

DECLARATION

I hereby declare that this thesis was written by me and it is a record of my own research work. It has not been presented before in any previous application for a higher degree. All references cited have been duly acknowledged.

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MOHAMMED, Hashimu Date

DEDICATION

In the name Allah the most beneficial the most merciful all praises be to HIM alone. I dedicated this thesis to my humble self and my beloved family and the entire Ardo's family.

APPROVAL PAGE

This thesis entitled **"Effect of Credit Risk on Performance of Listed Deposit Money Banks in Nigeria"** meets the regulations governing the award of Masters in Treasury and Financial Management of the Modibbo Adama University of Technology, Yola and it is approved for its contribution to knowledge and literary presentation.

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ABSTRACT

The study examined the effect of credit risk management on the financial performance of listed deposit money Banks in Nigeria. However, the specific objectives of this study are to: determine the effect of default rate on the financial performance of banks in Nigeria; evaluate the impact of loan loss provisioning on the financial performance of banks in Nigeria and assess the effect of capital adequacy ratio on the financial performance of banks in Nigeria. The study employed the ex-post factor research design in which the data used were extracted from the annual reports and accounts of the sampled banks for the period 2007-2018. The population for this study constitutes the entire listed Deposit Money Banks (DMBs) in the Nigerian Stock Exchange as at 31st July 2018, the population of the study is all the fifteen (15) BMBs. The sampling technique employed in this study is the non-probability sampling technique referred to as judgmental sampling. This study employed the secondary method of data collection in which the data was extracted from the annual report and accounts of the sampled banks for the period. The data collected were analysed using OLS regression analysis. The findings revealed that both ROA and ROE have a statistically significant positive effect on default rate (DR) and Loan loss provision (LLP). The study concludes that Nigerian banks have poor credit risk management practices and having high default rate in their loans portfolios. The study recommended that Nigerian listed Banks need to adequately and accurately obtain information from both internal and external sources on credit standard of loan seekers in order to access the multiplicity of credit risk they can face when presented with a loan proposal.

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CHAPTER ONE

INTRODUCTION

1.1 Background to the Study

Credit Risk Management (CRM) policies of a commercial bank comprise those decision-making structures associated with the reduction of exposures to credit asset classification and loan loss provisioning. According to the Basic Committee on Banking Supervision (BCBS, 2006), management of bank risk relates to the minimization of the potential that a bank borrower or counter-party will fail to meet its obligations in accordance with agreed terms (Basel. 2000).

CRM policies are designed and applied both internally as an operational tool by bank management and externally by bank regulatory authorities to manage the financial health of the banking sector. The focuses of such policies are the needs for asset diversification; maintenance of balance between returns and risk, bank asset quality and ensuring safety of depositors fund. The failure of various regulatory frameworks designed by the supervisory authorities and inability of technological innovations to stern rising toxic assets' in many banks constitute matters of grave concern for stakeholders in both developed and developing nations financial systems (Saunders & Cornett, 2007; BCBS, 2006; and Caouette, Altman, Naravanan. & Nimmo, 2008).

The current distress in the banking industry has been acknowledged widely as arising primarily from non-performing loans which have been traced to the macroeconomic environment, poor loan processing and bad management, undue interference in the loan granting process, absence of collateral, self-serving interest of non performing credit in the banking system among others and this has been a major concern to bank officials, depositors and also to the government. Banks in making lending, attempt to ensure prompt repayment of sums and interest, poor credit management may induce a fundamental breach in the transaction underlying the contractual relationship between a creditor and a borrower especially where the borrower fails or is unable to meet repayment obligation on either sum, interest or both (Owojori, 2011). The goal of credit risk assessment is to maximize a bank's risk adjusted rate of return by maintaining credit risk exposure within acceptable parameters. Banks need to manage the credit risk inherent in the

entire portfolio as well as the risks in individual credit or transactions. Banks should also consider the relationship between credit risk and other risks. The effective management of credit risk is a critical component of a comprehensive approach to risk and essential to the long term success of any banking industry (Adeniyi, 2005). Thus, it is against this background that this study aims at assessing the impact of credit risk management on the financial performance of Deposit Money Banks.

Banks play an important role in economic development, and in fostering economic growth of any country through their role of intermediation and in providing financial services to the needy individuals and corporations. In a modern economy, there is a clear distinction between surplus economic unit and the deficit economic unit. Consequently, Shekar and Lekshmy (2008) argued that the existence of financial institutions is to by and large ensure the transfer of funds from the surplus unit to the deficit unit.

Kargi (2011) noted that credit creation is the main income generating activity of Deposit Money Banks (DMBs) thereby, creating a large credit portfolio. This exposes the banks to a variety of risk such as credit, market, operational, interest rate and liquidity risks. Boahene, Dasah & Agyei (2012) and Chen and Pan (2012) noted that credit risk is the most important risk as all the other risks revolve. Therefore, credit risk is the risk that money owed is not repaid. In other words, it is a situation whereby a borrower or counterparty fail to meet his/her obligations on money borrowed in accordance with the terms and condition of repayment.

Thus, there has to be a system of controlling the potential consequences of credit risk which follow a standard risk management framework of identification, evaluation and management. That is, the cause of the risk has to be identified, the extent of the risk has to be evaluated and decisions made as to how this risk is to be managed. Olalekan & Adeyinka (2013) observe that the higher the exposure of a bank to credit risk, the higher the tendency of the banks to experience financial crisis and the lower the risk the lower the tendencies of banks to experience financial crisis or failure. As contained in Basel III Capital Accord (2011), due to increasing rise in non-performing loans (NPL), its attendant consequences, numerous weaknesses in the global regulatory framework and in banks' risk management practices, made the Basel Committee on Banking Supervision (BCBS) to issue Basel I, II accord and Basel III accord which emphasize

on the importance of capital adequacy for mitigating credit risk. More so, the Nigerian banking industry has been stressed by the deteriorating quality of its credit assets as a result of the significant plunge in equity market indices, global oil prices and sudden depreciation of the naira against global currencies. Kolapo, Ayeni and Oke (2012) noted that this translate into poor quality of the banks' loan assets which in turn hindered banks to extend more credit to the domestic economy, thereby adversely affecting economic performance. This prompted the Federal Government of Nigeria through an Act of the National Assembly to establish the Asset Management Corporation of Nigeria (AMCON) in July, 2010 to provide a lasting solution to the recurring problems of nonperforming loans that bedeviled Nigerian banks.

The importance of credit risk management to the survival of banks posed a great debate on the extend of relationship between credit risk management and financial performance of banks in finance literature which represents a topic of great importance to finance scholars, professionals, banks and bank regulators. In a bid to survive and maintain an adequate profit level especially in a highly competitive environment, banks have tended to take excessive risk by granting credit, which may increase the tendency for greater risk exposures. To this end, banks are exposed to high default risk which reduces their performance level as a result of high non-performing loans and low loan quality. Meanwhile, in an effort to guard against loan losses and maintain favourable financial performance, banks are expected to make provisions so that loan losses can be absorbed from the provisions. Younis (2012) maintained that if the loan loss provision is higher than the expected loss incurred, the financial performance of the bank will increase and on the other hand, if the loan loss provision is less than the expected loss incurred, the bank is going to have unfavourable financial performance. Moreover, if the provisions are not able to cover the whole spectrum of potential loan defaults, then the bank will need to cover the excess loss from its capital.

Therefore, a bank has to hold adequate capital to guard against unexpected losses, both on individual exposures and the portfolio in entirety so that the excess capital can be used to absorbed the losses that can arise and the bank will maintain desirable performance level. Athanasoglou, Delis and Staikouras (2006) concludes that variations in banks financial performance are largely attributed to variations in credit risk, since increased exposures to credit risk is normally associated with decreased financial performance. However, business grows

mainly by taking risk as the greater the risk, the higher the financial performance and hence an entity must strike a trade-off between credit risk and financial performance.

1.2 Statement of the Research Problem

The financial institutions around the globe faced difficulties over the years for a number of reasons. In light with this assertion, Njanike (2009) and Rasiah, Kim and Subrarnanian (2012) noted the major cause of serious banking problems continues to be directly related to weak and lack of adherence to credit standards for borrowers and counterparties, poor portfolio risk management, and/or lack of attention to changes in economic or other circumstances that can lead to a deterioration in the credit standing of a bank's counterparties.

The success and growth of deposit money banks depend on its ability to manage its credit effectively and the inability to manage its credit risk very well has resulted in illiquidity, insolvency and the collapse of banks. Today, some banks have crumbled as a result of mismanagement of credit. Anthony (1997) argued that credit risk management has a significant impact on the profitability of Nigeria banks. Therefore, management need to be cautious in setting up a credit policy that might not negatively affects profitability and also they need to know how credit policy affects the operation of their banks to ensure judicious utilization of deposits.

The studies conducted in Nigeria have showed mixed results on the effect of default rate on financial performance. Rufai (2013) found a significant negative effect, Muritala & Taiwo (2012) and Charles & Kenneth (2013) failed to establish a significant effect mainly because of the time period they use for the study. Meanwhile, Kurawa and Garba (2014) and Abiola and Olausi (2014) found a significant positive effect between default rate and financial performance. The impact of capital adequacy on financial performance of banks also showed mixed result. Soyemi, Akinpelu & Ogunleye (2013) and Fredrick (2014) reported a significant negative effect, Charles and Kenneth (2013) reported significant positive impact while Olalekan & Adeyinka (2013), Kurawa & Garba (2014) and Abiola and Olausi (2014) failed to establish a significant impact. This mixed result reported can be attributed to the recapitalization policy of Nigerian banks to 25 billion naira by the CBN that resulted in raising fictitious capital by banks in the

stock exchange. Therefore, there is need for a study to be conducted in an emerging market such as Nigeria to understand the potential consequences of the effect of credit risk management on financial performance of banks before and after the global financial meltdown.

In a bid to maximize shareholders wealth and ensure safety of depositors fund, banks act as delegated monitors on behalf of lenders (depositors) using various innovations, technologies and procedures to enforce credit contracts. These measures notwithstanding, banking operations are still exposed to some inherent risks including borrower's outright default; unwillingness or inability to meet credit commitment due to the vagaries of business activities or other environmental dynamics (Berger & Bouwman, 2013). Credit management frameworks therefore become imperative tools in decision-making that relates to loan-pricing, delegating lending powers, mitigating or migrating as well as managing incidences of credit risk on bank portfolio (Spedding & Rose, 2008).

1.3 Objectives of the Study

The main objective of this study is to examine the effect of credit risk management on the financial performance of listed deposit money banks in Nigeria. However, the specific objectives of this study are to:

i. determine the effect of default rate on the financial performance of listed deposit money banks in Nigeria.

ii. evaluate the impact of loan loss provisioning on the financial performance of listed deposit money banks in Nigeria.

iii. assess the effect of capital adequacy ratio on the financial performance of listed deposit money banks in Nigeria.

1.4 Research Questions

From the foregoing, the study attempts to answer the following research questions:

i. What is the effect of default rate on the financial performance of listed deposit money banks in Nigeria?

ii. Does loan loss provisioning affect the financial performance of listed deposit money banks in Nigeria?

iii. What is the effect of capital adequacy ratio on the financial performance of listed deposit money banks in Nigeria?

1.5 Research Hypotheses

Based on the research question and objective of the study, the following hypotheses are formulated

i. Default rate has no significant effect on the financial performance of listed deposit money banks in Nigeria.

ii. Loan loss provisioning has no significant impact on the financial performance of listed deposit money banks in Nigeria.

iii. Capital adequacy ratio has no significant effect on the financial performance of listed deposit money banks in Nigeria.

1.6 Significance of the Study

From the above submissions, and the importance that is placed on the management of credit risk in an economy, various rules and regulations has been promulgated to see to the success and survival of banks globally. The Basel capital accord was issued by the Base Committee on Banking Supervision (BCBS) emphasizing that bank should hold adequate capital and have an effective credit risk management technique. In addition to compliance with Basel Accord, the Central bank of Nigeria adjusted certain sections of the accords to reflect the peculiarities of the Nigerian environment and issued prudential guidelines in order to save the banks that are in distress and to increase the financial stability of the banking sector in the country.

Consequently, this study will be of significance by contributing to the body of empirical study literature on the effect credit risk management on financial performance in the banking industry especially in an emerging market such as Nigeria; empirically, methodologically and theoretically. Empirically, the study will make a modest contribution to the credit risk management literature in Nigeria. Methodologically, the use of Breusch Pagan LM test for random effect and the F-test for fixed effect will shed more light on the choice between random effect, fixed effect and pooled OLS for panel effect so that the right inference on the nature of data can be drawn. Theoretically, this study uses some theories of credit risk management to help explain the findings of the study by aligning credit risk management with the relevant theories.

