# EFFECTS OF CREDIT RISK MANAGEMENT ON THE FINANCIAL PERFORMANCE OF QUOTED DEPOSIT MONEY BANKS IN NIGERIA

**BY**

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**NSU/ADM/MSC/ACC/221/12/13**

**M.SC. ACCOUNTING AND FINANCE**

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**A DISSERTATION SUBMITTED TO THE SCHOOLOF POST GRADUATE STUDIES, NASARAWA STATE UNIVERSITY IN PARTIAL FULFILMENT OF THE REQUIREMENTS FOR THE AWARD OF MASTER OF SCIENCE (M.Sc) DEGREE IN ACCOUNTING AND FINANCE**

**DEPARTMENT OF ACCOUNTING**
**FACULTY OF ADMINISRATION**
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**NIGERIA**

**FEBRUARY 2018**

## DECLARATION

I hereby declare that this dissertation has been written by me and it is a report of my research work. It has not been presented in previous application for the award of Masters degree. All quotations are indicated and sources of information specifically acknowledged by means of references.

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## CERTIFICATION

This dissertation entitled “Effect of Credit Risk Management on the Financial Performance of quoted Deposit Money Banks in Nigeria” meets the regulations governing the award of Masterof Science (M.sc) Degree in Accounting and Finance of the School of post graduate studies, Nasarawa State University, Keffi, and approved for its contribution to knowledge.

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## DEDICATION

This research work is dedicated to my great Son Bezaleel, my blessing and reference of God's wisdom endowments.

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**ABSTRACT**

*This study examines the effect of credit risk management in terms of nonperforming loans, loan loss provision and capital adequacy, on the Financial Performance Proxy by Return on Assets (ROA), Return on Investment (ROI), and Return on Equity (ROE) of quoted Deposit Money Banks (DMBs) in Nigeria. Panel data were collected from the financial reports of the sampled quoted DMBs for the period of 11 years spanning through 2006-2016. Descriptive research design was employed and the relationship between the variables were examined using correlation analysis and Panel regression model. It was found that; non performing loans have significant and negative effect on return on assets and return on investment and return on equity but loan loss provision and capital adequacy exert positive and weak effects on return on asset and return on investment and return on equity of quoted DMBs in Nigeria. The study establishes that there is strong correlation between ROA, ROI and ROE revealing that increased exposure to non-performing loans leads to huge loan loss provisioning, which invariably affect capital adequacy. This reduces profitability and threatens existence of ROE. Therefore, there is significant effect of credit risk management on the financial performance of quoted DMBs in Nigeria. It is recommended that management of DMBs should implement more stringent credit risk management beyond the CBN regulatory provisions with a view to fully embed its framework internally thereby reducing the negative impact of nonperforming loans on the financial performance of quoted DMBs in Nigeria.*

# CHAPTER ONE
# INTRODUCTION

## 1.1 Background to the Study

The nature of banking industry is highly sensitive amidst stiff competition, technology and regulation, because more than 85% of their liabilities are deposits in trust from customers (Saunders and Cornett, 2005). Deposit Money Banks uses customers' deposits to create loan portfolio for their borrowers, which in fact is the core revenue generating activity for most banks. This credit creation process exposes the banks to high default risk which might leads to financial distress, including bankruptcy. Yet, banks must create credit for their clients to be able to make money, survive stiff competition and growth. The management of the trade-off between risk and returns is important for sustainable profitability of Deposit Money Banks. Charles and Kenneth, (2013). Amidst heightened concern about the regulatory requirement, cost of funds, fast changing consumer preferences, intensifying competition, profitability pressures and corporate data cleansing and rendition system, financial performance assumes greater importance in the banking world (Price water coopers, 2009).

Credit Risk Management is a pre-requisite framework for a financial institution stability and continuing profitability. Charles and Kenneth, (2013) stated that Credit Risk Management has been viewed as the combination of coordinated task and activities for controlling and directing risk which confronts the financial institution through key tactics and processes. Pandey (2004) stated that credit risk is still the most significant risk for corporate banking institutions. Duffie and Singleton (2003), defined credit risk as the risk of default or of reductions in market value caused by changes in the credit quality of issuers or counterparties. Generally speaking, credit

creation is the main income generating activity for banks but involves huge risk to both the lender and the borrower, Felix and Claudine (2008).

Credit risk management is a systematic structural approach to managing uncertainties through risk assessment, evaluation, developing strategies to manage it, and mitigation of risk using managerial resources. The strategies include transferring to another party, avoiding the risk, reducing the negative effect of the risk, and accepting some or all of the consequences of a particular risk. The goal of credit risk management is to maximize a bank's value through maximizing 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 risk in individual credits or transactions.

The management of credit risk is a critical component of the comprehensive approach to enterprise risk management framework and essential to the long-term success of any banking organization. This study will look at the effects of Credit Risk Management on the performance of Quoted Deposit Money Banks (DMBs) in Nigeria with Non-Performing Loans Ratio (NPLR), Loan Loss Provision Ratio (LLPR) and Capital Adequacy Ratio (CAR) as proxy indicators of credit risk management and Return on Assets (ROA), Return on Equity (ROE) and Return on Investment (ROI) as proxy for financial performance.

Non-Performing Loans Ratio indicates the proportion of the total loans that has been set aside but not charged off. It represents the percentage of total loan that has been either in default or close to be in default due to customer or borrower inability to meet

repayment obligations. This principle of creating loss provision is based on the financial state of the book debts and the ability of the borrower to pay.

Loan Loss Provision Ratio stem from comparative analysis of impairments and depletion in value of loan facilities because unpaid overdue over a period considered as watch listed, impaired, expired and inactive portion of the loan. A certain percentage of the loan portfolio is taken off to hedge against the danger of losses arising from default in repayments.

Capital Adequacy Ratio is a measure of a bank's equity capital expressed as a percentage of its risk weighted asset. Capital adequacy ratios (CAR) are a measure of a bank's ability to absorb losses in relation to the amount of its risk weighted credit exposures. CAR could surrogate credit risk relative to return on assets, return on equity and return on investment as it represents a minimum regulatory capital to risk asset ratio (CRAR) that guarantees sustained financial performance and stability. CAR is very important to shareholders because it measures financial soundness of the Bank and serves as monetary buffer to changes in aggregate economic and systemic lending growth.

Return on Assets (ROA) shows how a bank is able to utilize its assets to generate profits from the operational activity of the bank. ROA is an indicator of how efficient a bank management is at using its risk assets to generate earnings. It measures a bank ability to turn its assets into profits for its shareholders. ROA is a financial ratio that shows the percentage of profits a company earns in relation to its overall resources.

Return on Equity (ROE) indicates the amount of net income returned as a percentage of shareholder's equity. ROE measures Banks profitability by revealing how much

profits it generates with the money shareholders have invested. It aptly provides the investor with insights into how efficient a bank management is at utilizing their invested resources. ROE is a financial ratio that measures a bank profitability in relation to the book value of shareholder's equity or net asset. Thus it's a profitability metrics for analyzing how well a bank uses equity investment to generate good earnings and maximize shareholder's wealth.

Return on Investment (ROI) measures the gain or loss generated on an investment relative to the amount of capital employed. Return on investment is expressed as a percentage or ratio of profit relative to investment. in order to compare profitability and efficiency of the deposit money banks. ROI is one of the most used profitability ratios it excludes time factor and very flexible and easy to calculate. Thus ROI is a performance measure used to evaluate the efficiency of an investment or compare the efficiency of a portfolio of investment to ascertain it worthwhile.

Financial Performance of Banks encompasses the operating performance and sound resource utilization of deposit money banks. It is noteworthy that operating performance of a business shapes its stability and sustainability. Financial statements are the diagnostic tools for the manager and analyst to measure, examine and interpret financial strength of their business. Business concern that is unable to generate profit from their core operations cannot successfully remunerate the providers of funds in the long run and thus makes it difficult for them to maintain the continuity of their investment.

## 1.2 Statement of the Problem

Non-performing loans (NPL) has been identified as the major challenges to banks financial performance. Charles (2015). Stakeholders are becoming more aware of the dangers posed by these debts and more worrisome is the increasing trend of provisions for bad and doubtful debts in most deposit-money banks in recent times. According to Hennie (2003) “despite innovations in the financial services sector over the years, credit risk is still the major single cause of banks failures, for that reason “more than 80 percent of a bank’s statement of financial position generally relates to risk asset”. Prior to 2005, there were 89 Banks in Nigerian Banking Industry, upon consolidation in December 2005, 25 DMBs emerged and touted as stronger banks, however in 2009, there was another round of failure leading to the establishment of Assets Management Corporation of Nigeria (AMCON).

In recent past, five Nigerian banks (Oceanic Bank, Intercontinental Bank, Afribank, First Inland Bank and Union Bank) became bankrupt as a result of poor credit risk management. First Bank Nigerian Plc took a giant stride and made N125.6billion impairment provision for credit losses representing 48.5% of net interest income in 2016 fiscal year (FBN holdings 2016 annual reports).

Despite this initiative, researcher observes that there is higher concentration on enterprise wide risk management rather than credit risk management by the board of and regulators of deposit money banks. If deposit money banks year in, year out makes huge provision for loan losses against profit due to incidences of nonperforming loans rising at alarming rate and the campaign for more capital injection increases, then there is a problem. This actually prompts the need for more studies on credit risk management so as to reduce the increasing burden of loan

losses which easily lead to bank failure. Naburgi (2012) assesses the impact of nonperforming loans on bank's profitability and found out that there is negative relationship between nonperforming loans and bank profitability. Charles Ruhara (2015) in his works "Credit Risk management and commercial banks profitability in Rwanda" analyses the impact of Credit Risk on profitability of banks advocated for strong policies that will mitigate its negative impact on banks profitability. However, amidst the various studies on the subject of credit risk management, the trend of DMBs huge provisioning in Nigeria is on the increase in their annual audited accounts creating opportunities and reasons for further investigation and studies. This study will anchor on the works of Kolapo (2012) to examine the effects of Credit Risk Management on the financial performance of Deposit Money Banks in Nigeria.

## 1.3 Research Questions

i. What is the effect of Non-performing loans on the return on asset of quoted DMBs in Nigeria?
ii. What is the effect of Loan loss provision on the return on investment of quoted DMBs in Nigeria?
iii. What is the effect of Capital adequacy ratio on the return on equity of quoted DMBs in Nigeria?

## 1.4 Objectives of the Study

The main objective of this study is to assess the effects of CRM on the FP of Quoted DMBs in Nigeria. The specific objectives are to:

i. Assess the effect of Non-performing loans on return on asset of quoted DMBs in Nigeria.

ii. Examine the effect of Loan loss provision on return on investment of quoted DMBs in Nigeria.

iii. Evaluate the effect of Capital adequacy on return on equity of quoted DMBs in Nigeria.

## 1.5 Statement of Hypothesis

The following Hypotheses are formulated in Null form for the purpose of achieving the objectives of the study:

**$H_{01}$:** Credit Risk Management (measured by NPLR, LLPR and CAR) has no statistically significant effect on Profitability (measured by return on asset) of quoted DMBs in Nigeria.