Similarly, it is expected that findings from this study will be of significance to customers (depositors), the public and the regulatory authorities. Confidence to the depositors that their money is safe; to the public that the bank will be, or is, in a position to give genuine consideration to their credit needs and other banking needs in good as well as in bad times and to the regulatory authorities that the bank is, or will remain, in continuous existence and is financially viable. Lastly, findings from this study will be of use to other researchers in the academic environment in conducting further research.

1.7 Scope of the Study

This study evaluates the effect of credit risk management on the financial performance of listed banks in Nigeria. The study covered the data for the period of 12 years (2007-2018). The banks that will be included in the study are those that are listed on the floor of the Nigerian stock exchange on or before 1st January 2007 so that there will be a complete set of annual report and account for the study period. Return on asset and return on equity are used to measure financial performance while default rate, loan loss provision and capital adequacy ratio are used to measure credit risk management.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

This chapter presents a review of related literature on the area of study. Issues on which the review covers include; the concepts of credit, risk and credit risk, performing and non-performing loan, capital adequacy, capital adequacy theories, risk weighted asset, loan loss provisioning, credit risk management, credit risk management strategies, the concept of financial performance and review of related empirical studies on credit risk management and financial performance.

2.2 Concept of Credit

Credit is the trust which allows one party to provide resources to another party where that second party does not reimburse the first party immediately (thereby generating a debt), but instead arranges either to repay or return those resources (or other materials of equal value) at a later date. The resources provided may be financial (granting a loan), or they may consist of goods or services (consumer credit). Credit encompasses any form of deferred payment that is extended by a creditor, also known as a lender, to a debtor, also known as a borrower.

The concept of credit can be traced back in history and it was not appreciated until and after the Second World War when it was largely appreciated in Europe and later to Africa, it does not necessarily require money (Moti, Masinde, Mugenda & Sindani, 2012). However, in modern societies credit is usually denominated by a unit of account. The importance of credit in the economic growth and development of a country cannot be overemphasized. Therefore, Aremu, Suberu and Oke (2010) pointed out that credit facilitates the transfer of capital or money from where it is less needed to where it will be most effectively and efficiently used; and credit economizes the use of currency or coin money as granting of credit has a multiplier effect on the volume of currency or coin in circulation.

From the foregoing definitions above, it can be deduced that credit does not only include the granting of loan in the form of money only, but also it includes loan in the form of goods,

services and securities that are transferred from the surplus unit to the deficit unit so that it can be effectively and efficient utilized. In whatever form, the credit entails the promise to repay at a later future date by the borrower either in full or in installment. By so doing credit has the effect of revitalizing the economy to achieve the desired economic growth and development. However, despite the important role played by credit in economic growth and development of the country, it is however associated with a number of risks.

2.2.1 Risk and Credit Risk

As stated earlier, the main activity and source of revenue for banks is the granting of credit and it makes up a huge amount of banks activity that makes them exposed to a number of risks. As the amount of credit increases, the more exposed the banks are to default of non-payment. Therefore, CIMA Official Terminology (2005) defined risk is a condition in which there exists a quantifiable dispersion in the possible outcomes from any activity. That is, risk is the uncertain future events which could influence the achievements of the organization's strategic, operational and financial objectives. Abayomi and Oyedijo (2012) defined risk as the possibility of suffering some harm or loss which means there is the probability of a loss occurring whenever the future is uncertain. This can be said that when a bank grants credit facility for a project, risk is involved because the future repayment is uncertain.

Risk analysis and corporate risk management activities have become very important elements for both financial as well as non-financial corporations. Therefore, risk can also be seen as a deviation from the expected and the possible variation in outcomes. This shows that risk is a vital and challenging concept of daily lives which makes it a conscious assertion in the hearts of risk. In finance, risk is the chance that the return achieved on an investment will be different from that expected, and also takes into account the size of the difference which can be negative or positive (Opoku-Adarkwa, 2010). Consequently, Poudel (2012) defines risk as the chance that an investments actual return will be different than expected in which part of the investment or all the investment might be lost. Thus, it includes the possibility of losing some or all of the original investment.

Credit risk can be seen as the risk that money owed is not repaid, has been rampant in the banking history. Fun Ho and Yusoff (2009) defined credit risk as the possibility that a bank borrower or counterparty will fail to meets it obligations in accordance with the terms and conditions of repayment. So also, Johnson (1971) defined credit risk as losses from the refusal or inability of credit customers to pay what is owed in full and on time. Thus it can be deduced that credit risk is the exposure faced by a bank when a borrower defaults to honour the debt obligation on due date or maturity.

Naomi (2011) defined credit risk as the potential variation in the net income from nonpayment or delayed payment of credit facility granted to customers. Similarly, Lapteva (2009) sees credit risk as the risk of a credit institution suffering losses due to default, late or incomplete execution of the debtor financial obligations before the credit organization in accordance with the terms of the contract. Credit risk does not necessarily occur in isolation. It emanates from banks dealing with individuals, corporate bodies, other financial institutions and or sovereign entities which are the largest and most obvious source of risk for banks. However, Fun Ho & Yusoff (2009) maintained that the same source that endangers banks from credit risk may also make them prone to other risk; a bad portfolio may cause liquidity risk as well as credit risk. More so, Li (2012) noted that credit risk, poor asset quality and low levels of liquidity are the major causes of bank failures.

Altman, Resti & Sironi (2003) and Brown & Moles (2011), noted that Credit risk is also variously referred to as default risk, performance risk or counterparty risk and that there are three characteristics that define credit risk: Exposure to a party that may possibly default or suffer an adverse change in its ability to perform, the likelihood that this party will default (or the default probability) on its obligations and the recovery rate (that is, how much can be retrieved if a default takes place). The larger the first two elements, the greater will be the exposure. On the other hand the higher the amount that can be recovered, the lower the risk. Formally, credit risk can be expressed as:

Credit risk = Exposure X Probability of default X (1 —Recovery rate)

In the same vein, Raghavan (2003) outlined credit risk to consist of primarily two components; the quantity of risk and the quality of risk. The quantity of risk is the outstanding loan balance as on the date of default and the quality of risk is the severity of loss defined by both Probability of Default as reduced by the recoveries that could be made in the event of default. Thus credit risk is a combined outcome of Default Risk and Exposure Risk.

2.2.2 Performing and Non-performing loan

A loan that is not in or near default; According to the International Monetary loan is any loan in which: interest and principal payments are less than 90 days' worth of interest has been refinanced, capitalized, or delayed continued payment is anticipated. All conditions must be present for a loan However, the specific definition is dependent upon the loan's particular terms. As defined by the Federal Financial Institutions Examination Council, a loan that is less than 90 not been placed on nonaccrual, or is not in workout status.

A loan on which the borrower is not making interest payments or repaying any principal. At what point the loan is classified as non-performing by the bank, and when it becomes bad debt, depends on local regulations. Banks normally set aside money to cover potential losses on loans (loan loss provisions) and write off bad debt in their profit and loss account. In some countries, banks that have accumulated too many NPLs are able to sell them on - at a discount - to specially established asset management companies (AMCs), which attempt to recover at least some of the money owed. As pointed out earlier, loan (credit) refers to a contract promise between two parties where one party, the creditor agrees to provide a sum of money to a debtor, who promises to return the said amount to the creditor either in one lump sum or in installments over a specified period of time. Therefore, Raghavan (2003) observed that credit has the potentiality of being paid all in full, probability of default before payment is made complete or the probability of not paying at all, When any of these occur, the bank is said to have a performing or non-performing loan. According to the Prudential guideline issued by the Central Bank of Nigeria (CBN, 2010), Credit facilities which include; loans, advances, overdrafts, commercial papers, bankers acceptances, bills discounted, leases, guarantees, and other loss contingencies connected with a bank's credit risks should be classified as either performing or non-performing.

Loans that are outstanding in both principal and interest for a long time contrary to the terms and conditions contained in the loan contract are considered as non-performing loans. According to the prudential guideline issued by the Central Bank of Nigeria (CBN, 2010), a credit facility should be deemed as non-performing if; interest or principal is due and unpaid for 90 days or more and or interest payments equal to 90 days interest or more have been capitalized, rescheduled or rolled over into a new loan. Further stating, when a loan rescheduling is agreed with a customer, the rescheduling should be treated as a new facility but provisioning should continue until it is clear that rescheduling is working at a minimum, for a period of 90 days. Reversal of interest previously suspended and provision against principal previously made should be recognized on a cash basis.

Stuart (2005) stressed that the spate of bad loans was as high as 35% in Nigerian Deposit Money Banks between 1999 and 2009. Umoh (1994) and Boahene, Dasah and Agyei (2012) pointed out that increasing level of non-performing loan rates in banks' books, poor loan processing, undue interference in the loan granting process, inadequate or absences of loan collaterals among other things, are linked with poor and ineffective credit risk management that negatively impact on banks profitability. Consequently, Kargi (2011) noted that once a loan is been classified as non-performing, the bank should start to take steps to recover the principal and in the case of the loan backed by an asset, the asset can be seized, denying loan to especially risk borrowers and charging higher interest rates to borrowers with lower credit scores.

In the prudential guideline (CBN, 2010), the tolerable limit of ratio of non-performing loans to gross loans (NPL ratio) is 10%. 'Where the proportion of non-performing credits to total credits is 10% above the tolerable limit of 10%, the CBN shall request for action plan from management of the bank affected to address the problem within 6 months and the CBN may conduct a special target examination to determine the factors responsible for the non performing credits.

2.2.3 Capital Adequacy

Growing competition among financial institutions combined with fluctuation in economic activities has put a tremendous pressure on banks. This has led to the issue of capital adequacy requirement for these banks for their survival and effective performance. Mitchell (1984) noted

that bankers, the agents of bank shareholders, try to maintain capital adequate to attract deposits and ensure profitability. Similarly, bank supervisors try to maintain adequate capital to protect the depositors fund and to promote a sound and vibrant financial system as a whole (Chishty, 2011 and Pessarossi & Weill, 2013). Therefore, this led for the supervisors of banks to regulate the amount of capital to be held by them. Prudential regulation are often enacted which impose regulatory capital requirements in order to create the necessary cushion to protect banks against unexpected losses and ultimately failure.

A primary impact of a capital adequacy requirement is *its* influence on bank efficiency, which has proven to be one of the most direct contributors to financial stability via its effects on bank failures, future problem loans, and risk-taking (Pessarossi & Weill, 2013). Therefore, adequate capital requirement is expected to perform two main duties. First, as it serves as a risk cushion function (buffer) against losses, this protects depositors and limits the recourse to deposit insurance. Second, they limit the moral hazard issue of shareholders incentive to take on excessive risk in order to maximize share value. Similarly, Oladehinde & Abiodun (2011) posited that there are three arguments for capital adequacy regulation. The first is that capital adequacy regulation is needed for prudential reasons, but most advocates of this position take the argument no further to explain why prudential need is there in the first place. The second argument is that capital adequacy regulation is needed to counter moral hazard problems created by the regulator themselves. The third and final argument is that capital adequacy regulation is needed to protect small depositors. However, Berger & Bouwman (2013) pointed that bankers, often argue that holding more capital would jeopardize their performance due to less lending.

Capital adequacy by definition is seen as a quantum of fund, which a financial institution should have and plan to maintain in order to conduct its business in a prudent manner (Kishore 2005). Similarly, Oladehinde & Abiodun (2011) defined adequate capital as the amount of capital that can effectively discharge the primary function of preventing banking industries failure by absorbing losses. Akintoye & Somoye (2008) defined capital adequacy as the least amount necessary to inspire and sustain confidence in the banks, keep it open and operating so that time and earnings can absorb losses without being forced into costly liquidation and enable banking industry to take full advantage of its profitable growth opportunities.

2.2.4 Risk Weighted Asset

The Easel Capital Accord, or the agreed framework on international convergence of capital measurement and capital standards of the Committee on Banking Regulations and Supervisory Practices (Basle Committee), is based on a concept of weighting both on- balance sheet assets and off-balance sheet exposures according to their perceived level of risk. The sum of risk weighted assets and risk assessed off-balance sheet exposures is related to a bank's capital base and the resulting "risk asset ratio" is used as a measure of capital adequacy. The risk-based approach to capital adequacy focuses on credit risk that is the risk that the counterparty in any given transaction will default.

This point announces the launch of a new quarterly statistical release of aggregate regulatory capital data, on 16th December 2016. The release will present recent developments in levels of capital and risk-weighted assets since Q1 2014 for the UK banking sector, as well as more detailed breakdowns of the movements in different tiers of capital and risk exposure types. The European legislative enactment of Basel III, the Capital Requirements Directive (CED) IV and the Capital Requirements Regulation, sets out the European Union's prudential rules for banks, building societies and some investment firms. The principal aim of the rules is to increase the resilience of the banking sector against crisis by strengthening capital requirements. Article 99 of CRR requires firms to report data on their own funds (capital) adequacy and own funds requirements based on credit, market and operational risks in the precise format and frequency set out in the European Banking Authority's *Implementing Technical Standards on Supervisory Reporting* (ITS). The ITS is the basis for the European Common Reporting (CORIEP) framework for CRD IV capital adequacy reporting, on which regulated firms began reporting from Q1 2014.

From December 2016, the Bank of England will publish quarterly statistical releases of capital ratios and aggregates compiled using COREP data. The releases will be accompanied by a spreadsheet of the data contained in the release, with a time series going back to Q 1 2014. It is anticipated that the content of this release, and the range of releases of aggregated data and indicators, will be expanded over time.

Risk-weighted asset is a bank's assets or off-balance sheet exposures, weighted according to risk. This sort of asset calculation is used in determining the capital requirement or Capital Adequacy Ratio (CAR) for a financial institution. In the Basel I accord published by the Basel Committee on Banking Supervision, the Committee explains why using a risk-weight approach is the preferred methodology which banks should adopt for capital calculation to be that it provides an easier approach to compare banks across different geographies and off-balance-sheet exposures can be easily included in capital adequacy calculations banks are not deterred from carrying low risk liquid assets in their books. According to CBN (2010) prudential Guideline the minimum ratio of capital to total risk- weighted assets shall remain at 10 per cent as prescribed in the circular BSD/l 1/2003 issued on August 4, 2003. Furthermore, at least 50 per cent of a bank's capital shall comprise paid-up capital and reserves, while every bank shall maintain a ratio of not less than 1:10 between its adjusted capital hinds and total credit net of provisions. However, banks are encouraged to maintain a higher level of capital commensurate with their risk profile. Olalekan & Adeyinka (2013) observed that the average Capital Adequacy Ratio (CAR) of the banks in Nigeria was consistently above the stipulated minimum of 10 per cent in the first half of 2012.

From the above submissions, given the capital requirement to be maintained by a bank, the capital adequacy should be calculated based on the risk a bank takes. That is to say, the risk weighted asset approach is preferred because it takes recognition of on balance sheet assets and off balance sheet exposures weighted against the risk a bank takes. Consequently, a bank should maintain a high level of capital in relation to their risk profile.

2.2.4.1 Risk-weighted assets by risk type

This section will present a breakdown of total risk-weighted assets in the UK banking sector into different types of risk exposure. The breakdown of risk type is in line with that in COREP template CA2, in which firms report their risk exposure amounts by exposure type. The release's breakdown contains five types of exposure: credit and counterparty risk, market risk, operational risk, credit valuation adjustment and 'other' risk where 'other' comprises all other exposure types under CRD IV, including settlement risk, fixed overhead, and excess large exposures. Again, these aggregates will be presented on a transitional basis. Lastly, this section will contain

a chart showing the quarter-on-quarter change in the composition of risk-weighted assets by risk type.

2.2.4.2 Loan Loss Provision

Policy makers and bank regulators emphasize the benefits of timelier loan loss provisioning for both reporting banks and the overall financial system. Dou, Ryan & Zou (2013) asserted that delays in loan loss provisions during good economic times, rendering banks less well capitalized and thus less willing to originate loans when the business cycle turns down. Consequently, Wall & Koch (2000) noted that if a bank's loan-loss allowance exceeds its expected credit losses, the bank can absorb more unexpected losses and if loan-loss allowances is less than expected losses it will ultimately reduce the bank's equity capital. Therefore, such a deficit in the loan-loss allowance implies that a bank's capital ratio overstates its ability to absorb unexpected losses.

According to the prudential guidelines CBN (2010), banks should make general loan loss provisions of at least 2 per cent of loan portfolio not specifically provided for, in addition to specific provisions under the non-performing loan, to provide against the unidentified losses which are known to exist in any portfolio using a systematic method which should be consistently followed from period to period. When IFRS is adopted in Nigeria, banks would be required to make provisions for loans as prescribed in the relevant IFRS Standards. And that IFRS provisions should be compared with provisions under prudential guidelines and if the Prudential Provisions is greater than IFRS provisions; the excess provision should be retain in non-distributable regulatory reserves and if Prudential Provisions is less than IFRS provisions, additional provisions should be made and charge to income statements. Conclusively, loan loss provisioning is the amount of set aside out of the profits made by a bank so that normal losses can be absorbed in the period it is incurred. If the loan loss provisions exceed its expected credit losses, the bank can absorb more unexpected losses and if a loan loss provision is less than expected losses it will ultimately reduce the bank's equity capital. Consequently, loan loss provision is regarded to be part of the capital of a bank.

2.2.5 Credit Risk Management

Banks play an important role for economic development, and in fostering economic growth of any country through their intermediation role and financial services that they provide to the needy individuals. Banks originally emerged as deposit takers and later they metamorphosized into intermediates of funds by transferring fund from the surplus sector to the deficit economic sector in the form of loan. Granting of credit became the main business of banks and it became the main source of income for this banks. And in that process, the banks start assuming credit risks as a result of default or non-payment. As was stated by the bank of Bangladesh, credit risk accounts for more than 50% of total risk elements in banks and other financial institutions (Bank of Bangladesh, 2009).

Saunders & Allen (2002) posited that to the extent that there has been a permanent or structural increase in bankruptcies worldwide, possibly due to increase in global banking competition, accurate credit analysis becomes even more important now than in the past. Moreover, Abayomi & Oyedijo (2012) noted that empirical studies of banking crises all over the world have shown that poor assets quality (predominantly loan), inadequate institutional capacity, inefficient credit guidelines, inefficient board of directors, low capital adequacy ratios and liquidity, compulsory quota-lending as a result of government interference and lack of proper supervision has been the most frequent factors responsible for the bank failures. The Basel Committee (2000) pointed that specific credit risk management practices may differ among banks depending upon the nature and complexity of their credit activities, a comprehensive credit risk management program should be able to address four areas; establishing an appropriate credit risk environment, operating under a sound credit granting process, maintaining an appropriate credit administration, measurement and monitoring process and ensuring adequate controls over credit. These practices according to the committee should also be applied in conjunction with sound practices related to the assessment of asset quality, the adequacy of provisions and reserves, and the disclosure of credit risk.

From the foregoing definitions, it can be said credit risk management refers to the process by which all loans, advances, credit facilities granted by a bank to a customer are administered to ensure that the facilities run satisfactorily according to the terms governing them and are

ultimately repaid on due date. That is, the cause of the risk has to be identified, the extent of the risk has to be evaluated and decisions made as to how this risk is to be managed. More so, credit risk management involves putting in place a well-articulated framework that can minimize or eliminate credit risk exposures faced by banks and if the exposure is un-avoided, the framework should be able to point directly to the potential consequences of such exposures.

2.2.6.1 Credit Strategies/Policies to Credit Risk Management

The strategy adopted by a bank in managing credit risk will determine the credit policy of such a bank. It also predicts and spells out how a bank can recover loans so as to ensure survival and profitability. Therefore, Kolapo, Ayeni and Oke (2012) outline the following strategies for credit risk management.

Credit derivatives provide banks with an approach that does not require them to adjust their loan portfolio. Credit derivatives provide banks with a new source of fee income and offer banks the opportunity to reduce their regulatory capital (Shao & Yeager, 2007). The commonest type of credit derivative is credit default swap whereby a seller agrees to shift the credit risk of a loan to the protection buyer. Secondly, Credit Securitization which is the transfer of credit risk to a factor or insurance firm and this relieves the bank from monitoring the borrower and fear of the hazardous effect of classified assets. This approach insures the lending activity of banks. The growing popularity of credit risk securitization can be put down to the fact that banks typically use the instrument of securitization to diversify concentrated credit risk exposures and to explore an alternative source of funding by realizing regulatory arbitrage and liquidity improvements when selling securitization transactions.

2.2.6.2 **Traditional Method to Credit Risk Management**

It is hard to differentiate between the traditional approach and the new approaches since many of the ideas of traditional models are used in the new models (Abayomi & Oyedijo, 2012). Under the traditional approach, they identified the expert systems, artificial neural networks, internal rating at banks and credit scoring systems approaches to credit risk management.

In the expert system, the credit decision is left in the hands of the branch lending officer. His expertise, judgment, and weighting of certain factors are the most important determinants in the decision to grant loans, the loan officer can examine as many points as possible but must include the five "Cs" these are; character, credibility, capital, collateral and cycle (economic conditions). In addition to the 5 Cs, an expert may also take into consideration the interest rate. Under the Artificial Neural Networks, due to the time consuming nature and error- prone nature of the computerized expertise system, many systems use induction to infer the human expert's decision process. The artificial neural networks have been proposed as solutions to the problems of the expert system. This system simulates the human learning process. It learns the nature of the relationship between inputs and outputs by repeatedly sampling input/output information.

However, over the years, banks have subdivided the pass/performing rating category used in Internal Rating at Banks, for example, at each time, there is always a probability that some pass or performing loans will go into default, and that reserves should be held against such loans. While under the Credit Scoring Systems a credit score is a number that is based on a statistical analysis of a borrower's credit report, and is used to represent the creditworthiness of that person. A credit score is primarily based on credit report information. Lenders, such as banks use credit scores to evaluate the potential risk posed by giving loans to consumers and to mitigate losses due to bad debt. Using credit scores, financial institutions determine who are the most qualified for a loan, at what rate of interest, and to what credit limits.

2.2.6.3 Quantitative approaches to credit risk management

Rufai (2013) identified four methods by which credit risk can be managed. Firstly, which policy Strategy which entails the use of credit policy manual which should be updated regularly to meet the changing business environment. The manual should contain the rules and regulations guiding the granting of credit and ensure regulatory compliances. The risk based audit system which advised banks to put in place system which should play an important role in bringing effectiveness in credit risk management and control system as also to help in ensuring regulatory compliances by providing high quality counsel to bank's management.

The other two methods are using ratios such as liquidity ratios, leverage ratio, efficiency ratio, profitability ratios and equity related ratios, and the Credit risk models such as Altman's Z-Score, KMV credit monitor model, Risk Adjusted Return on Capital (RAROC) model and Value at risk model. Portfolio theory emphasizes on loan diversification so as to reduce loan concentration, thereby reducing excessive credit losses and ensure high loan recovery rate. Prospect theory explains if performance is below a given target level, decision makers should be risk seeking, and when performance is above the target level, they should be risk-averse, while all the three capital adequacy identified centered on holding a substantial capital that can absorb loss from non- performing loans borne by the parties involved in the loan process.

From the approaches to the management of credit risk identified, they can be categorized into two distinct approaches. The first is the traditional systems which rely on internal and external rating policies that are aimed at evaluating the credit worthiness of customers. And the second modern methods which only not rely on the credit worthiness of customers, but also rely heavily on quantitative approach to credit risk management. The approach depends on the data provided. More so, this method encompasses in its process both the traditional method and the quantifiable methods to credit risk management.

2.2.7 Financial performance

Financial performance and liquidity are among the most important concern for the company's management. Financial performance serve as a means in which the performance of those entrusted with the resources of an organization is evaluated and as such management gives a lot of attention to this financial performance measure. Moghaddam & Moballeghi (2011) stated that financial performance measures indicate whether the company's strategy, implementation, and execution of objectives are contributing to the performance of the organization. Thus typical financial goals have to do with financial performance of a company. Moreover, Tabari, Ahmadi & Emami (2013) observed that financial performance is a parameter which shows management approach and competitive position of bank in market-based banking.