**$H_{02}$:** Credit Risk Management (measured by NPLR, LLPR and CAR) has no statistically significant effect on Profitability (measured by return on investment) of quoted DMBs in Nigeria.

**$H_{03}$:** Credit Risk Management (measured by NPLR, LLPR and CAR) has no statistically significant effect on Profitability (measured by return on equity) of quoted DMBs in Nigeria.

## 1.6 Significance of the Study

This study will be significant to financial institutions as it will provide them with insights on the better way to manage credit risk by making adequate provision for loan losses. Furthermore, the study will amount to reducing cases of non-performing loans as effective credit risk management system remains a watchword in the banking industry. This however, will engender or restore the confidence of depositors to deposit their money which in turn aid in the continual success of the banking business and the economy by extension.

The government will benefit from this study as it would amount to reducing the extent of credit risk through stringent control mechanism in the banking sector thus, stabilizing the financial system and the economy as a whole. To the general public, they will be rest assured that their monies are in save hands since effective credit risk management can reduce nonperforming loans and engender the confidence of the customers. Finally, the study will re-direct the Nigerian banks on their core revenue generating activity (lending) as against the investment option which is less risky and less profitable. In Nigeria, several restructuring plans have been undertaken by the Central Bank of Nigeria in its banking reforms to strengthen the banking sector, from consolidation to recapitalization and financial and managerial restructuring. This study might also provide policy re-direction for the core revenue generating activity.

## 1.7 Scope of the Study

The study focuses on credit risk management framework viz:( management of nonperforming loans, prudential provision for loan losses and capital adequacy ratio) as independent variables and (return on Investment, return on equity, and return on assets) as dependent variables, for evaluating performance of quoted DMBs in Nigeria. Fifteen (15) quoted DMBs in Nigeria, over a period of 11 years (2006-2016) will be covered in the study. This encompasses the post consolidation period, recapitalization and injection (Bailout) experience.

## 1.8 Definition of Terms.

**Financial Performance:** This refers to how well a bank can use its assets or resources from normal operations to generate income using different financial measures. Financial performance indicators include return on assets, return on equity and return on investment

**Profitability**: The state or ability of a bank to generate revenue from all business transactions after all relevant expenses are deducted.

Statement of Financial performance: This is an accounting summary that details the banks revenue, expenses and net income in line with its objectives.

**Credit risk management:** This refers to the practice of mitigating losses by understanding the adequacy of banks capital and loan loss reserves at any given time.

Risk Assets: An asset that has significant degree of price volatility, vulnerability to market fluctuations, changes in interest rates, credit quality, repricing and repayment problems,

**Loan Impairment:** A probable credit situation where not all principal and interest payment will be collected due to reduction in current market price compared to the carrying value.

**Credit Quality:** A reviewed rating which evaluates credit risk associated with a given asset or loan portfolios.

**Deposit Money Bank (DMB):** A financial institution licensed by the regulatory authority to mobilize deposit from the surplus unit and channel the funds through loans to the deficit unit and performs other financial services for its customers. The bank has liabilities in the form of deposits from customer's payable on demand, transferable by cheques or other instruments or electronic media usable for making payments.

# CHAPTER TWO

# LITERATURE REVIEW

## 2.1 Conceptual Framework

This part reviews existing literature on ideas that explains the scope of this study to be able to contribute to knowledge by expanding the variables and important determinant factors.

### 2.1.1 Concept of Credit Risk Management

Anthony (1997) stated that credit risk management actually results from mitigating non-performance by means of a borrower either unwillingness to perform in the pre-dedicated gotten smaller manner or a lack of ability. Credit Risk Management (CRM) is the systematic review and set of risk strategy that anticipate and address the likelihood that some of a financial institution's property, in particular its loans, will decline in price and probably turn out to be irrecoverable in the case of outright default, or the risk of delay in the servicing of the loan. Heffernan (1996) Management of credit risk is very important to assure soundness of any financial institution. Credit Risk Management is a process used by firms to establish, check, control and prioritize credit risks related to operation. After a risk is identified, the risk manager must improve a plan to scale down or cut down the affect of it. Managers ought to prioritize risks to be able to avert probably unsafe movements. The degree of success of a bank greatly depends on the ability of management to ensure that the practice of risk management mitigates the impact of risk in such a way and to such an extent that recorded returns is not only robust but covers the interests of various stakeholders, and assures healthy position of the bank.

Managing credit risk is likely one of the oldest risk reduction strategy deployed by financial institutions such as banks to preserve loss of asset value and profit. (Broll, Pausch &Welzel, 2002). Considering that credit risk contains the possibility of wiping out sufficient financial institution's capital to drive it into bankruptcy, managing this type of threat has perpetually been one of the most predominant challenges in banks (Broll, 2002). Credit Risk Management intends to maximise the highest risk adjusted return by assessing the risk inherent in the transactions as well as portfolios and managing those risk exposures to an acceptable level. Credit Risk Management is thus a systematic process by which credit impairment signals are identified, managed and proactive controls measures taken to reduce and safeguard against such credit risk.

Credit Risk Management, according to Basel Committee of Banking Supervision BCBS (2001) is the possibility of shedding the amazing loan partly or absolutely, because of credit pursuits (default risk). BCBS (1999) notes that a bank counterparty or borrower will fail to satisfy its obligations in keeping with agreed terms but also observes that credit risk sources (or counterparty risk) is increasing faster in a few financial instruments other than loans, together with acceptances, trade financing, interbank transactions, foreign exchange transactions, financial options, swaps, futures, bonds, equities, and in the extension of guarantees and, commitments and the agreement of transaction.

Basel Committee (1999) indicated that the increases in credit losses will lift the marginal fee of debt and equity, which in turn raises the cost of money for the financial institution. To measure credit score risk, there are a number of ratios employed by using researchers. The ratio of loan Loss Reserves to Gross Loans

(LOSRES) is a measure of financial institution's asset that suggests how so much of the whole portfolio has been provided for but now not charged off.

Risk management is a board process and procedures used by organizations to identify, assess, manage and prioritize different risks associated with operation. After a risk is identified, the risk manager must develop a plan to minimize or reduce the impact of it. Managers must access and prioritize risks in order to prevent potentially damaging events. Depending on the business or organization, there are specific strategies to manage individual risks. According to SAS (2015) credit risk management is the process of managing the capital assets of banks and the loss of loan reserves. Credit risk itself refers to the likelihood of negative losses if a borrower fails to repay debt of any kind. Managing credit risk is a way of improving efficiency and attaining a competitive edge. Credit risk management maximizes bank's risk adjusted rate of return by maintaining credit risk exposure within acceptable limits in order to provide framework for understanding the impact of credit risk management on banks' profitability (Kargi, 2011).

Demirguc-Kunt and Huzinga (1999) opined that credit risk management is in two-fold which includes, the realization that after losses have occurred, the losses become unbearable and the developments in the field of financing commercial paper, securitization and other non-bank competition which push banks to find viable loan borrowers.

Lindergren (1987) argued that 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. The implications for communication and accountability assigned.

### 2.1.2 Concept of Financial Performance

Mills (2008) defined Financial Performance (FP) as a shrewd measure of how a business concern can use its assets or financial investments in its core business to generate revenues over a period. There are numerous methods for measuring financial performance, however all measures must be taken in aggregates to surrogate the dependent variable. Detailed proxies for measurement of financial performance used in this dissertation entails the accounting measure of return on equity (ROE), return on asset (ROA), and return on investment (ROI). Other financial indices such as profitability ratios, liquidity ratios, leverage ratios, market value ratios and asset management ratios are not emphasized in the study. Carreta and Farina (2010), argue that use of financial performance ratings could nonetheless be justified because it displays what managers evaluate in scorecard as profitability and efficiency.

### 2.1.3 Determinants of Credit Risk Management and Banks financial Performance

The role of bank remains central in financing economic activity and its effectiveness could exert positive impact on overall economy as a sound and profitable banking sector is better able to withstand negative shocks and contribute to the stability of the financial system (Athanasoglou 2005). Therefore, the determinants of bank performance have attracted the interest of academic research as well as of bank management. Studies dealing with internal determinants employ variables such as size, capital, credit risk management and expenses management. The need for risk management in the banking sector is inherent in the nature of the banking business. Poor asset quality and low levels of liquidity are the two major causes of bank failures

and represented as the key risk sources in terms of credit and liquidity risk and attracted great attention from researchers to examine their impact on bank profitability.

Credit risk is by far the most significant risk faced by banks and the success of their business depends on accurate measurement and efficient management of this risk to a greater extent than any other risk (Giesecke, 2004).

## 2.2 Empirical Review

This section reviews related studies on banks profitability and credit risk management are considered here in order to draw from the conclusions.

### 2.2.1 Credit Risk Management and Return on Asset

Return on Assets (ROA) is the ratio of net income to total assets. Guru (1999). ROA indicates how profitable a company is in relation to its total assets. It gives an idea as to how efficient the management uses assets to generate earnings. It is the ratio of the net income (less preference dividends) divided by book value of total assets as reported in the annual reports. Williams and Firer (2003). It is expressed mathematically as: ROA= Net Income / Total Assets. Scholars have examined the relationship between credit risk management and return on assets. For instance, Al-Khouri (2011) assessed the risk and performance of Gulf Cooperation Council (GCG) banking sector which involves ROA and ROE as dependent variables and credit risk, liquidity risk, capital risk and bank size as the independent variables. The study found a positive relationship between credit risk and ROA.

### 2.2.2 Credit Risk Management and Return on Investment

Return on investment is the ratio of net income to total capital employed. The ROI as a profitability performance measure is used by bankers, investors, and business analysts to assess a company management's efficiency in using available resources and financial strength or to compare the efficiency of a number of different investments.

Shahbaz Haneef ( 2012) conducted a study to investigate the impact of risk management on non- performing loan and profitability of banking sector of Pakistan. In the model ROI was defined as profitability indicator while NPLR as credit risk management indicator.

Five banks were selected and whole data was secondary in nature.The result of the study reveals that there is no proper mechanism for risk management in banking sector of Pakistan. The study also concluded that non –performing loans are increasingly threathening profitability of banks.ROI is one of those important ways of making judgments as to where to direct new investment funds as they become available. The concept of ROI can be applied to a number of situations such as divisions, product lines, or product centre. For example, it can be applied to evaluation of a segment or a branch or department of an enterprise, a product line, a transaction or an individual investment, and even to evaluate the total enterprise. In this way, it gives management a basis for comparing the performance of different areas and shows how effectively each division used its invested capital to earn a profit. ROI can also be used to evaluate a proposed investment in new equipment by dividing the increase in profit attributable to the new equipment by the increase in invested capital needed to acquire

it. If the ROI so obtained is higher than the company's cost of capital prior to the investment, and no better investment opportunities exist for those funds, it may make sense to purchase the equipment.

Danson Musyoki in 2011 conducted a study with the title of The Impact of Credit Risk Management on the Financial Performance of Banks in Kenya for the period 2000-2006 to asesss various paramters perinent to credit risk management as it affect banks finncial performance.