In the banking industry, the most frequently financial performance measure used are Return on Assets (ROA), Return on Equity (ROE) and Net Interest Margin (NIM). Net interest margin

gives the idea of how well a bank is doing. However, it does not adjust for bank size, thus making it difficult to compare how well one bank is doing relative to another. Meanwhile, the financial performance that correct for size is the ROA. For any bank, ROA depends on the banks policy decisions as well as uncontrollable factors relating to the economy and government regulations. Many regulators believe that ROA is the best measure of bank financial performance (Hassan & Bashir, 2003). Rivard and Thomas (1997) suggested that bank financial performance is best measured by ROA in that ROA is not distorted by high equity multipliers and ROA represents a better measure of the ability of the firm to generate returns on its portfolio of assets. It gives an idea as to how efficient management is using its assets to generate earnings. Kutsienyo (2011) noted that the problem with ROA is that it excludes from the total assets off-balance sheet items (for instance, assets acquired though a lease) thereby understating the value of assets. This can eventually create a positive bias where ROA is overstated in the evaluation of bank financial performance.

However, ROE is commonly used in conjunction with ROA and have been used extensively as measures of financial performance. Despite the short coming of these measures mentioned above, Shil (2009) observed that other performance measures should not entirely replace the traditional measures since Return on Asset (ROA) and Return on Equity (ROE) have incremental value in monitoring firm performance. More so, Alam and Nizamuddin (2012) noted that among all traditional financial performance measures, Return on Equity (ROE) and Return on Asset (ROA) are very common and relatively good performance measure.

2.3 Empirical Review on Credit Risk and Performance

Kargi (2011) examine the impact of credit risk on the profitability of Nigerian banks, using five years' data for the period of 2004-2008. The study examines the relationship through the use of descriptive statistics, correlation analysis, as well as regression analysis. It was established that credit risk management has an important role in the profitability of Nigerian banking sector. The study supports the claim that profitability of bank is negatively controlled by loans and advances, non-performing loans, and deposits levels, thus exposing banks to huge risk of illiquidity and distress. Nawaz and Munir (2012) evaluate the impact of credit risk on the profitability of banks in Nigeria for the period 2004-2008 using descriptive statistics, correlation and Ordinary Least Square regression technique. The result of non-performing loan to loan and advances ratio was

found to have a significant negative impact on profitability measured using return on asset. More so, total loan to total deposit ratio was found to have a negative significant effect on profitability.

Meanwhile, in an effort to investigate the effect of credit risk on the performance of 5 commercial banks in Nigeria for the period 2000-2010, Kolapo, Ayeni & Oke (2012) used panel data regression of fixed effect model and ordinary least square for data analysis. A significant negative effect was found between non-performing loan and loan loss provisioning with profitability measured using return on assets. While a significant positive effect was established between loan and advances with profitability.

Muritala and Taiwo (2013) evaluate the impact of credit risk management on profitability of 5 commercial banks in Nigeria for the period 2006-20-12 with. Descriptive statistics and multiple regression model of panel least square (PLS) were employed for data analysis and the problem of stationery were solved using Levin, Lin and Chun root test. The result form the analysis shows that total loan to total asset ratio has a significant and negative impact on profitability measured using return on assets while non-performing loan to total loan was found not to be significantly impacting profitability despite having a negative relationship. In another study carried out in Nigeria, Charles & Kenneth (2013) examine the impact of credit risk management and capital adequacy on the financial performance of 6 money deposit banks for the study period 2005-2009. Panel data regression analysis of pooled OLS and fixed effect model were employed for data analysis. Loan and advances was found to significantly impact profitability measured using return on asset negatively while capital adequacy ratio positively and significantly impact profitability. Non- performing loan, loan loss provisioning and liquidity were found not to impact profitability.

In the same vein, Oluwafemi, Adebisi, Simoeon & Olawale (2013) examine the effect of risk management on the financial performance of banks in Nigeria for the period 2006- 2009 using correlation and panel data of time series and cross sectional. Three measures of profitability were employed which are return on assets (ROA), return on equity (ROE) and return on capital employed (ROCE). Cost of bad loan was found to have a significant negative effect on ROA and ROCE while not significant with ROE. A positive and significant effect was found between debts to equity ratio with the three measures of profitability. While non-performing loan, equity

to loan ratio, equity to total asset ratio and liquidity have no significant effect on all measures of profitability employed. From the empirical review, the numbers of empirical studies conducted on the effect of credit risk management in Nigeria are very few given the importance of banks and credit risk management in an economy. The financial crises that characterized the banking industry globally demonstrated the need for greater attention to be given to the dynamic effect of credit risk management on the financial performance of banks in Nigeria. Consequently, the high level of non-performing loans, poor loan quality and the raising fictitious capital by Nigerian banks that pointed weak credit risk management practice compels scholars, practitioners, regulators and academicians to criticality look at the credit risk management framework in other to proffer solutions on the effect of credit risk management on financial performance of Nigerian banks. The review also pointed out the need for an employment of return on asset and return on equity to be used to measure financial performance of banks, given the few number of studies conducted in Nigeria, the huge asset held by banks and the financial importance of banks. Hence, the need to look at the effect of credit risk management from the angle of returns attributed to asset employed and the amount of capital invested by banks in Nigeria.

Sufian and Chong (2008) examine the determinants of profitability of banks in the Philippines for the period 1990-2005. Descriptive statistics, correlation and multivariate regression technique of the fixed effect model and random effect model were employed for data analysis. Among the determinants identified, the result from the analysis shows that loan loss provisioning to total loan ratio and bank size has a significant negative effect on profitability measured using return on assets.

The studies of Hosna, Manzura and JuanJuan (2009) investigated the impact of credit risk management on the profitability of four commercial banks in Sweden for the period 2000-2008. Profitability was measured using return on equity while credit risk management proxy are non-performing loan measured using non-performing loan to total loan ratio and capital adequacy ratio measured using total equity to total assets. The data from the secondary source was analyzed using multiple linear regression technique and the result shows that non-performing loan has a negative significant impact on profitability while capital adequacy ratio has no significant impact on profitability. In an effort to measure the effect of credit risk management on the profitability of banks for the period 2004-2008, Kihtinji (2010) used multiple linear

regression technique for analysis. The result from the analysis showed that both proxies of credit risk management have no significant effect on profitability. Credit risk management was measured using the ratio of loan and advances to total asset and the ratio of non-performing loan to total loans.

In Nepal, Poudel (2012) investigate the impact of credit risk management on the financial performance of banks for the period 2001-2011 using descriptive statistics, Pearson correlation and regression technique. Credit risk management is measured using default rate capital adequacy ratio and cost per asset while profitability was measured using return on assets. The result from the analysis showed a negative and significant impact of default rate and capital adequacy ratio on profitability while no significant impact was established between cost per asset and profitability.

In Indonesia, Syafri (2012) analysed the factors that affect the profitability of commercial banks in Indonesia using pooled data regression for the period 2002-2011. The factors which affect profitability identified in the study which are loan to total assets ratio, total equity to total assets ratio and loan loss provision to total loan ratio have a significant positive impact on profitability treasured using return on assets. In a similar fashion, Mustafa, Ansari & Younis (2012) examine the impact of loan loss provisioning on the performance of 15 banks in Pakistan for the period 2001-2009. Descriptive statistics, correlation and panel data of fixed effect model and random effect model was employed for data analysis in which only loan loss provision to total asset ratio showed a significant negative effect on profitability measured using return on asset and the ratio of total advances to total assets showed a positive significant impact on profitability. However, in Ghana, Boahene, Dasah and Agyei (2012) assess the impact of credit risk on the profitability of 6 commercial banks for the period 2005-2009 using descriptive statistics, correlation and the multiple regression technique of fixed effect model and random effect model in which the fixed effect model was found to be more robust. All the credit risk measures used in the studies were found to be positively and significantly impacting profitability measured using return on equity. The credit risk measures are net charge off to loan and advances ratio, non- performing loan to loan and advances and the ratio of pre-provision profit to loan and advances.

Mohana Rao and Lakew (2012) examine the key determinant of profitability of commercial banks in Ethiopia for the period 2000-2009. The data was analyzed using an unbalanced panel data of fixed effect model and random effect model in which the fixed effect model was found to be more robust. It was found that capital adequacy ratio and bank size are positively and significantly determining profitability. Loan loss reserve to total loan ratio was found not to be determining profitability. However, in an effort to establish the effect of credit risk management on the financial performance of 26 commercial banks in Kenya for the period 2007-2011, Mwangi (2012) employed descriptive statistics, Pearson correlation and multiple linear regressions. The findings from the analysis indicate that both credit risk management measures; non- performing loan and capital adequacy ratio were found to be negatively and significantly impacting financial performance measured using return on equity. Erina & Lace (2013) determine the impact of external and internal factors of banks on the profitability of Latvian banks for the period 2006-2011 using descriptive statistics, correlation and multiple linear regression technique. Profitability was measured using both return on assets and return on equity while among the internal factors examined are credit risk measured using non-performing loan to loan and advances ratio and capital adequacy ratio. Credit risk was found to have a negative and significant effect on both profitability measures while a negative and significant effect was found between capital adequacy ratio with ROA and positive significant effect with ROE.

In Ghana, Mills and Amowine (2013) examined the determinant of rural banks profitability for the period 2002-2012. The study employed the panel data regression technique and among the variables studied, ratio of loan loss provision ratio was found to have a significant negative effect on the profitability measured using ROA of rural banks in Ghana. However, Iluska (2014) examined the impact of the factors that affect bank profitability for the period 2008-2011 in Macedonia using OLS. Among the factors that were studied is the loan loss provision ratio and it was found to have a significant positive effect on ROA. Similarly, Tariq, Usman, Mir, Aman & Au (2014) examine the determinants of commercial banks performance in Pakistan for the period 2004-2010. Panel data methodology of pooled OLS, fixed effect and random effect was employed for analysis. Among the determinants studied, loan loss provision ratio was found to have a positive and significant effect on performance measured using ROE and NIM.

More recently, Azeem and Amara (2014) examine the impact of non-performing loan on the profitability of 16 major banks in Pakistan for the period 2006-20 12 using descriptive statistics, the panel data of fixed effect and random effect models. However, the fixed effect model was found to be more robust. Profitability was measured using return on assets, return on equity and stock returns. The result from the analysis indicates that non- performing loan has a negative significant effect on ROA and ROE while no significant effect was found with stock returns. In India, Narula & Singla (2014) assess the impact of non-performing assets on net profits of banks for the period 2007-2012 using descriptive statistics and correlation for analysis. The result from the correlation shows that there is a positive and significant impact of non- performing loan on net profits of banks in India.

In a conference proceeding, Frederick (2014) examine the impact of key internal factors affecting the performance of domestic commercial banks in Uganda for the period 2000- 2011 using multiple linear regression technique. Return on asset and return on equity were used as measures of performance and it was established that capital adequacy, measured as equity to total asset ratio and loan quality measured as the ratio of loan loss provision to total loan has a negative and significant effect on both ROA and ROE. No significant effect was found between total loan to total asset ratio with both measures of performance.

Gizaw, Kebede and Selvara (2015) examined the impact of credit risk on the profitability of banks in Ethiopia for the period 2001-2012 using panel data regression technique. It was found that ratio of non-performing loan has a negative and significant effect on both ROA and ROE, capital adequacy ratio have a negative and significant effect on ROE and loan loss provision have a significant positive effect on both ROA and ROE. No significant effect was established between ratio of loan and advances to total deposit with both measures of profitability. Apătăchioae (2015) present the theoretical support of the concepts of risk and profitability and the recent measures which had been taken to regulate them on the background of the recent economic crisis in Romania. Risks and performance are interrelated and a better definition of these concepts constitutes the basis of risk management. The analysis of banks' performance was carried out in terms of efficiency, productivity, competitiveness and profitability. The recent economic and financial instability have led central banks and other competent authorities to become more concerned with understanding the vulnerabilities of banking systems. Ghenimi,

Raei, Farhangzadeh, Safizadeh, and Raei (2016) investigate a sample of seven banks listed in Tehran Stock Exchange (TSE) whose data has been accessible between the years 2009 and 2014. Panel data multivariate regression method was used in this study. Results show that there is a significant relationship between credit portfolio diversification and risk; furthermore, it is the size that influences return on equity (ROE) and return on asset (ROA) of banks.

Chaibi, Ali and Omri (2017) examine the effects of liquidity risk and credit risk on bank stability from the MENA region. Their paper targets the main sources of banking fragility. They employed 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. Our results show 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. Mosk and Boz (2017) analyse theoretical and empirical studies that are going to be used on modelling the relationship between efficiency, capital and risk-taking behaviour of commercial banks operating in Albania during the period 2002-2014. Based on previous works worldwide, a three stage model is found to be a proper one for such analysis about Albanian banking system. What is the way that banks operating in Albania react to higher risk-weighted capital requirements and the impact that their choice will have to the economic growth will be the object of following papers. The theoretical and empirical literature support their assessments and explanations of regressions that might be found. The relation between risk and capital is found to be positive and simultaneous. The analysis of the efficiency cost shows the presence of inefficient banks in Albania. While analyzing the relationship between capital and risk, it is very important to take in consideration bank efficiency.

More recently, Donker Ng and Shao (2018) propose that relationship bankers are able to benefit their clients even after they indicate distress. Relationship bankers continually learn about their clients to reduce the asymmetric information problem, reduce adverse selection risk and manage loan risk. We examine the consequences of corporate disclosure, namely profit warnings, as a

negative information-releasing event during the normal course of business and evaluate the evolving nature of relationship banking before and after such an event. Findings show that lenders generally increase the cost of loans, loan security and reduce loan maturity after profit warnings. They conclude that relationship bankers efficiently use client information to provide effective financial intermediation, even after distress.

From the empirical review above, this has shown the wide gap in the academics literature between Nigerian studies and in other countries, thus pointing to the need of increase in studies on the effect of credit risk management on financial performance in Nigeria. One of the objectives of increasing the capital base of Nigerian banks is for them to be able to compete financially with the counterparts globally. However, the review revealed similar mixed results recorded by Nigerian studies. Therefore, implying the need for more studies to be conducted so that effective, efficient and lasting solutions problems associated with credit risk management will be brought to light. However, this study intends to fill the gap they examining the effect of credit risk on the performance of listed deposit money banks in Nigeria.

2.4 Theoretical Framework

As stated earlier, greater percentage of most banks earning come from the interest earned from loans and advances (credits) granted to customers. Therefore, banks should employ policies and strategies that would ensure effective management of the bank's loan portfolio. Moreover, a sound credit risk management strategy is important for banks so as to enhance profitability and guarantee survival. According to Lindergren (1987), as cited by Kolapo, Ayeni and Oke (2012), the key principles in credit risk management process are sequenced as follows; establishment of a clear structure, allocation of responsibility, processes have to be prioritized and disciplined, responsibilities should be clearly communicated and accountability assigned. Therefore, the theoretical framework in this study is pinned down to theories and strategies/mechanisms that explain the credit risk management to be adopted by a bank. Under the theory, the portfolio theory, the prospect theory and buffer theory, deposit insurance theory and expense theory of capital adequacy are identified while under the strategies; the credit policy to be adopted traditional methods to credit risk management and quantitative methods to credit risk management were identified.

2.4.1 Portfolio Theory

Among the theories that explain credit risk management is the portfolio theory. The modem portfolio theory was proposed in the work of Harry Markowitz in 1952 which states that a bank only profits from the interest gained on a successful loan repayment form successful diversification of loan portfolios. It relies on the ability of the counter party to maximize profits so as to guarantee credit security for the borrowing bank. Therefore, a bank will always extend credit to the company/individual with the lowest risk of default. More so, David and Dionne (2005) defined credit risk as the decline in the credit standard of a counter party. The decline in credit standard of a counter party or individual does not mean that they will default, but the probability of default increases, which sends a signal for the bank to pay more attention to managing their loan portfolio.

Hence, banks are expected to monitor their positions and make sure the amount of loan to any single customer and or customers is limited. Therefore, there is need for diversification of loan portfolios to avoid loan concentration as banks recognize how credit concentrations can adversely impact financial performance. David and Dionne (2005) in their work categories bank loans into different segments of diversification of loan portfolios into; geographical diversification, industry diversification, customer diversification and company size diversification.

The Asset-by-asset Approach involves periodically evaluating the credit quality of loans and other credit exposures, applying a credit risk rating, and aggregating the results of this analysis to identify a portfolio's expected losses. The foundation of the asset-by-asset approach is a sound loan review and internal credit risk rating system. A loan review and credit risk rating system enable management to identify changes in individual credits or portfolio trends in a timely manner. Based on the outcomes and results of this investigation, loan identification, loan review, and credit risk rating system management can make necessary modifications to portfolio strategies or increase the supervision of credits in a timely manner.

2.4.2 Prospect theory

The second theory adopted by this study is the prospect theory developed by Daniel Habneman and Amos Tversky in 1979. It describes how individuals make decisions around risk. The theory predicts increased risk-taking behavior in the presence of below-target outcomes. In particular; prospect theory shows that people are highly risk averse when it comes to potentially increasing their wealth, but risk seeking when dealing with potential economic loss (Kanchu & Manoj, 2013).

Prospect theory stipulates that risk attitude is determined by the outcome's relation to a reference point and not the outcome's level. Therefore, Godlewski (2007) noted that when performance is below a given target level, decision makers should be risk seeking, and when performances is above the target level, they should be risk-averse. Thus, Johnson (1994) pointed out that prospect theory suggests a combination of lower expected return and lower variance may be selected when all outcomes are above the target level, i.e., risk aversion will be exhibited. However, when operating below target, a combination of lower expected return and higher variance may be preferable, i.e.; there may be less risk aversion.

2.4.3 Buffer Theory

Under the Buffer theory of capital adequacy, banks may prefer to hold a buffer of excess capital to reduce the probability of falling under the legal capital requirements, especially if their capital adequacy ratio is very volatile. The buffer theory was opined by Calem and Rob in 1996. It predicts that a bank approaching the regulatory minimum capital ratio may have an incentive to boost capital and reduce risk in order to avoid the regulatory costs triggered by a breach of the capital requirements. However, poorly capitalized banks may also be tempted to take more risk in the hope that higher expected returns will help them to increase their capital. This is one of the ways risks relating to lower capital adequacy affects banking operations. In the event of bankruptcy of a bank, the risks are absorbed by the bank, customers and Nigeria Deposit Insurance Corporation (NDIC).

2.4.4 Deposit Insurance Theory

The deposit insurance theory also provides an insight into the behaviour of commercial banks. In the context of this theory, banks are viewed as portfolio of risky claims. As insured banks increase their risk of failure without limit, there is an expected value transfer of wealth from government deposit Insurance Corporation to bank owners (McCoy, 2006). Regulators are concerned about bank's soundness, particular with respect to solvency or the probability of bank failure. Therefore, regulation of bank risks exposure is necessary to reduce the expected losses incurred by the deposit insurance corporation. As pointed by Diamond and Dybvig (1986), with deposit insurance in place, banks no longer bear the downside risk of their positions since the deposit insurer bears that risk. Consequently, there are natural incentives for banks to take on too much risk, and bank policy should be designed to counteract those incentives. Deposit insurance premiums should be based on the riskiness of the bank's loan portfolio to the extent that the riskiness can be observed. Pointing further, while this policy cannot prevent banks from taking on too much risk, it could reduce the incentive to do so, For example, the deposit insurance premium should be increased for banks with many non- performing loans, banks that have previously underestimated loan losses, and banks paying markedly above-market stated rates to raise money.

2.4.5 Expense Theory

According to the expense theory of Williamson 1963 otherwise called the theory of managerial discretion, managers have the option in pursuing policies, which maximize their own utility rather than profit maximization for shareholders. Such utility include the satisfaction which mangers derive from certain types of expenditure. Manager's prestige, power and status are to some extent reflected in the amount of slack they receive in the form of expense account, luxurious offices and building, company cars and other perquisites of office. Operating efficiency attempts to capture this aspect of bank behaviour.

The underpinning theory

The underpinning theory in this study is the portfolio theory. Therefore, a bank will always extend credit to the company/individual with the lowest risk of default. More so, David and Dionne (2005) defined credit risk as the decline in the credit standard of a counter party. The decline in credit standard of a counter party or individual does not mean that they will default, but the probability of default increases, which sends a signal for the bank to pay more attention to managing their loan portfolio. Banks are expected to monitor their positions and make sure the amount of loan to any single customer and or customers is limited. Therefore, there is need for diversification of loan portfolios to avoid loan concentration as banks recognize how credit concentrations can adversely impact financial performance. The Asset-by-asset Approach involves periodically evaluating the credit quality of loans and other credit exposures, applying a credit risk rating, and aggregating the results of this analysis to identify a portfolio's expected losses. The foundation of the asset-by-asset approach is a sound loan review and internal credit risk rating system. A loan review and credit risk rating system enable management to identify changes in individual credits or portfolio trends in a timely manner. Based on the outcomes and results of this investigation, loan identification, loan review, and credit risk rating system management can make necessary modifications to portfolio strategies or increase the supervision of credits in a timely manner. David and Dionne (2005) in their work categories bank loans into different segments of diversification of loan portfolios into; geographical diversification, industry diversification, customer diversification and company size diversification.

CHAPTER THREE
METHODOLOGY

3.1 Introduction

This chapter focuses on discussion of the methodology for the study. It discusses the research design of the study, the population of the study as well as the sample size and sampling technique adopted. It also gives the variables of the study and their measurement. Sources of data and the techniques for data analysis used are also presented.

3.2 Research Design

This study was conducted based on historical data of the study population. Therefore, the study employed the ex-post factor research design in which the data used were extracted from the annual reports and accounts of the sampled listed deposit money banks for the period of 12 years (2007-2018). The research design is justified base on the type of data that were collected and the analysis performed.

3.3 Population of the Study

The population for this study constitutes the entire listed Deposit Money Banks (DMBs) in the Nigerian Stock Exchange as at 31st July 2018. Under this sector there are a total of fifteen (15) listed deposit money banks on the floor of the Nigerian stock exchange. Therefore, the population of the study is fifteen (15) DMBs.

Table 3.1: Population of the Study

S/N	Banks	Year of listing
1.	Access Bank Plc	1998
2.	Diamond Bank Plc	2005
3.	Ecobank Nig Plc	2006
4.	First Bank of Nig. Plc	1971
5.	First City Monument Bank Plc	2004
6.	Fidelity Bank Plc	2005
7.	Guaranty Trust Bank Plc	1996
8.	Heritage Banking Company Ltd.	2013
9.	Keystones Bank	211
10.	Stanbic IBTC Bank Plc	2005
11.	Skye bank plc	2005
12.	Sterling Bank Plc	1993
13.	Union Bank Plc	1970
14.	United Bank for Africa Plc	1971
15.	Unity Bank Plc	2005
16.	Wema Bank Plc	1991
17.	Zenith Bank Plc	2004

Source: Generated from Nigeria Stock Exchange, 2018

3.4 Sampling Technique and Sample Size

The sampling technique employed in this study is the non-probability sampling technique referred to as judgmental sampling which is based on the following;

i. For a bank to be selected for the study, it should be quoted on or before 2007. This enable the bank to have a complete set of annual reports and account over the study period.

ii. The bank must not have been taken over, acquired and/or merged up to 31st July, 2018. This enable the bank to maintain its identity in its own name. In addition, the annual

reports of the banks should be available to the researcher within the period of the study. Based on the filters mentioned above, the sample of the study is depicted in Table 3.2.

Table 3.2: Sample of the study

S/N	Banks	Year Listed
1	Access Bank Plc	1998
2	First Bank of Nig. Plc	1971
3	Guaranty Trust Bank Plc	1996
4	Sterling Bank Plc	1993
5	Union Bank Plc	1970
6	United Bank for Africa PLc	1971
7	Stanbic IBTC Bank Plc	2005
8	Zenith Bank Plc	2004

Source: Curved from table 3.1

3.5 Sources and Method of Data Collection

This study employed the secondary method of data collection in which the data was extracted from the annual report and accounts of the sampled banks for the period of the study (2007-2018).

3.6 Variables of the study and their Measurement

For the purpose of this study, the dependent variables that were adopted are return on asset (ROA) and return on equity (ROE) as used by Tamimi and Obeidat (2013) and Frederick (2014). The choice of these variables was influenced by the empirical studies reviewed. The independent variables used in this study are; default rate and capital adequacy ratio (Boahene, Dasah & Agyei, 2012 and Kurawa & Garba, 2014) and loan loss provisioning (as used by Danulrtiu, 2012) while the control variable bank size (Syafri, 2012 and Roman & Daluletiu, 2013), and bank age and natural logarithm of total loan. Table 3.3 presents the summary of variables and their measurement.