Parameters covered in the study were; default rate, bad debts costs and cost per loan asset. The study employed simple random sampling in order to pick 10 banks. The financial reports of these 10 banks were used to evaluate the profitability ratio for seven years in comparative analysis (2000-2006). the profitability ratio to default rate, cost of debt to default rate, debt collection to default rate and cost per loan asset which was presented in descriptive regression and corelation was used to analyse the data. The study reveled that all theses parameters have ana inverse impact on banks finanacial performanace, however the default rate is most predictor of bank financial performance.

The return on invested capital measures the after-tax profit generated by the business itself, excluding any interest expenses (or interest income), and compares it to the capital raised from equity and debt holders that has already been deployed (not held as cash). Of the three measures of operating returns, ROI is the most useful and all encompassing in assessing the performance of the underlying business Berk, DeMarzo and Harford ( 2015).

### 2.2.3 Credit Risk Management and Return on Equity

Return on investment (ROE) is the ratio of net income to total equity. It is the value of overall profitability of the fixed income per Naira of equity Saunders and Marcia (2011). This measure the amount of net income after taxes earned for each Naira of equity capital contributed by the bank's shareholders. Saunders and Marcia (2011). A large drop in equity capital may results in a violation of minimum regulatory capital standards and increases the risk of insolvency for the banks. Saunders and Marcia ( 2011). Broll, Pausch and Welzel(2002) conducted a study titled Credit Risk Management and Profitability in Commercial Banks in Sweden to find out how credit risk mangenenet affects the profitability of banks.

The main purpose of the study was to describe the impact level of credit risk management on profitability in four commercial banks in Sweden. In the model, ROE was defined as profitability indicator while NPLR and CAR as credit risk management indicators .

The quantitative method was used in order to fulfill the main purpose of the study and regression model employed to do the empirical analysis. The data was collected from the sample banks annual reports (2000-2008) and capital adequacy and risk management report reports (2007-2008).

The findings and analysis reveal that credit risk management has effect on profitability of all the 4 banks analysed among the two credit risk management indicators NPLR has a significant effect than CAR on profitability (ROE). Rufai (2013) examined the Efficiency of Credit Risk Management on the performance of Banks in nigeria.

The study seeks to determine if credit risk have effect on the profitability and examining the relationship between interest income and bad debt of the Union Bank Plc.

In the study, Return on equity indicates the overall profitability and efficiency while Non-performing loan over total assets shows the level of banks' exposure to credit risk.

The study used population of the twenty- one (21) commercial banks in Nigeria. Time series and trend analysis are used for the analysis.Correlation coefficient and regression analysis were used in testing the hypotheses.

The study conclude that credit risk affect the performance of fUnion Bank Plc and that to maintain high interest income, attenstion needs to be given to maintain high interest income, attention needs to be given to credit risk management especially regarding the lending philosophy of Union Bank Plc.

Ogilo 2012 also investigated the impact of Credit Risk Mangement on financial performance of Comercial Banks in Kenya.

Data collected were analysed to determine the impact of credit risk management on the financial performance of commercial banks and also attempted to establish if there exists any relationship between the credit risk management determinants by use of CAMEL indicators and financial performance of comercial banks in Kenya.

The study took an independent variables of: CAMEL components, capital adequacy, asset quality management efficiency and liquidity and the dependent variable as financial performance A causal research design was undertaken in the study and this

was facilitated by the use of secdonary data which was obtained from the Central Bank of Kenya. The study used multiple regression analysis in Kenya.

The study used multiple regression analysis and the findings presented in the form of tables .The study found that there is strong impact between the CAMEL components on the financial performance of commercial banks banks .The study concludes that CAMEL model can be used as a proxy for credit risk management.

### 2.2.4 Credit Risk Management and Loan Losses

Loan-loss provisioning policy is critical in assessing financial system stability, in that it is a key contributor for fluctuations in banks' profitability and capital positions, which has a bearing on banks' supply of credit to the economy. Beatty and Liao ( 2009). In principle, loan loss provisions allow banks to recognize in their profit and loss statements the estimated loss from a particular loan portfolio even before the actual loss can be determined with accuracy and certainty as events unfold and are actually written off. In other words, loan-loss reserves should result in direct charges against earnings during upturns in the economic cycle, as banks anticipate future losses on the loan portfolio when the economy hits a downturn. When these anticipated loan losses eventually crystallize, banks can then draw on these reserves, thereby absorbing the losses without impairing precious capital and preserving banks' capacity to continue extending the supply of credit to the economy. Ideally, the level of loan loss provisioning, should be able to reflect the beliefs of bank management on the quality of the loan portfolio that they have, indicating that provisions should be able to cover the whole spectrum of expected credit losses if they are to think of provisions as a measure of true credit risk. Dugan (2009).

Loan loss provision is an expense that is provided for as an allowance for non-performing loans. For every category of non-performing loan a portion is set aside to recover should a client seize payment. This signifies that an increase in nonperforming loan leads to an increase in the loan loss provision expense which in turn affects negatively the bank profitability. Staikouras and Wood (2011) used descriptive statistics, multiple regression and matrix of correlation coefficients to find that in European banks loan loss provisions to total loans had negative impact on bank profitability in Turkey using ROE and the ROA. This is in agreement to Davydenko on his study of the Ukraine banking sector. With the use of ROE and ROA, the findings also conclude that the ratio of non-performing loans to total loans carries a significant adverse effect on profitability. According to the World Bank, the banking sector nonperforming loan dropped from 13.6% in year 2000 to 9.3% in year 2014. Banks with less loan loss provision are perceived to have more safety and such an advantage can be translated into higher profitability.

Maudos and Fernández de Guevara (2004) indicate that the risk of non-repayment or default on a credit (credit risk) requires the bank to apply a risk premium implicitly in the interest rates charged for the operation. Banks that assume greater credit risk present higher interest margins. Doliente (2005) also indicates that the impact of credit risk may reflect the additional risk premium charged by banks for the financial costs of forgone interest revenue. Thus, it is expected that LLPL has negative relationship with return on average assets (ROAA) and return on average equities (ROAE) and positive relationship with net interest margin (NIM). This is consistent with previous studies (Bessis, 2002). (Giesecke,2004). However, credit risk (LLPL)

has the negative effect on bank performance, showing that banks should focus on credit risk management.

Loan loss provisioning as a share of net interest income is a direct measure of differences in credit quality, the higher the ratio, the poorer the quality of loan portfolio. Amongst five regression models, three of them report that the ratio of loan loss reserves to net interest's revenue has a negative impact on ROA with statistical significance. This implies that higher credit risks results in lower profit. Provisions are subtracted from operating profit before provisions, taxes and extraordinary items to arrive at operating profit before taxes and extraordinary items.

From the view of Elaine (2007), Non-performing Loans (NPLs) or credit risk encapsulates the potential loss in the event of credit deterioration or default of a borrower. Thus a sound credit appraisal of loans is very important to the creditor. Dorfman (1998) argues that bankers required an understanding of credit standards, the process by which credit worthiness and credit structure are analysed, decision-making techniques, negotiation, follow-up and problem resolution, in order to effectively manage credit risk thereby reducing NPLs. Abolo (1999) supports Dorfman's assertion and presents his own principles of lending under three headings, that is, safety, suitability and profitability of credit, which equally compel bankers to follow the lending rules.

### 2.2.5 Effect of Credit Risk Management on Financial Performance

A detailed bank-to-borrower relationship can also be found to be greatly positively involving credit risk where this relationship raises the banks' willingness to take extra profit for investment decision. Credit Risk management ensures regular risk

assessment, risk response and risk reporting based on the stage or level of impairments by lending to riskier corporations with higher returns. Galloway, Lee and Roden,(1997) use standard deviation of weekly share returns as a proxy for bank risk whilst market to e-book value, running leverage, capital, real measurement and high risk, a dummy variable. The study revealed that control systems was in place to reduce risk and that capital is significantly negatively related to risk. Measurement (measured by market price of equity) is constructive and is enormously concerning risk in the course of the regulatory interval but is negatively massive in the course of a deregulatory regime when restrictions had been imposed on banks following the failure of too-huge to fail coverage.

Berger and DeYoung (1997) in finding Lagged Capital (measured via equity capital to total assets) shows blended results for specific forms of banks. In the case of thinly capitalized banks, the coefficient of Lagged Capital is greatly negatively involving credit risk. This discovering helps the moral risk speculation, and suggests that, on an usual, thinly capitalized banks take more dicy loans, which possibly might result in bigger situation loans. However, for all-banks pattern, Lagged Capital coefficient is optimistic and colossal. The researchers suggested that a feasible rationale might be that banks may raise the capital prematurely to provide a cushion in opposition to viable loan loss coming up from NPL increases.

Shrieve and Dahl (1992) also find identical outcomes but, Cummins and Sommer (1995) discover an inverse relationship between capital asset ratio and credit risk. ratio This discovering means that better capitalized banks take extra risk for higher returns. This suggest further evidence of the impact of Credit risk management on bank performance as shown by way of maintenance of profitability. Angbazo (1997).

Therefore, banks with a riskier loan portfolio will attract higher returns (interest margin) to compensate the better risk of default.This outcome suggests the giant relationship between net curiosity margin and credit score risk. The findings of Hassan, et al. (1994) aid the prior findings that dimension and Diversification are negatively related to risk. Bikker and Metzemakers (2004) examine how financial institution provisioning behaviour is concerning industry cycle. They discovered that banks make extensively higher provisions against impaired loan or larger credit risk when GDP growth is low. Hence, larger provision suggests higher revenue potentials.

Ahmed (1998) find loan loss provision (LLP to total asset) to be positively enormously associated with NPL. For that reason, a bigger loan loss provision suggests an expansion of credit Risk Management strategy to deteriorating loan facilities. Fisher, Gueyie and Ortiz's (2002) studied banks in developing nations and found identical outcome with LLP positively regarding risk despite being in an extra fiscal surroundings or stage of progress or banking method, the Malaysian banks also show off equivalent outcome meaning their LLP is positively significant to Credit Risk Management (Ahmad, 2003).

Fisher, et al. (2002) find that in Canada and Mexico, leverage is significantly positively related to financial institution threat. In distinction, Galloway, Lee and Roden(1997) in finding combined outcome for the U.S. Running leverage is positively concerning risk in pre-deregulatory interval; negatively in de-regulatory durations. Nonetheless, it's greatly positively concerning threat in publish-deregulatory or re-legislation durations. Fisher, et al. (2002) and Hassan et al. (1994) to find that financial institution measurement (measured by using ordinary logarithm of total property) is tremendously negatively regarding risk of U.S. Banks.

### 2.2.6 Assessment of Credit Risk Management and Bank's Performance

The loan loss provisions to loans ratio (LLPL) is used to proxy the credit score risk. Changes in credit score risk may mirror alterations within the health of the bank's loan portfolio (Cooper; Jackson & Patterson, 2003), which can have an impact on bank efficiency. Besides, Miller and Noulas (1997) point out that the more monetary institutions are exposed to high-risk loans, the larger the accumulation of unpaid loans and the cut down the profitability. Nonetheless, riskier loans must produce greater interest earnings.

Naburgi (2012) assesses the impact of nonperforming loans on financial institution's profitability and liquidity on a pass sectional panel information of five ill banks (Afribank, First Inland bank, Oceanic bank, Intercontinental bank, and Union bank) in Nigeria throughout ten years spanning via 2001-2010. The regression outcome reveals enormous negative relationship between nonperforming loans, and return on belongings (ROA) and liquidity.

Epure and Lafuente (2012) examine bank performance in the presence of risk for Costa-Rican banking enterprise in the course of 1998-2007. The outcome show that efficiency enhancements comply with regulatory alterations and that risk explains variations in banks and that NPL negatively influence efficiency and return on investment while the capital adequacy ratio has a positive influence on the web interest margin.

## 2.3 Theoretical Framework

This section covers the divergent theories of Credit Risk Management upon which the researcher establishes and validate the concepts of this study.

### 2.3.1 Buffer Theory of Capital Adequacy (1996)

Calem and Rob propounded the buffer theory and emphasized the need for ample capitalization and protecting limit (reserves) as a percent of deposit for Deposit Money Banks as a way to cushion the result of liquidity in the event of loan losses. Banks could decide on to hold a 'buffer" of excess capital to shrink the probability of falling under the authorized capital standards, chiefly if their capital adequacy ratio is very volatile. Capital requisites represent the foremost banking supervisory instrument in Nigeria. The Central Bank of Nigeria (CBN) intervenes little in banks' routine however does immediately habits on-web site examination and every now and then delegating this project to external auditors. In contrast, a breach of the capital standards is viewed a most important infringement of banking laws and is not tolerated by the CBN. Banks last undercapitalized for extended periods are closed. The withdrawal of some banking licenses on the expiration of the latest recapitalization of banks in Nigeria in 2005 is a pointer to this truth. Banks will require more capital if deposits should not fully mobilize from the public. The buffer thought of Calem and Rob (1996) predicts that a financial institution drawing near the regulatory minimal capital ratio can have an incentive to lift capital and scale down risk with the intention to prevent the regulatory tightening caused with the aid of a breach of the capital specifications. Nevertheless, poorly capitalized banks will also be tempted to take more risk within the hope that higher expected returns will aid them to develop their capital. This is likely one of the ways risks in the case of slash capital adequacy affects banking operations. Within the occasion of bankruptcy of a bank, the risks are absorbed with the aid of the bank, buyers and Nigeria Deposit coverage corporation (NDIC). At present NDIC pays a maximum of N200,000 to a

purchaser in the occasion of financial institution failure. For that reason, patrons are involved about capital position of banks at all time. Banks are anticipated to insure and pay 15/16 of purchasers deposit liabilities elevated by way of 1% to NDIC to permit their shoppers advantage from the scheme. The above observe of NDIC in Nigeria is relevant to different international locations but varies in amount. Vojta (1980) opines that adequate capital provision against extra loss allows the financial institution to continue operations in intervals of difficulty until a usual stage of earning is restored. The benchmark set with the aid of regulators of financial institution capital oftentimes differs from those of the bankers. These capital necessities have led to questions on whether or not or not regulators had been capable to deliver about alterations in bank capital when their specifications of capital adequacy differed from these of bankers. Aggressive banks could try to prolong the frontiers of "imprudent administration coverage" with the aid of working with much less capital base, most commonly in violation of the regulatory recommendations. However, the supervisory companies most likely stand their ground by resisting decline of capital to restrict financial institution failure with the concomitant high rate to the society.

### 2.3.2 Deposit Insurance Theory

This theory is consistent with risk switch strategy that places designated portfolio of threatened asset to be taken over by way of insurance coverage.The deposit coverage theory also provides an insight into the behaviour of industrial banks (Flannery, 1989; Cham, Greenbaum and Thakor, 1992). In the context of this theory, banks are seen as portfolio of dicey claims. As insured banks broaden their risk of failure without limit, there is an anticipated price switch of wealth from government Deposit insurance

company to financial institution homeowners. Regulators are worried about bank's soundness, detailed with admire to solvency or the likelihood of bank failure. Thus, regulation of financial institution risks publicity is necessary to cut down the anticipated losses incurred by the deposit insurance organization. Deposits solicited from buyers should not as in charge and reliable as the financial institution capital requirement. It cannot be used for long-run planning. Nonetheless, extra deposits means banks can furnish extra loans and will not obviate the necessity for immoderate capital. Where financial institution loans and advances are given out to purchasers without due procedure it could affect liquidity and capital function of a bank in the end.

### 2.3.3 Anticipated Income Theory

The anticipated income theory was developed in 1940 (Prochnow, 1949). The idea is to ensure income realisation based on sound loan portfolio and liquidity supply. In essence, banks' liquidity will also be deliberate if scheduled loan repayments are based on future sales of the borrower at a factor in time. For that reason, the speculation recognises the have an effect on of the maturity structure of the loan and funding portfolio on liquidity position of banks. Similar to different identical theories, expected income idea predominant flaws are in the instalmental loan repayments. Income from loans facilities should be prudently applied and attendant provisions charged to maintain minimum capital requirement. Where financial institution loans and advances are given out and default is anticipated immediate risk measures must be taken such that liquidity is not affected.

# CHAPTER THREE

# RESEARCH METHODOLOGY

## 3.1 Research Design

The study employs descriptive and ex-post facto research design. Burns and Grove (2003) states that descriptive research is designed to provide a blueprint or picture of a situation as it naturally and actually happens. The study used panel information over eleven (11) years (2006-2016) of post consolidation banking experience to explore the outcomes of impartial variable (credit risks management) on the dependent variable (profitability) and the character of the connection that exists between the variables.

## 3.2 Population, Sample and Sampling Techniques

The population of the study is the 15 deposit money banks quoted on the floor of the Nigerian Stock Exchange as at 2017. The simple sample selection of 13 banks with national and international authorization based on certain criteria:

1. The provision of steady financial reports over the interval.
2. The banks were not merged during the study period
3. The banks are quoted and trades on the floor of the Nigerian stock exchange till date.
4. The banks preserve their corporate names from consolidation to date.

**Table: 3.1 List of quoted Deposit Money Banks as at 31st December 2017**

| S/N | List of quoted Deposit Money Banks |
|---|---|
| 1 | Access Bank Plc |
| 2 | Diamond Bank Plc |
| 3 | Fidelity Bank Plc |
| 4 | First Bank Holdings |
| 5 | FCMB Group |
| 6 | Guarantee Trust Bank Plc |
| 7 | Skye Bank Plc |
| 8 | Stanbic IBTC Holdings |
| 9 | Sterling Bank Plc |
| 10 | United Bank for Africa Holdings |
| 11 | Unity Bank Plc |
| 12 | Wema Bank Plc |
| 13 | Eco Bank Plc |
| 14 | Zenith Bank Plc |
| 15. | Union Bank plc |

**Source**: NGSE listed company's / West African markets

Situated on these criteria, thirteen (13) quoted DMBs were chosen for the study.

## 3.3 Methods of Data Collection

The study used secondary data from banks' annual reports. All the information used for the research and to run the model are pooled from annual financial reports (income statements and statement of financial position) of the sample deposit money banks. Panel data was considered as it can exhibit heterogeneity amongst unique models under consideration over time via permitting for individual specific variables. Apart from, by way of combining time series and cross-section observations, it offers extra informative data. In addition, panel information can detect and measure effects without difficulty but cannot be located in pure time series data (Gujarati, 2004).

## 3.4 Techniques for Data Analysis and Model Specification

The study employs descriptive and causal research designs using panel data of eleven (11) years (2006-2016) with the aid of Stata to determine and analyze the effect of Credit Risk Management on the Financial Performance of quoted DMBs in Nigeria.

The study was validated using the fixed effect and random effect models (panel regression models) The Hausman test was applied to choose the most appropriate and suitable model between fixed and random effect (Hakim& Shimko, 1995). Panel regression was conducted, a test of normality was also done using descriptive statistics and Jarque-Berra. Also, correlation test was conducted to analyze the relationship between the variables and test of Multicollinearity using Variance Inflation Factor (VIF) to identify any form of bias that may affect degree of accuracy of the results or findings.

### 3.4.1 Model Specification

The study is aimed toward establishing the relationship between each and every unbiased variable against dependent variable using econometric models expressed functionally based on the following assumption: Bank's profitability (B$\pi t$) is measured utilizing three indications which are, ROA (Return on asset) ROI (Return on investment) and ROE (Return on equity) and Credit Risk Management $C$RM$t$ is measured using three main indicators which are NPLR (Nonperforming mortgage ratio), RLLP (Ratio of loan loss provision) and CAR (Capital adequacy ratio).

**Table 3.2 Summary of Dependent and Independent variables**

| **Independent variables (CRM Indicators)** | **Dependent variables (Profitability Indicators)** |
|---|---|
| Non- performing loan Ratio (NPLR ) | Return on assets (ROA) |
| Capital adequacy (CAR) | Return on investment (ROI) |
| Loan loss provision(LLPR) | Return on equity (ROE) |

**Model I:-**

ROA= $f(NPLR\text{t}, RLLP\text{t}, CAR\text{t})$ … … … … … … … … ….I

**Model II:-**

ROI = $f(NPLR\text{t}, RLLP\text{t}, CAR\text{t})$ … … … … … … … … ….II

**Model III:-**

ROE= $f(NPLR\text{t}, RLLP\text{t}, CAR\text{t})$ … … … … … … … … ….III

Nonetheless units (i), (ii) and (iii) above are precise or deterministic in nature. With the intention to permit for the inexact relationship among the variables as within the case of most financial time series variables, stochastic error time period "μt" is added to form just right econometric models. Econometrically, the regression units will also be targeted at.

### 3.4.2 Measurement of Variables

Model I: ROA: This is measured as net income divided by Total Asset.

$$\text{ROA} = \frac{\text{NET INCOME}}{\text{TOTAL ASSETS}}$$

Model II ( ROI):This is measured as net income divided by total Capital Employed.

$$\text{ROI} = \frac{\text{NET INCOME (I-TAX)}}{\text{EQUITY + DEBT (TOTAL CAPITAL EMPLOYED)}}$$

Model III ROE: This is measured as net revenue divided by total owners equity.

ROE is measured as:

$$\text{ROE} = \frac{\text{NET INCOME}}{\text{TOTAL EQUITY CAPITAL}}$$

**Table 3.3 Model**

| VARIABLE MEASUREMENTS | MODEL |
|---|---|
| $ROA = \frac{Net\ Income}{Total\ Assets}$ | $ROA_t = \alpha_0 + \alpha_1 NPLR_t + \alpha_2 RLLP_t + \alpha_3 CAR_t + \mu_t$ |
| $ROI = \frac{Net\ Income(1-Tax)}{Equity + Debt\ (Total\ Capital\ Employed)}$ | $ROI_t = \alpha_0 + \alpha_1 NPLR_t + \alpha_2 RLLP_t + \alpha_3 CAR_t + \mu_t$ |
| $ROE = \frac{Net\ Income}{Total\ Equity\ Capital}$ | $ROE_t = \alpha_0 + \alpha_1 NPLR_t + \alpha_2 RLLP_t + \alpha_3 CAR_t + \mu_t$ |

**Where**:

$ROA_t$ = *Return on asset at time t*
$ROI_t$ = *Return on asset at time t*
$ROE_t$ = *Return on equity at time t*
$NPLR_t$ = *Non performing loan ratio at time t*
$RLLP_t$ = *Ratio of loan loss provision at time t*
$CAR_t$ = *Capital adequacy ratio at time t*
$t$ = *Periods of Observations of the Variables*

Where $\alpha_1, \alpha_2, \alpha_3$ are coefficient values of six independent variables, or exogenous regressors $\alpha o$ is the intercept term or a white noise, mean zero sequence.