Table 3.3: Variable of the Study and Measurement

Dependent Variable	Measurement
Return on assets (ROA)	Net income/total assets
Return on Equity (ROE)	Net income/shareholder equity
Independent Variable	
Default Rate (DR)	Non-performing loans/total loan
Loan Loss Provisioning (LLP)	Loan loss provision/total loan
Capital Adequacy Ratio (CAR)	Capital fund/risk-weighted assets
Control Variable	
Bank Size (BS)	Natural logarithm of total asset
Bank Age (BA)	Number of years listed on the stock exchange

Source: Author's Compilation (2018)

3.7 Technique for Data Analysis and Model Specification

Given the objective of the study and following the works of Olalekan and Adeyinka (2013), Syafri (2012), Azeem and Amara (2014), the panel data methodology was employed. It helps to study the behaviour of each bank over time and across space (Baltagi, 2005; Gurajati, 2003). A multiple linear regression model was used to determine the relative effect or importance (sensitivity) of each explanatory variable in affecting the financial performance of the sampled banks. Therefore, Pooled Ordinary Least Square (OLS), was employed for estimating the regression equation using STATA version 12 statistical packages. Descriptive and Pearson correlation was also employed to complement the analysis.

The Ordinary Least Square (OLS) is anchored on the assumption that there is no group or individual effects among the banks, the Fixed Effect Model (FEM) takes into consideration the individuality of each firm or cross-sectional unit included in the sample by allowing the intercept to vary for each firm while assuming that the slope coefficients are constant across firms and the Random Effect Model (REM) assume that the individual or group effects are uncorrelated with other explanatory variables.

To ensure that the linear regression assumption is not violated, multicollinearity and heteroscedasticity were carried out. To check for multicollinearity, the most widely-used diagnostic for variance inflation factor (VIF) was used. The VIF estimates how much the variance of a coefficient is inflated because of linear dependence with other predictors. Therefore, the VIF, was calculated for each predictor by doing a linear regression of that predictor on all the other predictors. A maximum VIF value in excess of 10 is often taken as an indication that multi-collinearity. However, to test for panel- data model heterogeneity, testing both fixed and random effect. F-test is used as support for choice between OLS models and fixed-effects models, while Hausman test decides between fixed and random effects models and Breusch and Pagan Lagrangian multiplier test (LM) decides between random effects model and pooled OLS. Lastly, normality test was conducted using the histogram and normal probability plot.

Therefore, the general model for this research work is as follows:

$Y_{it} = c + \beta_j X_n + e_{it}$

Where:

Y = Dependent variables (ROA and ROE) for i-th bank and time t

X = Independent variables for i-th bank and time t

β = Coefficients of independent variables from i = 2…..5

Therefore, from the general models, the following two empirical models were used to answer the research questions (Baltagi, 2005 and Gurajati, 2003). Thus;

$ROA_{it} = \alpha + \beta_i DR_{it} + \beta_i LLP_{it} + \beta_i CAR_{it} + \beta_i BS_{it} - \beta_i BA_{it} + \beta_i LNLoan_{it} + e_{it}$

$ROE_{it} = \alpha + \beta_i DR_{it} + \beta_i LLP_{it} + \beta_i CAR_{it} + \beta_i BS_{it} + \beta_i BA_{it} + \beta_i LNLoan_{it} + e_{it}$

Where

DR=Default Rate (DR)

LLP=Loan Loss Provisioning (LLP)

CAR=Capital Adequacy Ratio (CAR)

BS=Bank Size (BS)

BA=Bank Age (BA)

CHAPTER FOUR
RESULTS AND DISCUSSION

4.1 Introduction

This chapter presents the analyses and interpretation of the data generated for the study. The data of each hypothesis is presented and analyzed base on the dependent and independent variables of the study. The analysis begins with the presentation of the robustness test followed by descriptive statistics and correlation analysis. Finally, the chapter concludes with the presentation and discussions of the regression results of the pooled OLS, Fixed effect and the Random effect models.

4.2 Robustness Test

The robustness tests carried out by this study are: heteroskedasticity test, Multicollinearity test, hausman specification, Breush-Pagan Lagrangian multiplier test for random effect and F-test. These tests were carried out in order for the study to reach a valid statistical inference.

i. Heteroskedasticity test was conducted to ensure that the regression model fits all the values of the independent variables and this is possible only if the residuals do not vary with independent variable and therefore are random in nature. A p-value of less than 5% indicate the presence of heteroskedasticity, while a p-value of greater than 5% indicate the absence of homoskedasticity. The test showed that there is the presence of heteroskedasticity in the first model from the test p-value of 0.0359. Therefore, this was corrected through the OLS robust test. However, the second model showed the absence of heteroskedasticity because the p-value is greater than 5% (0.1115).

ii. Multicollinearity test is carried out to check whether there is a correlation between the independent variables which will mislead the outcome of the study. Multicollinearity affects the predictive power of the individual predictors in a model. Therefore, as stated earlier, this test was carried out using the Variance Inflation Factor (VIF) and Tolerance value which are expected to be less than 10 and 1 respectively. The result from the two regression models showed that the variance inflation factor (VIF) and Tolerance value of all the models is less than 10 and 1 respectively, which indicate absence of harmful multicollinearity.

iii. The hausman test was carried to decide between the fixed effect and the Random effect. This was conducted to choose between the Fixed effect and the random effect to represent

the data in order for the study to arrive at a valid inference, Fixed Effect Model (FEM) takes into consideration the individuality of each firm or cross- sectional unit included in the sample by allowing the intercept to vary for each firm while assuming that the slope coefficients are constant across firms and the Random Effect Model (REM) assume that the individual or group effects are uncorrelated with other explanatory variables. Therefore, a p-value of less than 5% indicate that fixed effect is appropriate while a p-value of greater than *5%* indicate that random effect is appropriate.

iv. Breusch-Pagan Lagrangian multiplier test for random effect was carried out to choose between random panel effect and pooled OLS. This test was conducted in order for the study to identify whether there is a panel effect in the data collected for the study or not. Sometimes a panel effect will not be present in a data and the application and decision taken in favour of random effect on such a data will be misleading. Therefore, if p-value from the Breusch-Pagan LM test is less than 5%, random effect is the most appropriate to represent the data for the study (there is panel effect) and if the p-value is greater than 5%, pooled OLS is the most appropriate to represent the data for the study (no panel effect). Therefore, the second model that support the random effect fails to confirm the result but rather showed that pooled OLS method is more appropriate to represent the data for analysis. This is shown by the p-value of 0.6723.

4.3 Analysis of Data

This section presents the analysis of data from the descriptive statistics, correlation and the panel data methodology of pooled OLS, fixed effect and random effect models.

4.3.1 Descriptive statistics

Table 4.2 shows the summary of the statistics for the dependent, independent and the control variables of the study. The summary statistics in showed the mean, standard deviation, minimum and the maximum values of the variables of the study. Similarly, Table 4.2 shows basic insight into the nature of data that upon which analysis was conducted.

Table 4.1: Summary of Statistics

Variable	Obs	Mean	Std. Dev.	Min	Max
ROA	84	-1.67	0.41	-2.82	0.35
ROE	84	-0.78	0.44	-2.73	0.28
DR	84	0.16	0.17	0.01	0.88
LLP	84	0.95	0.44	0.02	3.21
CAR	84	16.65	29.85	-0.32	187.36
BS	84	19.65	1.34	16.24	21.62
BA	84	24.21	12.53	5	44
LnLoan	84	18.63	1.43	15.27	21.18

Source: STATA OUTPUT.

From Table 4.1, the mean of ROA is -1.67 while the standard deviation is 0.41. This depict that on the average in the industry, the total assets employed by the banks contributed -167% to their total profits. This has showed that the industry is not performing well, conforming to the financial crisis that bedevil the banking industry in Nigeria. The standard deviation shows 41% variation in profit that is attributed to ROA. The minimum value of ROA as is seen from the Table 4.2 is — 2.82 (-282%) while the maximum value is 0.35 (35%). This shows that some of the banks performed very poor indicating the level of financial difficulties and the fictitious profit declared by some banks before the financial crisis. Similarly to ROA is ROE which indicates how well banks use the resources of owners to generate profits. From the table, the mean value of ROE is -78% which reveals the average contribution of ROE to the total profit of the industry. The standard deviation is 44% as revealed which shows variability of profit contributed by ROE to the total profit of banks in the industry. The minimum value of ROE is -2.73 (273%) and the maximum value is 0.28 (28%).The result of ROE is not significantly different from that revealed by ROA. Therefore, going by prospect theory, banks in the industry should be seeking to take advantage of higher returns from successful performing loans.

The default rate (DR) from the table shows that the mean value is 0.16 while the standard deviation is 0.17. Default rate indicates the rate at which loan repayment is non- performing. From the mean value the average rate of default is 16% in the industry. Comparing this to the

tolerable limit of default allowed set by CBN at 10%, the industry is not performing on loan recovery and considered as being not encouraging. The standard deviation stood at 17%, indicating the variability in loan attributed to non- performing loan in the industry. This confirms the assertion of high rate of non- performing loan that characterized the banking industry especially before the banking consolidation in 2005. The minimum value of default rate stands at 0.01 (1%) and a maximum value of 0.88 (88%). This shows that compared to the industry average, some banks perform very well as their default rate is as low as 1% which is below the tolerable limit allowed by CBN while some banks perform very poor by having their default rate as high as 88%, therefore, indicating very poor credit risk management policies that need management and regulatory attention. Therefore, according to portfolio theory, banks •with higher default rate should try and diversify their loan portfolio so as to reduce the adverse effect of loan losses.

The loan loss provisions ratio LLP shows the provisions made as regard to nonperforming loan indicate the mean value of 95%. This showed that in the industry, banks provide as high as 95% as provisions of their non-performing loan. The standard deviation of 44% indicates considerable dispersion of LLP attributed to the level of non-performing loan in the industry. This confirms the assertion that some management uses the loan loss provisions to smooth their income. The minimum value of LLP from the table is 0.02 (2%) and the maximum 3.21 (32%). This indicates that some banks are performing very well because of the less provisions they made while some banks perform very poor because the provisions they made is as high as 32%. I.e. some banks exhibit very poor credit risk management policies. This has been shown by the extend default rate in which some of the banks exhibit.

The capital adequacy ratio (CAR) gives the amount of capital held by a bank as a buffer against loss and or liquidation. From the table, the mean value of CAR is 16%. This shows that on the average, the banks maintain an adequate capital as against the minimum required capital to be held by each bank as contained in the CBN prudential guideline. The standard deviation depicted is 29% which indicate variability in the amount of capital held by the banks in the industry. Therefore, banks hold enough capital commensurate to the risk they take. This is attributed to the recapitalization policy adopted by the CBN and the policy that every bank should maintain

capital commensurate to the risk it takes The minimum value and maximum value of CAR from the table is -0.62% and 187.36% respectively. This indicates that some banks are far below the minimum capital stipulated by CBN to be held, which called for an action plan in these banks by both the managers and regulatory authorities. Therefore, these banks should be encouraged to hold an excess buffer to reduce the probability of falling below the legal capital requirement of 15%. Some banks have exhibit a good credit risk management techniques and policies because of the high level of capital the hold compared to the amount of risk the take at 187.36%.

The control variables used in the study showed the mean of Bank size is 19.65 and a standard deviation of 1 34 indicate a considerable level of dispersion in size in the industry during study period. The minimum value indicated as 16.24 and the maximum value of 21.34 indicates that the banks do not differ significantly in size. The age of bank measured as age of listing has a mean value of 24.21 and a standard deviation of 12.53. The minimum value and maximum value of bank age before 2002 are 5 and 44. This means that some banks have been listed on the floor of Nigerian stock exchange as far back as the last 44 years.

4.3.2 Correlation result

Correlation shows the relationship between one variable and the other. And the sign of the correlation indicates the direction of the relationship while the coefficient of the correlation gives the magnitude of the relationship. Table 4.2 shows the summary of correlation between ROA and other explanatory variables and the correlation between the explanatory variables.

Table 4.2 Correlation between ROA and Explanatory Variables

Variable	ROA	DR	LLP	CAR	BS	BA	LnLoan
ROA	1.0000						
DR	0.3189	1.0000					
LLP	0.0183	-0.2690	1.0000				
CAR	0.0183	0.2571	0.0625	1.0000			
BS	-0.2583	-0.3100	0.2933	0.2912	1.0000		
BA	-0.1425	-0.0109	-0.1952	-0.1057	0.5660	1.0000	.
LnLoan	-0.1667	-0.3578	0.2903	0.2903	0.8893	0.5116	1.0000

Source: STATA OUTPUT

Table 4.2 shows the correlation between the dependent variable ROA and the independent variables (default rate, loan loss provisioning ratio, capital adequacy ratio, bank size, bank age and natural logarithm of total loan). The correlation coefficients on the main diagonal are 1 .0000, indicating each variable has a perfect positive linear relationship with itself. From the table, ROA is positively correlated with default rate (DR) with correlation coefficient of -0.3387 which shows weak correlation. Thus, it signifies that as the default rate reduces, ROA is going to decrease and as default rate increases, ROA is going to increase. This result did not depict the true economic situation to be exhibited by banks. Similarly, the relationship between ROA and loan loss provision is positive with a weak correlation coefficient of 0.1692. This result implies that as the loan loss provision increases, ROA is going to increase and as loan loss provisioning decreases, ROA reduces.