## 3.5 Justification of methods

Stata was used in order to estimate the econometric model. The procedure involves specifying the dependent and independent variables; in this case, Credit Risk Management as proxied by LLPR, NPLR and CAR represent the independent variable whilst financial performance (profitability) as proxy by ROA, ROE and ROI represent the dependent variable. Stata was run and from the output, the coefficient values ($\alpha 1 \ldots\ldots a3$) or exogenous regressors ($\alpha o$) were obtained. In addition, the output shows the t statistics and p values for the coefficient that resulted in both rejecting the

hypotheses at a specified 0.05 level of importance. This process is considered simple and specific. This helps to draw a reliable and reasonable conclusion. Saunders and Marcia (2011)

# CHAPTER FOUR
# DATA PRESENTATION AND ANALYSIS

## 4.1 Data Presentation

This chapter covers the presentation and analysis of data collected from the Quoted DMBs in Nigeria with up to date data (i.e. Access Bank Plc, Diamond Bank Plc, Eco Bank Plc, Fidelity Bank Plc, First Bank of Nig. Plc, First City Monument Bank Plc, Guaranty Trust Bank Plc, Skye Bank Plc, Stanbic IBTC Bank, UBA Plc, Union Bank Plc, Unity Bank Plc, and Zenith Bank Plc). Descriptive statistics was used to describe the variables using Mean, Median, and standard deviation, maximum and minimum. Also correlation matrix, data normality analysis, and Panel Ordinary Least Square Regressions, estimation test of Multicolinearity employing the Variance Inflation Factor Test (VIF) were equally conducted. The inferential statistics was used to test the hypotheses at 5% level of significance.

## 4.2 Data Analysis and Results

Data on company variables as collated are presented in Appendix 1 while the spooled regression data are presented in Appendix 11

### 4.2.1 Data on Variables

The dependent variable is profitability, which is measured by ROA (Return on asset), ROI (Return on investment) and ROE (Return on equity). The independent variables are credit risks management, measured by NPLR (Nonperforming loan ratio), RLLP (Ratio of loan loss provision) and CAR (Capital adequacy ratio). However, in identifying the possible impacts of capital adequacy ratio, loan loss provision, and non-performing loan specific characteristics and exogenous factors that would impact

on firm's performance, we conducted descriptive statistics, correlation matrix, data normality analysis, and Panel Ordinary Least Square Regressions. However, some post estimation tests of multicolinearity employing the Variance Inflation Factor Test (VIF) were equally conducted.

The descriptive statistics table above is used to describe the basic features of the data in a study.

**Table 4.1 Descriptive Statistics**

The descriptive statistics table above is used to describe the basic features of the data in a study.

| | ***Return on Asset*** | ***Return on Equity*** | ***Return on Investment*** | ***Equity to Asset*** | ***Loan Loss Provision*** | ***Non Performing Loans*** |
|---|---|---|---|---|---|---|
| Mean | 1.10267 | 6.7622 | 1.0614 | 14.4096 | -17348703 | 36878333 |
| Standard Error | 0.3018 | 3.8091 | 0.3040 | 0.5981 | 2534686 | 5282563 |
| Median | 1.6257 | 11.3805 | 1.5516 | 14.2985 | -8120191 | 17912500 |
| Standard Deviation | 3.7456 | 47.2698 | 3.7725 | 7.4216 | 31454624 | 65554888 |
| Kurtosis | 35.8759 | 40.7965 | 34.5939 | 6.8061 | 25.16217 | 34.96485 |
| Skewness | -4.9896 | -4.2090 | -4.8715 | -1.5381 | -4.63369 | 5.358479 |
| Range | 39.1799 | 624.5488 | 39.1799 | 54.2737 | 247551830 | 570224732 |
| Minimum | -29.6435 | -394.318 | -29.6435 | -23.2947 | -226037000 | 513268 |
| Maximum | 9.5364 | 230.2306 | 9.5364 | 30.9790 | 21514830 | 570738000 |
| Sum | 169.8101 | 1041.386 | 163.4603 | 2219.075 | -2671700206 | 5679263239 |
| Count | 154 | 154 | 154 | 154 | 154 | 154 |

**Source**: Author's computation (2018)

It provides simple summaries about the sample and quantitative analysis of data. From the table above, the mean value for return on assets (ROA), return on equity (ROE), and return on investments (ROI), indicates that, averagely, most of the sampled banks have a relatively high mean of (1.11), (6.76), and (1.11) respectively. This indicates that every ₦1 worth of total assets of the firm, will generate ₦1.11 on

profit before interest and tax as earnings, ₦6.76, returns on returns on equity, and ₦1.11 returns on investments for banks. However, the minimum values for the explained variables were revealed to be negative for the period under review. The variable of capital adequacy (CAR) also known as capital-to-risk weighted assets ratio (CRAR), used to protect depositors funds and promote the stability and efficiency of financial systems rose from -23.29 to 30.98 and maintained a positive average value of 14.53 for the period under consideration. The independent variable of loan loss provision which is an expense set aside as an allowance for uncollected loans and loan payments revealed a negative coefficient of -4.74 which indicates low loan loss provision by most of the deposit money banks. The variable of non-performing loan (NPL) put at an average of 0.15% hit a peak of 2.71% and lowered at 0.21%. This clearly show that default loans or impaired loans has material adverse effect on operating results of Deposit Money Banks.

### 4.2.2 Correlation Analysis

Correlation analysis measures the relationship between the dependent and independent variables.

**Table 4.2 Correlation matrix among ROA, ROE and ROI**

| | ***Return on Asset*** | ***Return on Equity*** | ***Return on Investment*** | ***Equity to Asset*** | ***Loan Loss Provision*** | ***Non Performing Loans*** |
|---|---|---|---|---|---|---|
| ***Return on Asset*** | *1* | | | | | |
| ***Return on Equity*** | *-0.0875* | *1* | | | | |
| ***Return on Investment*** | *0.9908* | *-0.0884* | *1* | | | |
| ***Equity to Asset*** | *0.4641* | *0.0333* | *0.4707* | *1* | | |
| ***Loan Loss Provision*** | *0.3296* | *-0.0970* | *0.3309* | *0.2435* | *1* | |
| ***Non-Performing Loans*** | *-0.2138* | *0.0609* | *-0.2226* | *-0.2079* | *-0.7484* | *1* |

**Source**: Author's Computation (2018)

The relationship represented by the correlation shows that in the long-run, lagged period of CAR (capital adequacy ratio) and RLLP (ratio of loan loss provision) exert positive influences on ROA (return on asset) while NPLR (non-performing loan ratio) impact return on asset negatively.

From the above estimation of correlation matrix among ROE and independent variables, the results suggest that capital adequacy ratio and non-performing loan ratio at average minimum standard impact ROE positively. Relationship between nonperforming loan ratio and return on equity is found to be significantly positive, indicating that non-performing loan has an impact on the DMBs profitability.

Evidence from the estimated relationship in the long-run, lagged period suggests a significant positive relationship between ROI (return on investment) and two credit risk ratios that is CAR (non-performing loan ratio), and RLLP (ratio of loan loss provision) while NPLR is negative and statistically significant. Theoretically NPL is expected to have an inverse relationship on the bank's return on investment. The result however, shows a positive association between capital adequacy ratio and return on investment of DMBs. This means that, Capital Adequacy Ratio is positively related to profitability with statistical significance. As such, profitability of quoted DMBs in Nigeria increases as CAR increases.

**Table 4.3: Skewness/Kurtosis tests for Normality**

| ***Variables*** | ***Obs*** | ***Skewness*** | ***Kurtosis*** |
|---|---|---|---|
| ***ROA*** | 154 | -4.9896 | 35.8759 |
| ***ROE*** | 154 | -4.2090 | 40.7965 |
| ***ROI*** | 154 | -4.8715 | 34.5939 |
| ***CAR*** | 154 | -1.5381 | 6.8061 |
| ***LLPR*** | 154 | -4.63369 | 25.1622 |
| ***NPLR*** | 154 | 5.3585 | 34.9649 |

**Source**: Author's computation (2018)

Table 4.3 shows that normality test was used to determine whether model from the data is normally distributed and to compute how likely it is for a random variable underlying the data set can be normally distributed. Here, the rule of thumb states that if the probability value of the variable of interest is significant at 1% or 5% then the variable is normally distributed otherwise it is not. However, the result of skewness, and kurtosis test for normality shows that all the variables of interest are normally distributed since they all pass at 1% level of significance.

### 4.2.3 Multiple Regression Analysis

The return on asset (ROA) panel OLS regression results examine how the independent variables of capital adequacy ratio, loan loss provision, and non-performing loan, impact on DMBs' ROA. The general hypothesis of this model is that credit risk management is not statistically significant in influencing DMBs' financial profitability in Nigeria. The results obtained are presented in the table below.

**Table 4.4: Panel OLS regression analysis on credit risk and return on asset of quoted DMBs in Nigeria"**

| ***Variable*** | ***ROA (Fixed Effect)*** | ***ROA (Random Effect)*** |
|---|---|---|
| ***CAR*** | .0733403 (0.019)** | .1028447 (0.000)* |
| ***LLPR*** | .2252818 (0.000)* | .2208081 (0.000)* |
| ***NPLR*** | .0113215 (0.149) | .0028753 (0.689) |
| ***F- Statistics*** | 73.72 (0.0000) | 247.97 (0.0000) |
| ***HAUSMAN TEST*** | Prob>chi2 = 0.0128 | |

**Source**: Author's computation (2018)
**Note**: (1) Bracket ( ) are p-values
(2) * Implies statistical significance at 1% and ** Implies significant at 5%respectively.

In testing for the cause-effect relationship between the dependent and independent variables in the Return on Assets Model (ROA), the two widely used panel data regression estimation techniques (fixed effect and random effect) were adopted. The table above presents the two panel data estimation techniques results. The results revealed difference in the magnitude of the coefficients, signs and a number of insignificant variables. The estimation of the fixed effect panel regression was based on the assumption of no correlation between the error term and explanatory variables, while that of the random effect, considers that the error term and explanatory variables are correlated. Hausman test was conducted based on the null hypotheses that the random effect model is preferred to fixed effect model. A look at the p-value of the Hausman test result of 0.013 implies that we should accept the alternative hypothesis and reject the null hypothesis at 5% level of significance. This implies that we should adopt the fixed effect panel regression results in drawing our conclusion and recommendations. This also implies that the fixed effect results tend to be more appealing statistically when compared to the random effect. In testing our hypothesis, we provide the below specific analysis for each of the independent variables using the fixed effect regression.

The fixed panel effect model presented above show that only the variables of capital adequacy ratio (CAR) (coef. 0.073 P >/t/ 0.019) and loan provision loss (LLPR) (coef. 0.22 P >/t/ 0.00), passed the statistical significance test at 5% and 1% respectively.

**Table 4.5: Panel OLS result on credit risk andreturn on equity of quoted DMBs in Nigeria"**

| *Variable* | *ROE* *(Fixed Effect)* | *ROE* *(Random Effect)* |
|---|---|---|
| ***CAR*** | .6821319 (0.294) | .6442507 (0.262) |
| ***LLPR*** | -.7284933 (0.050)** | -.5462225 (0.131) |
| ***NPLR*** | .3012282 (0.067)*** | .0654744 (0.653) |
| ***F- Statistics*** | 2.93 (0.0359) | 3.17 (0.3663) |
| ***HAUSMAN TEST*** | Prob> chi2 = 0.0000 | |

**Source**: Author's computation (2018)
**Note**: (1) Bracket ( ) are p-values
(2) ** Implies statistical significance at 5% and *** Implies significant at 10%respectively.

A careful look at the p-value of the Hausman test result of 0.0000 implies that we should accept the alternative hypothesis connoting an adoption of the fixed effect panel regression results in drawing our conclusion and proffering recommendations. This also implies that the fixed effect results tend to be more appealing statistically when compared to the random effect. Following the above, the discussion of the fixed effect results became imperative.

In testing our hypothesis, we provide the below specific analysis for each of the independent variables using the fixed effect regression.

CAR (fixed effect = 0.68 {0.294}) as an independent variable to return on equity (ROE) appears to have a positive but insignificant influence on the return on equity at 10% level. This means that we should accept hypothesis 3 (Credit risk measured by NPLR,

RLLP and CAR has no statistically significant effect on profitability measured by return on equity of quoted DMBs in Nigeria). The result agrees with prior empirical results which shows that CAR is not a major driver of return on equity. LLPR (fixed effect = -0.72 {0.050}) as an independent variable to return on equity (ROE) appears to have a negative but significant influence on the return on equity at 5% level. This means that we should reject hypothesis 3 (Credit risk measured by NPLR, RLLP and CAR has no statistically significant effect on profitability measured by return on equity of quoted DMBs in Nigeria). This result agrees with prior empirical results which show that LLPR is a negative driver of return on equity.

NPLR (fixed effect = 0.30{0.067}) as an independent variable to return on equity (ROE) appears to have a positive and significant influence on the return on equity at 10% level. This means that we should reject hypothesis 3 (Credit risk measured by NPLR, RLLP and CAR has no statistically significant effect on profitability measured by return on equity of quoted DMBs in Nigeria). This results agrees with prior empirical results which show that NPLR is a major driver of return on equity.

The return on investments (ROI) panel OLS regression results examine how the independent variables of capital adequacy ratio, loan loss provision, and non-performing loan, together with the control variables of inflation growth rate, firm size and total loan impact on companies' ROI.

**Table 4.6: Panel OLS result on credit risk and return on investment of quoted DMBs in Nigeria"**

| *Variable* | *ROI (Fixed Effect)* | *ROI (Random Effect)* |
|---|---|---|
| ***CAR*** | .0729218 (0.020)** | .1025617 (0.000)* |
| ***LLPR*** | .2253402 (0.000)* | .2208179 (0.000)* |
| ***NPLR*** | .0112674 (0.151) | .002833 (0.693) |
| ***F- Statistics*** | 73.72 (0.0000) | 247.88 (0.0000) |
| ***HAUSMAN TEST*** | Prob> chi2 = 0.0126 | |

**Source**: Author's computation (2018)
**Note**: (1) Bracket ( ) are p-values
(2) * Implies statistical significance at 1% and ** Implies significant at 5%respectively.

The F-statistic value of 73.72 (0.0000) and 247.88 (0.0000) for fixed and random effect models respectively shows that both models are valid for drawing inference since they are both statistically significant at 1% respectfully. A careful look at the p-value of the Hausman test result of 0.0126 implies that we should accept the alternative hypothesis connoting an adoption of the fixed effect panel regression results in drawing our conclusion and proffering recommendations. This also implies that the fixed effect results tend to be more appealing statistically when compared to the random effect. Following the above, the discussion of the fixed effect results became imperative. In testing our hypothesis, we provide the below specific analysis for each of the independent variables using the fixed effect regression. The result further show that the variable of capital adequacy (car) with a coefficient of = 0.07 impacts positively on return on investments and proves to be significant at 5% level during the period of study. This result, therefore, suggests that we should reject the null hypothesis which states that capital adequacy does not significantly impact on return on assets. This suggests that the expansion of banks capital base in Nigeria resulted in an upward shift in the variable of

return on investments. However, this improvement is statistically significant at 5% level and supports the empirical findings of Kosmidou, 2008; Pasiouras *et al.,* 2006; Gul*, et al.,* (2011). Surprisingly, a very careful examination of the coefficient estimates in this model reveals that variables of loan loss provision (LLPR) with coefficient estimates of 0.22 strongly resembles the results obtained from the ROA model discussed above. This justifies the high positive correlation coefficient (1.0000) between both dependent variables of ROI and ROA. The aggregate implication of this finding lends credence to the fact that either of the variables of return on assets or return on investment may be employed as a proxy for company performance within the banking subsector in Nigeria.

### 4.2.4 Multicollinearity Test

Multicollinearity test helps to identify the correlation between independent variables and to avoid double effect of independent variables. Multicollinearity makes it difficult to differentiate the individual effects of the explanatory variables hence, the regression estimators may be biased in that they tend to have large variances (Murray, 2006). Furthermore, if there is a perfect linear relationship among the explanatory variables, the estimates for a regression model cannot be uniquely computed. The possible existence of multicollinearity is tested based on the correlation matrix incorporating all the independent variables. Pearson correlation matrices holds that if correlation coefficients are less than 0.8, which is commonly the limit or cut off correlation percentage then multicollinearity is likely to be present Gujarati (2003). These results suggest that there is no multicollinearity of the independent variables to each other. Multicollinearity test is further conducted through computing the variance inflation factor (VIF). According to (Gujarati & Porter, 2009), there is no problem if the mean VIF is less than 10.

**Table 4.7 Multicollinearity Test**

| Variable | VIF | 1/VIF |
|---|---|---|
| CAR | 1.25 | 0.798862 |
| LLP | 1.24 | 0.803901 |
| NPL | 1.21 | 0.828654 |
| Mean VIF | 1.23 | |

**Source**: Author's computation (2018)

The table above presents the mean variance inflation factor (VIF) of the explanatory variables. The table shows that the mean VIF is 1.23. Therefore, the results of VIF, indicate that there is no unacceptable level of multicolinearity among the independent variables of interest. This further confirms that there is no need to be concerned about the correlation between the explanatory variables.

Loan loss provision: The relationship between the variable of loan loss provision ratio and firm profitability is seemingly striking. Findings reveal a significant positive relationship (coeff. 5.26 and P-value 0.00) between the dependent variable of ROA and independent variable of LLPR. This result reveal that higher level of loan loss provision reduces bank profitability. The empirical result lends credence toth e findings of Abreu and Mendes (2000), Samy Bent Naceur (2003). The result implies that as more provision is being made to cushion the effects of loan loss, financial profitability of the banks decreases. This is however consistent with the risk- return trade off suggesting that the lending business in Nigerian banks is a very risky one though banks could still declare high profi after loan loss provision. The alternative explanation may be put forward for the distortion to real reflections of economic events that take place in an organization through the use of managerial judgment. Although taking this context, Nigerian banks may demand a further management intervention to address provisioning. Hence following this result, we carefully accept

the alternative hypothesis of a significant relationship between loan loss provision ratio and return on assets of listed commercial banks in Nigeria.

## 4.3 Discussion of Findings

It is evident from the above results and analyses that, nonperforming loans (NPLR), ratio of loan loss provision (RLLP), and capital adequacy ratio (CAR) have statistical significant impact on DMBs performance represented by return on asset (ROA), return on investment (ROI), and return on equity (ROE). This implies that profitability of quoted DMBs in Nigeria increases as credit risk indicators are properly managed and that there is a statistically significant relationship between profitability indicators and credit risk indicators used in this study.

# CHAPTER FIVE
# SUMMARY, CONCLUSION AND RECOMMENDATIONS

## 5.1 Summary

The study examines the outcomes of Credit Risk Management (CRM) on the Financial Performance of quoted Deposit Money Banks in Nigeria. Three hypotheses were formulated to analyze the relationship between each of the CRM indicators on the three profitability indicators. The three financial performance (profitability) indicators are: return on asset (ROA), return on investment (ROI) and return on equity (ROE). While the three CRM indicators are non performing loans (NPLR), loan loss provision ratio (LLPR) and capital adequacy ratio (CAR) The essence is to determine whether or not the CRM indicators exert significant effect on the financial performance indicators. The study utilizes secondary information from banks' annual financial reports of quoted DMBs in Nigeria.

The results showed that non performing loans and loan loss provision are significant and have negative effect on return on assets and return on investment, but capital adequacy ratio exert positive and weak effects on return on asset and return on investment of quoted DMBs in Nigeria. The study establishes that there is strong correlation between ROA and ROI revealing that increased exposure to non performing loans reduces profitability and threatens existence of ROE.

## 5.2 Conclusion

Credit creation is the prime operation of the banks, but, it exposes the bank to credit risk due to failure of the borrowers to fulfill the promise with the banks. Moreover, banks need to identify and manage the credit risk variables properly because it affects

profitability and may lead a bank failure in the long run. This empirical investigation reveal that capital adequacy have a positive impact on bank financial profitability. While this corresponds with apriori expectations, our finding also agrees with the findings of other authors such as: (Kosmidou, 2008; Demirguc-Kunt and Huizinga, 1999; Ben Naceur, (2003); Kosmidou and Pasiouras, (2005); Valverde and Fernandez, (2007); Brock and Suarez, (2000); Demirguç- Kunt, Laeven and Levine, (2004) and Saunders and Schumacher (2000). Also the result further show that there is a significant relationship between bank financial profitability and capital adequacy which is also in line with empirical findings of (Berger, 1995; Demirguc-Kunt and Huizinga, 1999; Ben Nacuer, 2003; Kosmidou, 2008; Pasiouras et al., 2006; Gul, et al. (2011.This result suggests that a unit increase in capital adequacy ratio will significantly improve bank financial performance during the period under review. The investigation centers on the relationship between DMBs profitability and credit risk management in Nigeria. The findings established a significantly negative/positive relationship between credit risk indicators and DMBs profitability**.**

This implies that bank increased exposure to credit risk reduces profits, however the report shows there is no significant granger causality relationship between the various credit risk indicators and the various measures of commercial bank profitability except for a uni-directional granger causality relationship to all above variables under study which reflects a cause and effect relationship.