More so, the correlation between capital adequacy (CAR) and ROA shows a positive very weak correlation. It therefore means that as the amount of capital held by a bank to guard against losses increases, ROA of the banks increases. This result supports the impression that highly capitalized banks are more profitable than those that are poorly capitalized. However, the correlation between ROA and the all the control variables showed a negative and weak relationship with bank size (BS), bank age (BA) and natural logarithm of total loan (LnLoan) at correlation coefficients of -0.2583, -0.1425 and -0.1667 respectively.

The result shows an indirect relationship which indicates that as BS increases ROA is going to decrease which signifies that as the banks are not properly using the assets at their disposal to generate profit. This has been supported by the average value of ROA from the descriptive statistics. The indirect relationship between BA and ROA signifies that being listed for a long period of time does not guarantee good performance. This has been the case of the new generation banks that scale through the recapitalization policy in which most of them perform better than the old generation banks. Lastly, the relationship between LnLoan and ROA as quantum of loan given out increases, the interest accruing on the loan will be high and thereby increasing the profits of the banks.

Table 4.3 shows the relationship between return on assets (ROA) and the explanatory variables, default rate (DR), loan loss provision (LLP) capital adequacy ratio (CAR), bank size (BS), bank age (BA) and natural logarithm of total loan (LnLoan) as extracted from the analysis result.

Table 4.3: Correlation between ROE and Explanatory Variables

Variable	ROE	DR	LLP	CAR	‘BS	BA	LnLoan
ROE	1.0000						
DR	0.3189	1.0000					
LLP	0.0183	-0.2690	1.0000				
CAR	0.0183	0,2571	0.0625	1.0000			
BS	-0.2583	-0.3100	0.2933	0.2912	1.0000		
BA	-0.1425	-0.0109	-0.1952	-0.1057	0.5660	1.0000	
LnLoan	-0.1667	-0.3578	0.2903	0.2903	0.8893	0.5116	1.0000

Source: STATA OUTPUT

Table 4.3 shows the correlation coefficients on the main diagonal as 1.0000, indicating each variable has a perfect positive linear relationship with itself. However, from the table, it is observed that the relationship between ROE and the independent variables is the same with that of the relationship between ROE and the independent variables except that of the relationship between CAR and ROE.

The correlation between ROE and default rate is positive and weak (0.2961). This indicates that as the default rate increases, ROE increases and as default rate reduces, ROE also reduces. The relationship means the more loan repayment is defaulted and high non-performing loan, the more the profits of the banks. This is not economically good due to the fact that the main source of banks income is the interest accruing on the loan given out. Consequently, if the default rate is high, the repayment of both the principal amount and the interest is not performing and therefore there will be low income for the banks. It is expected as the default rate reduces, profitability increases.

The correlation between ROE and loan loss provisions (LLP) is direct relationship as depicted in Table 4.3 and weak (0.183). This relationship means that as LLP increases, ROE increases and as LLP reduces, ROE reduces. However, the correlation between ROE and capital adequacy ratio (CAR) indicates a negative and very weak relationship (- 0.0904). This shows that as the amount of capital set aside as a buffer against loss increases, ROE reduces and as the capital ratio reduces, ROE increases. The result upheld the notion that the capital regulation on banks has hindered the banks from engaging in profitable ventures. It is argued that the capital regulation has tied up capital which should have been used in different investment activities to generate more profits for the banks. The relationship between all the control variables bank size (BA) bank age (BA) and natural logarithm of loan (LnLoan) is the same with the of the relationship between the control variables and ROE however at -0.1969, -0.1099 and -0.3264 respectively.

4.3.3 Regression result (model one)

The regression result of the Ordinary Least Square (OLS), Fixed Effect (FE) and Random Effect (RE) estimation techniques are presented in Table 4.5. The table contains the summary result of ROA as the dependent variable and default rate (DR), loan loss provisioning (LLP), capital adequacy ratio (CAR), bank size (BA), bank age (BA) and natural logarithm of total loan (LnLoan) as the independent variables. The estimation is done for the first model as given in the methodology section.

Table 4.4: Summary Regression Result

	Model 1		
Variable	OLS robust	Random effect	Fixed effect
DR	1.001839	1.001839	1.237381
	(0.005)	(0.000)	(0.000)
LLP	0.338629	0.338629	0.3226326
	(0.000)	(0.000)	(0.002)
CAR	0.0021297	0.0021297	0.0013418
	(0.015)	(0.149)	(0.370)
BS	-0.203511	-0.203511	-0.250619
	(0.128)	(0.003)	(0.001)
BA	-0.001802	-0.001802	0.000959
	(0.708)	(0.661)	(0.968)
LnLoan	0.1337532	0.1337532	0.1547075
	(0.255)	(0.030)	(0.051)
R Squared	0.2982		
F-Value	4.87		
Prob. F	0.003	0.3044	
R Squared:		0.3670	0.3206
Within		0.2982	0.2152
Between		0	0.2152
Overall			0.2790
Rho			0.15944544
F-value			1.61
P-value			0.0000

Source: Stata Output

Table 4.4 gives the summary regression result from the OLS robust, fixed effect and the random effect models. The OLS robust was conducted in order to correct for the presence of heteroskedasticity as indicated in the test. In order to take cognizance of endogeneity of the pooled OLS, the Hausman test was conducted for the model supports the use of Fixed Effect

method. However, the F-test fails to support the use of Fixed Effect. Therefore, the test supports the use of pooled OLS due to lack of presence of cross sectional differences in the data of the study. Consequently, analysis will be conducted using the robust pooled OLS result from Table 4.4.

The OLS result in the table reveals that the R2 is 0.2982 which is the coefficient of determination that gives the proportion or percentage of the total variation in the dependent variable explained by the explanatory variables jointly. It shows that 29% of total variation in return on asset (ROA) in the Nigerian banking industry is caused by combine effect of default rate (DR), loan loss provision ratio (LLP), capital adequacy ratio (CAR), bank size (BA), bank age (BA) and natural logarithm of total loan (LnLoan). This was supported by the F-value of 4.87 that is significant at 5% (0.003).

The result showed that default rate (DR) has a statistical positive and significant effect on financial performance measured using return on asset (ROA) at 5% significant level. This implies a 1% increase in default rate, is going to increase financial return on asset by 10%. Therefore, Nigerian banks should pay more attention to managing their loan portfolios by diversification of the loans to avoid over concentration of loans to specific individuals or specific sectors of the economy. This findings in consistence to the findings of Boahene, Dasah & Agyei (2012), Kurawa & Garba (2014), Abiola & Olausi (2014) and Narula & Singla (2014). The result is quite surprising because normally one would expect that as more customers fail to pay for facilities granted, the financial performance of the bank will be reduced. Moreover, a positive relationship can be established base on the argument that not notwithstanding, even though there is high loan default, default rate is increasing proportionately to financial performance. This implies that, Nigerian banks do not have effective institutional measures to deal with credit risk management. The banks shift the cost on loan default in form of higher interest rate on loans to other customers. Eventually, banks that exhibit this behaviour are more likely to increase their financial performance, even though credit risk may be high.

However, the findings of the study contradict the findings of Hosna, Manzuri & JuanJuan (2009), Paudel (2012), Yuanjuan and Shishun (2012), Kolapo, Ayeni and 01cc (2012). Mwangi

(2012), Musyoki and Kadubo (2012), Rufai (2013), Madishetti and Rwechungura (2013), Kaaya & Pastory (2013), Erina & Lace (2013) and Azem & Amara (2014) who found a significant negative effect of default rate on financial performance of banks. This findings is consistence with the true economic situation due to the fact that as the default rate increases, it means loan given out are not performing and thus the interest on the loan have not been promptly paid, therefore, the lower the profit. Charles & Kenneth (2013) noted that most loans and advances were concentrated. in the Nigerian stock market to create what is known as margin loans (the art of granting loans to stock brokers to purchase share using the share as security for the loan), unfortunately, most of these loans were lost as a result of the global financial crisis when foreign portfolio investors had to divest their funds and as a result prof is of the banks declined.

The findings also contradict the findings of Kithinji (2010), Nawaz and Munir (2012), Muritala and Taiwo (2013) and Charles and Kenneth (2013), who recorded a negative but not significant effect of profitability on default rate. The inverse relationship is true in the Nigerian banking system especially during the period under study.

The impact of LLP on financial performance measured using ROA from the robust OLS regression showed that there exists significant positive impact of LLP on ROA at 5%level of significance. This implies that as provisions increases, ROA also increased by 33%. However, an inverse relationship is expected, since a higher ratio of LLP could indicate a poor quality of loans or poor loan portfolio management and thus, a higher risk of a bank's loan portfolio and since bad loans are expected to curtail the financial performance of a bank, LLP is expected to negatively affect bank financial performance. This finding is inconsistence with the findings of Rao and Lakew (2012) and Charles and Kenneth (2013) who documented a significant negative effect. Moreover, the positive relationship can signifies the importance of rising provision by bank. This is due to the fact that in the event of loss, the provision can be used to reduce the extent of the effect of the losses on financial performance. However, care must be taken to avoid problems associated with loan defaults so as to discourage over provisioning. More so, severe banking problems basically emanates from the failure of financial institutions to recognize impaired assets and create reserves for writing off these assets.

From the OLS regression result, capital adequacy ratio (CAR) shows an insignificant effect. However, when the robust OLS was regressed, the effect of CAR on ROA became significant at 5% level of significance. That is an increase in CAR will bring about very little increase in ROA at 2%. The positive and significant effect between CAR and ROA in the Nigerian banking industry is as expected, this is inherent in the enhancement of capital base of Nigerian banks to 25 billion naira that significantly improved the bank financial performance. This protected Nigerian banks against financial losses from default loans, and also gives Nigerian banks the right opportunity to compete internationally especially with other banks. The result is consistent with the findings of Syafri (2012), Rao and Lakew (2012) and Charles and Kemieth (2013) but contradict the findings of Paudel (2012), Mwangi (2012), Soyemi, Akinpelu & Ogunleye (2013) and Frederick (2014) who reported a negative and significant effect of capital adequacy on performance. The result is also inconsistent with the findings Hosna, Manzuri & JuanJuan (2009), Roman &Danuletiu (2013), Oluwafemi, Adebisi, Simeon and Olawale (2013), Olalekan & Adeyinlca (2013), Kurawa & Garba (2014) and Abiola and Olausi (2014) who recorded insignificance effect of capital adequacy on the financial performance of banks.

All the control variables used in the first model recorded a negative and insignificant effect on ROA. Bank size (BS), bank age (BA) and natural logarithm of total loan (LnLoan) are insignificant at 5% level of significance with coefficient of -0.2035 11, - 0.001802 and 0.1337532 respectively. The negative relationship between BS and ROA implies that Nigerian banks should avoid holding too much and unnecessary assets as this will affect their financial performance by increasing their operating cost. The negative relationship between BA and ROA indicate that the bank listed for a long period of time does not guarantee good financial performance.

Therefore, older banks should not assume that they have in place efficient credit risk management policies. But rather, they should make sure that the implement new credit risk management policies and techniques and adhere strictly to the provision of the Basel capital accord and CBN prudential guidelines.

4.3.5 Regression result (model two)

The regression result of the Ordinary Least Square (OLS). Fixed Effect (FE) and Random Effect (RE) estimation techniques are presented in Table 4.6. The table contains the summary result of ROE as the dependent variable and default rate (DR), loan loss provisioning (LLP), capital adequacy ratio (CAR), bank size (BS), bank age (BA) and natural logarithm of total loan (LnLoan) as the explanatory variables. The estimation is done for the second model as given in the methodology section.

Table 4.6 gives the summary regression result from the OLS regression, fixed effect and the random effect models as extracted from the estimation in appendix B. The model passed the heteroslcedasticity test which signifies that the regression model fits all the values of the independent variables and therefore, homoskedastic as shown in the appendix B. Meanwhile, in order to take cognizance of endogeneity of the pooled OLS, the hausman test was conducted. The result from the test revealed that the random effect model is more robust. However, from the test of Bruesch-Pagan LM test, it shows that pooled OLS regression is more appropriate to represent the data for analysis. The test shows that there is the absence of cross sectional differences across the banks included in the study sample. Consequently, analysis will be conducted using the result of the pooled OLS.