The estimated results suggest that the profitability of DMB in Nigeria is influenced by factors related to their management decisions. The type of explanation for the level of profitability would determine possible internal policy implications and oughtto be taken seriously. Since only little empirical work has been undertaken investigating the

behaviors in bankingsector in relation to the profitability and credit risk in Nigeria, an empirical investigation like, the one conducted above may yield insights that could be of interest to academics, bankers, and policy makers.Based on the foregoing, the researcher concludes that there is a significant relationship between various internal bank variables (explanatory variables) employed in this study on the profitability of DMBs in Nigeria.

## 5.3 Recommendations

Based on the findings and conclusions drawn from the study, the following recommendations are made:

The CBN should ensure total compliance with the relevant provisions of the Bank and other Financial Institutions Act (BOFIA) (1991) and the provision of the Basel III Accord of the banking supervisions that provides for more sophisticated and quantitative approach that compels banks to evaluate the riskiness of each customer and consequently use their estimate of the customer default probability to set loan rates and obligations.

The DMBs in Nigeria should establish sound and competent credit risk management units which are run by best practices in risk management such as the institution of a clear loan policy and the adherence to underwriting authority and limits. Staffs of DMBs credit units such as project and advance managers, credit/loan officers and field officers perform a range of functions from project appraisals through credit disbursement, loan monitoring to loans collection. Thus issues pertaining to their selection, training, placement, job evaluation, discipline, and remuneration need to be tackled effectively. When these are done, it will go a long way to reducing the rate of nonperforming loans of quoted DMBs in Nigeria. This will equally improve the asset

quality of the banks.The DMBs should seek to increase banks' profitability (ROA, ROI and ROE) to be able to better advance more loans and absorb credit losses whenever they crop up.

DMBs in Nigeria should pay attention to investment since holding excess cash is resulting to serious liquidity risk problem by way of excess of cash that needed to be invested. When such excess cash are invested in other business opportunities, banks are likely to generate more profits, as well as remain afloat.

DMBs should ensure that management does it primary role of providing loans and advances to the customers especially the real sectors. This is to say that since granting out loans to customers is the core revenue generating activity for most banks, disbursing loans to customers will go a long way to improving the financial performance of banks.

## 5.4 Suggestions for Further Study

Although, there are a number of studies conducted at a global level to examine the relationship between credit risk management and deposit money bank profitability, most of the studies were made with reference to developed countries especially in, USA and Europe. This means, they do not explain the issues for emerging market particularly the surge and increasing trends of loan loss provisioning in Nigeria. Researchers who wish to dig into further study in this area, from a practical perspective are encouraged to do so as to fill this gap and add to the foundation for other researchers.

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# Appendix 1

| Fiscal year | Bank | Return on asset | Return on Equity | Return on Investment | Equity to Asset | Loan Loss Provision | Non-Performing Loans |
|---|---|---|---|---|---|---|---|
| 2006 | Access Bank | 0.42 | 2.55 | 0.42 | 16.55 | -9.01 | 4.08 |
| 2007 | Access Bank | 1.85 | 21.43 | 1.85 | 8.64 | -9.44 | 0.71 |
| 2008 | Access Bank | 1.52 | 9.22 | 1.52 | 16.44 | -0.59 | 0.21 |
| 2009 | Access Bank | 0.63 | 2.61 | 0.63 | 24.26 | -4.01 | 3.89 |
| 2010 | Access Bank | 1.38 | 6.31 | 1.38 | 21.79 | -1.05 | 1.65 |
| 2011 | Access Bank | 0.94 | 7.80 | 0.94 | 12.10 | -1.57 | 1.80 |
| 2012 | Access Bank | 2.57 | 18.61 | 2.57 | 13.82 | -1.79 | 2.17 |
| 2013 | Access Bank | 2.04 | 15.34 | 2.04 | 13.32 | -0.78 | 2.87 |
| 2014 | Access Bank | 2.05 | 15.52 | 2.05 | 13.18 | -1.05 | 2.27 |
| 2015 | Access Bank | 2.54 | 17.91 | 2.54 | 14.19 | -1.04 | 1.79 |
| 2016 | Access Bank | 2.05 | 15.72 | 2.05 | 13.05 | -1.21 | 2.18 |
| 2007 | Diamond Bank | 2.21 | 13.10 | 2.21 | 16.88 | -2.22 | 7.91 |
| 2008 | Diamond Bank | 2.05 | 10.98 | 2.05 | 18.66 | -2.00 | 4.63 |
| 2009 | Diamond Bank | -1.26 | -7.70 | -1.26 | 16.31 | -8.67 | 23.88 |
| 2010 | Diamond Bank | 0.22 | 1.25 | 0.22 | 17.93 | -7.77 | 17.37 |
| 2011 | Diamond Bank | -1.95 | -14.97 | -1.93 | 13.05 | -14.28 | 10.15 |
| 2012 | Diamond Bank | 1.88 | 20.36 | 1.88 | 9.22 | -2.91 | 4.90 |
| 2013 | Diamond Bank | 1.88 | 20.58 | 1.88 | 9.13 | -3.38 | 3.69 |
| 2014 | Diamond Bank | 1.32 | 12.19 | 1.32 | 10.81 | -3.33 | 5.37 |
| 2015 | Diamond Bank | 0.32 | 2.64 | 0.32 | 12.24 | -7.22 | 7.42 |
| 2016 | Diamond Bank | 0.17 | 1.54 | 0.17 | 11.06 | -5.93 | 10.09 |
| 2006 | Fidelity Bank | 2.66 | 12.54 | 2.66 | 21.19 | -0.78 | 20.50 |
| 2007 | Fidelity Bank | 2.16 | 15.66 | 2.16 | 13.79 | -4.18 | 9.03 |
| 2008 | Fidelity Bank | 2.49 | 9.73 | 2.49 | 25.62 | -0.77 | 12.01 |
| 2009 | Fidelity Bank | 0.28 | 1.11 | 0.28 | 25.56 | -1.80 | 22.37 |
| 2010 | Fidelity Bank | 1.27 | 4.49 | 1.27 | 28.28 | -2.24 | 43.53 |
| 2011 | Fidelity Bank | 0.35 | 1.88 | 0.35 | 18.62 | -1.60 | 8.16 |
| 2012 | Fidelity Bank | 1.99 | 11.27 | 1.99 | 17.66 | -1.33 | 3.29 |
| 2013 | Fidelity Bank | 0.71 | 4.72 | 0.71 | 15.12 | -1.91 | 3.24 |
| 2014 | Fidelity Bank | 1.16 | 7.97 | 1.16 | 14.58 | -0.79 | 3.29 |
| 2015 | Fidelity Bank | 1.13 | 7.58 | 1.13 | 14.90 | -1.00 | 3.53 |
| 2016 | Fidelity Bank | 0.75 | 5.25 | 0.75 | 14.28 | -1.21 | 4.63 |
| 2006 | First Bank Holding | 2.82 | 27.04 | 2.55 | 10.42 | -2.25 | 2.76 |
| 2007 | First Bank Holding | 2.26 | 24.68 | 2.26 | 9.18 | -0.92 | 3.08 |
| 2008 | First Bank Holding | 2.39 | 10.27 | 2.39 | 23.28 | -1.31 | 1.59 |
| 2009 | First Bank Holding | 0.23 | 1.57 | 0.23 | 14.32 | -1.80 | 8.72 |
| 2010 | First Bank Holding | 1.45 | 9.81 | 1.45 | 14.78 | -1.89 | 8.10 |
| 2011 | First Bank Holding | 0.65 | 5.06 | 0.65 | 12.89 | -3.03 | 2.69 |
| 2012 | First Bank Holding | 2.37 | 17.24 | 2.37 | 13.77 | -0.81 | 1.41 |
| 2013 | First Bank Holding | 1.82 | 14.97 | 1.82 | 12.19 | -1.15 | 1.83 |
| 2014 | First Bank Holding | 1.91 | 15.84 | 1.91 | 12.04 | -1.19 | 2.41 |
| 2015 | First Bank Holding | 0.36 | 2.62 | 0.36 | 13.89 | -6.57 | 18.61 |
| 2016 | First Bank Holding | 0.36 | 2.94 | 0.36 | 12.30 | -10.85 | 27.39 |
| 2006 | First City Monumental Bank | 2.66 | 10.74 | 2.66 | 24.74 | -0.12 | 43.28 |
| 2007 | First City Monumental Bank | 2.26 | 19.13 | 2.26 | 11.83 | -1.81 | 3.28 |
| 2008 | First City Monumental Bank | 3.23 | 11.31 | 3.23 | 28.59 | -1.69 | 2.83 |
| 2009 | First City Monumental Bank | 0.12 | 0.44 | 0.12 | 27.95 | -8.54 | 12.51 |
| 2010 | First City Monumental Bank | 1.47 | 5.89 | 1.47 | 25.02 | -9.63 | 4.43 |
| 2011 | First City Monumental Bank | -1.54 | -7.87 | -1.54 | 19.51 | -8.56 | 4.47 |
| 2012 | First City Monumental Bank | 1.66 | 11.45 | 1.66 | 14.53 | -3.55 | 1.43 |
| 2013 | First City Monumental Bank | 1.59 | 11.13 | 1.59 | 14.25 | -1.77 | 1.21 |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 2014 | First City Monumental Bank | 1.89 | 13.80 | 1.89 | 13.71 | -1.72 | 1.32 |
| 2015 | First City Monumental Bank | 0.41 | 2.93 | 0.41 | 14.00 | -2.54 | 2.53 |
| 2016 | First City Monumental Bank | 1.22 | 8.02 | 1.22 | 15.25 | -5.38 | 1.89 |
| 2006 | Guaranty Trust Bank | 2.69 | 20.38 | 2.69 | 13.22 | -2.12 | 3.52 |
| 2007 | Guaranty Trust Bank | 2.71 | 26.40 | 2.71 | 10.27 | -0.64 | 2.08 |
| 2008 | Guaranty Trust Bank | 3.11 | 16.43 | 3.11 | 18.91 | -1.14 | 1.87 |
| 2009 | Guaranty Trust Bank | 2.68 | 14.88 | 2.68 | 18.03 | -5.91 | 12.57 |
| 2010 | Guaranty Trust Bank | 3.33 | 18.19 | 3.33 | 18.30 | -1.75 | 7.24 |
| 2011 | Guaranty Trust Bank | 3.09 | 20.89 | 3.09 | 14.81 | -2.76 | 3.25 |
| 2012 | Guaranty Trust Bank | 5.00 | 30.90 | 5.00 | 16.17 | -0.09 | 3.44 |
| 2013 | Guaranty Trust Bank | 4.28 | 27.51 | 4.28 | 15.56 | -0.29 | 3.37 |
| 2014 | Guaranty Trust Bank | 4.63 | 26.37 | 4.63 | 17.54 | -0.56 | 3.06 |
| 2015 | Guaranty Trust Bank | 3.94 | 24.04 | 3.94 | 16.38 | -0.90 | 3.04 |
| 2016 | Guaranty Trust Bank | 4.24 | 26.20 | 4.24 | 16.20 | -4.11 | 3.80 |
| 2006 | Skye Bank | 1.13 | 7.67 | 1.13 | 14.73 | -0.20 | 27.53 |
| 2007 | Skye Bank | 1.28 | 19.51 | 1.28 | 6.56 | -2.39 | 5.67 |
| 2008 | Skye Bank | 2.00 | 16.70 | 2.00 | 11.98 | -1.68 | 3.87 |
| 2009 | Skye Bank | -0.02 | -0.14 | -0.02 | 14.30 | -11.00 | 21.90 |
| 2010 | Skye Bank | 1.48 | 9.37 | 1.48 | 15.76 | -2.05 | 12.90 |
| 2011 | Skye Bank | 0.29 | 2.64 | 0.29 | 10.95 | -5.46 | 2.63 |
| 2012 | Skye Bank | 1.18 | 11.83 | 1.18 | 9.95 | -2.43 | 4.54 |
| 2013 | Skye Bank | 1.43 | 13.31 | 1.43 | 10.78 | -2.18 | 3.27 |
| 2014 | Skye Bank | 0.69 | 7.37 | 0.69 | 9.31 | -2.92 | 5.13 |
| 2015 | Skye Bank | -3.40 | -39.17 | -3.40 | 8.69 | -3.91 | 14.87 |
| 2016 | Skye Bank | | | | | | |
| 2006 | StanbicIbtc Holding | 3.52 | 12.19 | 3.53 | 28.89 | -0.41 | 25.20 |
| 2007 | StanbicIbtc Holding | 3.63 | 13.99 | 3.82 | 25.93 | -2.03 | 23.14 |
| 2008 | StanbicIbtc Holding | 4.44 | 14.87 | 4.44 | 29.89 | -5.10 | 15.79 |
| 2009 | StanbicIbtc Holding | 3.13 | 10.11 | 3.13 | 30.98 | -4.40 | 16.02 |
| 2010 | StanbicIbtc Holding | 2.46 | 11.29 | 2.47 | 21.78 | -0.38 | 7.26 |
| 2011 | StanbicIbtc Holding | 1.20 | 8.32 | 1.21 | 14.41 | -1.11 | 5.47 |
| 2012 | StanbicIbtc Holding | 1.50 | 12.19 | 1.51 | 12.31 | -2.15 | 4.47 |
| 2013 | StanbicIbtc Holding | 3.12 | 22.03 | 3.14 | 14.17 | -0.63 | 3.18 |
| 2014 | StanbicIbtc Holding | 3.39 | 26.67 | 3.37 | 12.73 | -0.74 | 8.15 |
| 2015 | StanbicIbtc Holding | 2.01 | 14.65 | 2.01 | 13.76 | -17.56 | 7.65 |
| 2016 | StanbicIbtc Holding | 2.71 | 20.26 | 2.71 | 13.36 | -5.61 | 5.29 |
| 2006 | Sterling Bank | 0.96 | 4.12 | 0.96 | 23.31 | -0.25 | 30.72 |
| 2007 | Sterling Bank | 1.51 | 6.94 | 1.24 | 21.74 | -7.71 | 30.57 |
| 2008 | Sterling Bank | 3.01 | 20.94 | 3.01 | 14.40 | -4.68 | 9.77 |
| 2009 | Sterling Bank | -4.92 | -40.74 | -4.92 | 12.07 | -16.08 | 23.61 |
| 2010 | Sterling Bank | 2.16 | 19.17 | 2.16 | 11.28 | -1.58 | 11.54 |
| 2011 | Sterling Bank | 1.49 | 16.87 | 1.49 | 8.85 | -3.51 | 5.08 |
| 2012 | Sterling Bank | 1.30 | 14.91 | 1.30 | 8.74 | 0.13 | 3.06 |
| 2013 | Sterling Bank | 1.28 | 13.04 | 1.28 | 9.85 | -2.00 | 1.32 |
| 2014 | Sterling Bank | 1.09 | 10.63 | 1.09 | 10.27 | -1.57 | 2.10 |
| 2015 | Sterling Bank | 1.29 | 10.77 | 1.29 | 11.95 | -2.41 | 4.51 |
| 2016 | Sterling Bank | 0.62 | 6.03 | 0.62 | 10.27 | -2.50 | 1.73 |
| 2006 | Union Bank Of Nig | . | | | | | |
| 2007 | Union Bank Of Nig | 2.32 | 12.83 | 2.32 | 18.11 | -30.59 | 169.17 |
| 2008 | Union Bank Of Nig | 2.68 | 21.44 | 2.68 | 12.48 | -2.24 | 67.08 |
| 2009 | Union Bank Of Nig | -20.23 | 122.80 | -20.23 | -16.48 | -42.22 | 75.64 |
| 2010 | Union Bank Of Nig | 9.54 | -91.95 | 9.54 | -10.37 | -18.36 | 58.38 |
| 2011 | Union Bank Of Nig | -7.83 | -42.00 | -7.85 | 18.64 | -8.08 | 10.66 |
| 2012 | Union Bank Of Nig | 0.71 | 3.79 | 0.71 | 18.82 | -0.94 | 11.19 |
| 2013 | Union Bank Of Nig | 0.61 | 3.05 | 0.61 | 19.88 | -5.26 | 6.36 |
| 2014 | Union Bank Of Nig | 2.63 | 11.95 | 2.63 | 22.02 | -1.54 | 5.41 |

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|---|---|---|---|---|---|---|---|
| 2015 | Union Bank Of Nig | 1.33 | 5.69 | 1.33 | 23.30 | -2.71 | 7.07 |
| 2016 | Union Bank Of Nig | 1.23 | 5.67 | 1.23 | 21.69 | -3.27 | 7.30 |
| 2006 | United Bank For Africa | 1.31 | 23.80 | 1.31 | 5.49 | -5.07 | 13.74 |
| 2007 | United Bank For Africa | 2.10 | 12.78 | 1.80 | 16.40 | -1.16 | 4.58 |
| 2008 | United Bank For Africa | 2.76 | 21.10 | 2.76 | 13.09 | -0.61 | 3.75 |
| 2009 | United Bank For Africa | 0.17 | 1.27 | 0.17 | 13.72 | -6.26 | 8.43 |
| 2010 | United Bank For Africa | 0.04 | 0.33 | 0.04 | 12.48 | -2.90 | 4.21 |
| 2011 | United Bank For Africa | -0.49 | -5.74 | -0.49 | 8.53 | -2.93 | 2.80 |
| 2012 | United Bank For Africa | 2.47 | 26.75 | 2.47 | 9.25 | -0.69 | 2.04 |
| 2013 | United Bank For Africa | 1.76 | 19.83 | 1.76 | 8.90 | -1.39 | 1.25 |
| 2014 | United Bank For Africa | 1.73 | 18.05 | 1.73 | 9.61 | -0.30 | 1.65 |
| 2015 | United Bank For Africa | 2.17 | 17.93 | 2.17 | 12.08 | -0.49 | 0.65 |
| 2016 | United Bank For Africa | 2.06 | 16.13 | 2.06 | 12.79 | -1.84 | 1.45 |
| 2006 | Unity Bank | 1.05 | 4.45 | 1.05 | 23.48 | 4.21 | 73.90 |
| 2007 | Unity Bank | 0.35 | 2.25 | 0.35 | 15.76 | -12.81 | 104.74 |
| 2008 | Unity Bank | -3.72 | -66.88 | -3.72 | 5.57 | -56.90 | 59.49 |
| 2009 | Unity Bank | -6.43 | -233.11 | -6.43 | 2.76 | -16.21 | 27.25 |
| 2010 | Unity Bank | 4.78 | 28.44 | 4.78 | 16.81 | -5.96 | 17.22 |
| 2011 | Unity Bank | 1.03 | 6.15 | 1.03 | 16.80 | -2.36 | 4.04 |
| 2012 | Unity Bank | 1.80 | 12.01 | 1.80 | 14.95 | -0.72 | 3.04 |
| 2013 | Unity Bank | -5.59 | -80.04 | -5.59 | 6.99 | -11.06 | 29.49 |
| 2014 | Unity Bank | 2.59 | 14.02 | 2.59 | 18.45 | -7.92 | 21.33 |
| 2015 | Unity Bank | 1.06 | 5.68 | 1.06 | 18.63 | -11.02 | 24.33 |
| 2016 | Unity Bank | 0.44 | 2.63 | 0.44 | 16.87 | -12.97 | 33.58 |
| 2006 | Wema Bank | -5.50 | -32.14 | -5.50 | 17.10 | -12.10 | 78.74 |
| 2007 | Wema Bank | 1.83 | 10.14 | 1.83 | 18.00 | -11.77 | 30.76 |
| 2008 | Wema Bank | -29.64 | 230.23 | -29.64 | -12.88 | -108.45 | 78.81 |
| 2009 | Wema Bank | -3.83 | 16.43 | -3.83 | -23.29 | -14.31 | 235.36 |
| 2010 | Wema Bank | 8.68 | 110.69 | 8.68 | 7.84 | 50.28 | 86.85 |
| 2011 | Wema Bank | -1.97 | -67.47 | -1.97 | 2.92 | -3.41 | 15.93 |
| 2012 | Wema Bank | -2.06 | -394.32 | -2.06 | 0.52 | -6.72 | 13.56 |
| 2013 | Wema Bank | 0.55 | 3.86 | 0.55 | 14.30 | 1.35 | 4.13 |
| 2014 | Wema Bank | 0.62 | 5.42 | 0.62 | 11.44 | -0.06 | 1.03 |
| 2015 | Wema Bank | 0.59 | 5.05 | 0.59 | 11.61 | 0.04 | 1.41 |
| 2016 | Wema Bank | 0.60 | 5.28 | 0.60 | 11.43 | -0.18 | 2.33 |
| 2006 | Zenith Bank | 1.88 | 11.55 | 1.88 | 16.25 | -0.65 | 1.15 |
| 2007 | Zenith Bank | 1.93 | 16.13 | 1.93 | 11.97 | -0.64 | 1.40 |
| 2008 | Zenith Bank | 2.91 | 15.00 | 2.91 | 19.40 | -1.41 | 2.13 |
| 2009 | Zenith Bank | 1.24 | 6.10 | 1.24 | 20.35 | -5.71 | 6.93 |
| 2010 | Zenith Bank | 2.44 | 10.36 | 2.44 | 23.59 | -0.61 | 6.21 |
| 2011 | Zenith Bank | 2.52 | 12.44 | 2.52 | 20.26 | -1.85 | 2.47 |
| 2012 | Zenith Bank | 4.70 | 21.90 | 4.70 | 21.47 | -0.92 | 1.46 |
| 2013 | Zenith Bank | 3.62 | 18.87 | 3.62 | 19.18 | -0.88 | 1.11 |
| 2014 | Zenith Bank | 2.65 | 18.00 | 2.65 | 14.72 | -11.18 | 0.58 |
| 2015 | Zenith Bank | 2.64 | 17.78 | 2.64 | 14.83 | -0.79 | 2.26 |
| 2016 | Zenith Bank | 2.74 | 18.40 | 2.74 | 14.86 | -1.41 | 3.12 |

**Source: Machameratio Peer Analysis**