Table 4.5 Regression Result on ROE and the Independent Variable

	Model 2		
Variable	OLS robust	Random effect	Fixed effect
DR	0.6957456	0.6957456	0.8244308
	(0.019)	(0.017)	(0.19)
LLP	0.2516705	0.2516705	0.2614133
	(0.022)	(0.019)	(0.029)
CAR	0.0003412	0.0003412	0.000110
	(0.021)	(0.837)	(0.948)
BS	-0.1238974	0.1238974	0.094861
	(0.111)	(0.107)	(0.260)
BA	-0.0020101	-0.0020101	-0.200032
	(0.633)	(0.662)	(0.460)
LnLoan	0.1863702	0.1863702	-0.1286135
	(0.008)	(0.007)	(0.153)
R Squared	0.2390		
F-Value	4.03	0.2308	
Prob. F	0.0015	0.3440	
R Squared;		0.2390	
Within		0	02419
Between			0.0904
Overall			0.1384
Rho			0.28615255
F-value			3.78
P-value	.		0.0025
			0.0000

Source: STATA OUTPUT

Table 4.5 present the regression result of the second model. The positive and significant effect of default rate (DR) and loan loss provision QLP) on financial performance measured using return

on equity (ROE) shows the same result with that found on the effect of the variables with ROA. However, the result shows that a 1% increase in DR will increase ROE by 69% there by exposing Nigerian banks to a high level of risk. So also, a 1% increase in LLP will increase ROE by 25% which implies that adequate provision made in proportion of non-performing will increase bank financial performance. Meanwhile, the effect of CAR on ROE revealed an insignificant positive effect.

The control variable BS recorded a positive effect with ROE while a negative effect was recorded between BA and ROE, both control variables being statistically insignificant at 5% level of significance. However, a statistically significant negative effect was found between LnLoan and ROE at 5% level of significance. The result signifies that a 1% increase in LnLoan will reduce financial performance by 17%. In an effort maintain a desirable profit level and keep up with competition, banks might indiscriminately increase their loan size and if the loans are not properly recorded, will reduce financial performance. Therefore, Nigerian banks should put in place efficient and effective loan recovery system and the banks should try and divest their loan portfolios and to discourage margin loans.

Conclusively, the findings of the study from the regression result of both measures of financial performance, it is revealed that ROE has a statistically significant positive effect on DR and LLP. Therefore, the study will reject the first and second hypothesis which stated that there is no significant effect of default rate on financial performance of banks in Nigeria and also there is no significant impact of loan loss provision on financial performance of banks in Nigeria. Hence, the alternate hypothesis should be accepted. While the effect of CAR on ROE shows a statistically significant positive effect. Therefore the third hypothesis will also be rejected.

4.4 Summary of Major Findings

Based on the above analysis, the following findings were made;

1. The result showed that default rate (DR) has a statistical positive and significant effect on financial performance at 5% significant level. This implies a 1% increase in default rate, is going to increase financial return on asset by 10% and on ROE BY 69%.

2. There exists significant positive impact of LLP on ROA at 5% level of significance. This implies that as provisions increases, ROA and ROE also increased by 33% and 25% respectively.
3. The effect of capital adequacy ratio (CAR) on ROA and ROE is significant at 5% level of significance. That is an increase in CAR will bring about very little increase in ROA and ROE.

CHAPTER FIVE

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

5.1 Introduction

This chapter provides the summary of the entire study from which conclusions were made and recommendation reached base on the findings in the previous chapter. Therefore, the chapter is divided into three sections; section one gives the summary, section two gives the conclusion while section three gives the recommendation.

5.2 Summary

The study comprises of five chapters. Chapter one begins with the background to the study in which the general overview of credit risk management in the banking industry was given, followed by the state of credit risk management in the Nigerian banking industry. The banking industry has been seen as a catalyzed for economic growth and development, by transferring funds from the surplus unit to the deficit unit of the economy to stimulate economic growth, Therefore, credit creation is the main income generating activity of the banking industry and interest from such credit serve as the main income generating activity of banks. However, in trying to achieve this, banks are exposed to credit risk of default or delinquency of part or the whole credit and the interest under the specified period. Consequently, there has to be a system of identifying, evaluating and management of this credit risk that follow a standard risk management framework,

The Nigerian banking industry witnessed dramatic growth post consolidation of 2005 and the developments posed a lot of challenges for the industry and regulation. The industry was bedevil with high non-performing loans as a result of weak credit standards, poor portfolio risk management, gaps in prudential guidelines, uneven supervision and lack of adequate disclosure about the financial position of Nigeria banks. This resulted to the failure of many banks in the country. Therefore, lots of concerns were raised by regulators, supervisors, professionals and academicians on the issue and extend of the effect of credit risk management on financial performance of banks in Nigeria that boils down to empirical question.

There has been an increase in the number of studies conducted on credit risk management and financial performance of banks in Nigeria recently. However, most of the studies were conducted for a period of not more than five years which did not capture the recent years which sees the banking industry around the globe into financial crisis in 2008. More so, Nigerian studies did not include loan loss provision among their study variables given its importance in the prudential guideline. Lastly, the use of Breusch-Pagan LM test and F-test to improve the quality of the inferences drawn from this study will reveal the right method of analysis to be employed rather than just to assume the presence of cross sectional dependence. Therefore, these factors motivated for this study which is aim at examining the effect of credit risk management on the financial performance of banks in Nigeria.

In line with the above, the study formulated three research hypotheses in null form in order to be tested at the end of the study. Finally, this study has its scope to include to all deposit money banks that are listed on the floor of the Nigerian stock exchange on or before the period 2007 and the bank most not have been taken over, acquired and or merged with other bank in other to maintain its identity in own name.

Chapter two reviews the concepts of risk, credit and credit risk, performing and non- performing loan, risk weighted asset, concept of credit risk management, concept of financial performance and theories and strategies of credit risk management. From the review, it was found that credit risk management involves putting in place a well-articulated framework that can minimize or eliminate credit risk exposures faced by banks from the loans given out and if the exposure is unavoided, the framework should be able to point directly to the potential consequences of such exposures. Thus, credit risk management process should involve establishment of a clear structure and framework of identification, evaluation and managing credit risk. Finally, the chapter concludes with the review of related empirical studies on credit risk management.

The review of the empirical studies on credit risk management shows that there is a wide gap between studies conducted in Nigeria and other countries of the world. This revealed to the need for studies to be conducted on the effect of credit risk management and financial performance of banks in Nigeria. Mixed results were recorded on the effect of default rate, loan loss provision

and capital adequacy on the financial performance of banks which generated a series of debate on the extent of the effect. The effect of capital adequacy on financial performance in Nigerian

Effect of Risk Management on Financial Performance is the means in which an organization influences the organization profitability, through enhanced risk management practices. Risk analysis of financial statement was allegedly the largest contributor towards risk management while budgeting and strategic planning are indispensable players in managing risk which affect the bank's profitability. A year -to-year cost income ratio, equity to total assets ratio, total asset growth ratio and ratio of loan loss reserve to gross loans positively influences the likelihood of financial distress in the coming year however; macroeconomic information shows little impact on the possibility of financial distress on financial institution. This means that although there are other determinants of performance not included in the study, the banks can improve their performance by focusing on developing strong risk management policies and integrating risk management in the process of setting achievable organizational objectives. Risk is inconsistency of returns associated with a particular asset. Risk Management is the process of identification, measuring, controlling and monitoring of potential risks that may negatively affect the returns of an organization. Effective risk management is accepted as a major cornerstone of bank management by academics, practitioners and regulators. The financial performance assessment is devoid of such a multitude of options and methodologies despite critical importance of financial sustainability.

Impact of Loan loss Provision on Financial Performance: Lending has become a vital function of the commercial banks because of its direct effect and impact on economic growth, business development and financial performance of commercial banks. Bank lending is guided by loan lending policies which are guidelines and procedures put in place to ensure smooth lending operations. Bank lending if not properly assessed, involves the risks that the bank shareholders will not realize any income benefits such as return on assets, return on equity, net interest margin and dividend payout ratio due to laxity for proper execution by the management and the staff concerned Central Bank of Kenya Report (2013). Banks are germane to economic development through the financial services they provide. The intermediation role can be said to be a catalyst for economic growth. The efficient and effective performance of the banking industry overtime

is an index of financial stability in any nation. The extent to which a bank extends credit to the public for productive activities accelerates the pace of a nation's economic growth and its long term sustainability.

Capital Adequacy and Financial Performance of Banks in Nigeria: Banks are financial institutions for mobilizing financial resources through their intermediation role for productive investment. Nonetheless, the financial deed of most of the banks in Nigeria over the some years has been unimpressive. The decline in profits could be attributed to the worldwide economic crises although the in 2005, the Central Bank of Nigeria (CBN) increased the lowest amount of capital that is required by banks to stay in business to N25 billion. Taking the footsteps of Tomola (2013) that Nigerian banks are yet to in terms of realizing optimal capital structure, the intent of this research is to analyze empirically how significant is adequacy of capital ratio in influencing the deeds of Nigerian banks.

There is a considerable positive link between bank profitability and capital adequacy. Monetary channel of influence is watered down if banks are poorly capitalized, Similarly, the significance of capital adequacy of state commercial banks in Bangladesh, found that capital adequacy decreases with bank size and profit is unswervingly linked with capital adequacy, bank profitability is positively linked to the core capital ratio and tier one risk based capital ratio.

5.3 Conclusions

This study investigates the effect of credit risk management on financial performance of deposit money banks in Nigeria. Therefore, from the findings of the study, the following conclusions where made;

i. The positive effect default rate implies that Nigerian banks have poor credit risk management practices and having high default rate in their loans portfolios. Despite the high levels of the default rate, their financial performance keeps growing which is an indication of transfer of loan losses to other customers in the form of high interest rates. Consequently, this will likely slow economic growth by discouraging customers from accessing loans from banks. Those who are able to take up such loans may also find it very difficult to repay because of the exorbitant interest rates. This situation has the tendency of creating loan losses.

ii. It is essential to state that the strategy of making provisions for loan loss and or reducing non-performing loans has never been misleading. However, it is concluded that there is a poor loan quality, poor loan portfolio management and the presence of a high risk of a bank's loan portfolio among Nigerian banks. Thus, loan loss provision is being used to manage earnings by Nigerian banks.

iii. The positive result confirms the enhancement of capital base of Nigerian banks to 25 billion naira in other to significantly improve the Nigerian bank financial performance. This protecting' was made against financial losses arising from default loans, and also gives Nigerian banks the right opportunity to compete internationally especially with other banks.

5.4 Recommendations

The following recommendations were made base on the conclusions of the study;

i. In order to reduce default rate on loans and achieve maximum financial performance, Nigerian banks, need to strengthen the default rate management system. Banks should diversify their loan portfolios into different segments such as geographical, industry, customer and company size diversification to avoid over concentration to a specific segment.

ii. Nigerian listed Banks need to adequately and accurately obtain information from both internal and external sources on credit standard of loan seekers in order to access the multiplicity of credit risk they can face when presented with a loan proposal. The use of credit risk models in determining loan quality can be used and Credit bureaus can also be reached when 'tracking the financial behavior of a credit customer.

iii. Deposit money banks in Nigeria should enhance their capacity in credit analysis and loan administration so as not to make over provision on non-performing loans and while regulatory authorities should pay serious attention on bank's compliance to the relevant provisions of the prudential guidelines and IFRS on loan loss provision.

iv. Banks should hold adequate capital to serve as a buffer against loan losses as this will increase depositors' confidence, attract large customer base and gives them opportunity to compete internationally with other banks around the globe.

5.5 Limitation and Suggestions for further studies

Regardless of the contribution made by this study in examining the effect of credit risk management (default risk, Loan loss provision and capital adequacy) on the financial performance (Return on assets ans return on equity) of listed deposit money banks in Nigeria has some flaws. Moreover, the study only dwells on the banking sector (DMB'S) of the economy while there other important sectors where credit risk management can significantly impact their financial performance.

Based on the identified setback, this study offers suggestions for future research direction. Future researchers can consider other performance measures like return on assets, net profit margin, or return on investment in examining the effect of credit risk management on financial performance of listed deposit money banks.

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