

MODERATING ROLE OF LOAN LOSS PROVISION ON THE RELATIONSHIP
BETWEEN RISK FACTORS AND THE FINANCIAL PERFORMANCE OF
COMMERCIAL BANKS IN NIGERIA

BY

Muhammad Kabir LAWAL

DEPARTMENT OF BUSINESS ADMINISTRATION ABU BUSINESS SCHOOL,
AHMADU BELLO UNIVERSITY,ZARIA.

NOVEMBER, 2021

MODERATING ROLE OF LOAN LOSS PROVISION ON THE RELATIONSHIP
BETWEEN RISK FACTORS AND THE FINANCIAL PERFORMANCE OF
COMMERCIAL BANKS IN NIGERIA

BY

Muhammad Kabir LAWAL
(P18BSBA9101)

A Ph.D. THESIS SUBMITTED TO THE SCHOOL OF POSTGRADUATE
STUDIES, AHMADU BELLO UNIVERSITY, ZARIA, IN PARTIAL FULFILLMENT
OF THE REQUIREMENTS FOR THE AWARD OF DOCTORATE DEGREE IN
BUSINESS ADMINISTRATION

DEPARTMENT OF BUSINESS ADMINISTRATION
ABU BUSINESS SCHOOL,
AHMADU BELLO UNIVERSITY,
ZARIA.

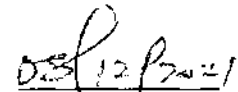
NOVEMBER, 2021

DECLARATION

I declare that this thesis entitled “Moderating Role of Loan Loss Provision on the Relationship between Risk Factors and the Financial Performance of Commercial Banks in Nigeria” has been performed by me in the Department of Business Administration, Ahmadu Bello University, Zaria. The information derived from the literature has been duly acknowledged in the text and a list of references provided. No part of this thesis was previously presented for another degree or diploma at this or any other Institution.

Muhammad Kabir LAWAL
Name of Student

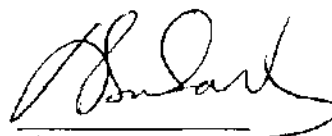

Signature


Date

CERTIFICATION

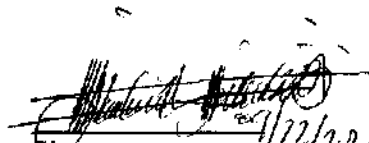
This thesis entitled "Moderating Role of Loan Loss Provision on the Relationship between Risk Factors and the Financial Performance of Commercial Banks in Nigeria" by Muhammad Kabir LAWAL meets the regulations governing the award of the Degree of Doctor of Philosophy (Ph.D) in Business Administration of the Ahmadu Bello University, Zaria and is approved for its contribution to knowledge and literary presentation.

Dr. Muktar Yusuf Abubakar
Chairman, Supervisory Committee


Signature

9/12/21
Date

Dr. Isma'il Tijjani Idris
Member, Supervisory Committee


Signature

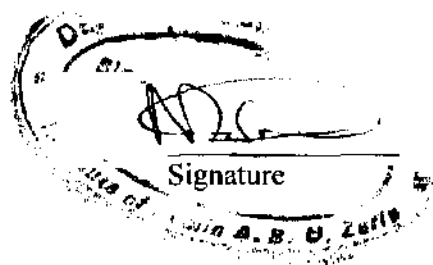
09/12/2021
Date

Prof. Mohammed Habibu Sabari
Member, Supervisory Committee


Signature

9/12/2021
Date

Dr. Nasiru Abdullahi
Head of Department


Signature

14-12-21
Date

Prof. Sani Alhaji Abdullahi
Dean, School of Postgraduate Studies


Signature

25 NOV 2021
Date

DEDICATION

This thesis is dedicated to my late father, Alhaji Mamman Otinau Beina Lawal, who had encouraged and stood by me during the course of this work before his death. May his soul continue to rest in Al- Jannah Firdaus (Amin).

ACKNOWLEDGEMENT

I am profoundly grateful to the Almighty Allah, the most gracious, and merciful for giving me strength and good health to complete my course work and this Ph.D thesis in Business Administration. May His peace and blessings be upon His Messenger Prophet Muhammad (S.A.W).

I would like to appreciate my Supervisory team; Dr. Muktar Yusuf Abubakar, Dr. Isma'il Tijjani Idris, and Prof. Mohammed Habibu Sabari, who have been part of the team right from the onset. I wish to express my profound gratitude to all of them for their untiring attention and guidance throughout the period of this work. May Allah reward them abundantly and continue to guide and protect them in all ramifications. I am indeed grateful to all the Ph.D Coordinators that I passed through in the course of this work: Dr. Jinjiri Kabiru Ringim, Dr. Saidu Badara Muazu and the current one, Dr. Salisu Umar for their hard work and thoroughness in the processes of all presentations at various stages of defense. May Allah continue to guide and protect them. I wish to use this opportunity to acknowledge all those who assisted me to achieve this success. Apart from my supervisor, I recognize all the lecturers within and outside the Department of Business Administration for the knowledge impacted on me during my course work. These include the knowledge acquired from their wealth of experiences during the Departmental Seminars and Pre-data defenses. They are Prof. Sheikh Ahmad Abdullah my lecturer right from undergraduate days to this level, Prof. Sani Alhaji Abdullahi, Dr. Muktar Yusuf Abubakar, Dr. A.M. Abu-Abu-Abissamad, Dr. Suleiman Muhammad Husaini, Dr. Kabiru Jinjiri Ringim.

My classmates at M.Sc and Ph.D levels, Dr. Sayedi Ndagi Shuaibu who contributed immensely towards making this research work a success. Dr. Kabiru Umar cannot be left out who is duly acknowledged for his persistent encouragement and assistance in data extraction, Dr. Kabir Abdu Ibrahim as a member of the class of four (4) Ph.D students (2013/2014 session).

I honestly wish to acknowledge the immense contribution and motivation I received from Prof. Bello Sabo as the then Head of Department for his continuous encouragement and assistance towards the completion of the programme. To Prof. O.D.Y. Malachy who has been very helpful and supportive in the course of this work. May Allah reward them abundantly.

I also acknowledge Dr. Idris Ahmad Aliyu, Dr. Nasiru Abdullahi, and Dr. Nuraddeen S. Aliyu all from Ahmadu Bello University, Zaria, who had at various stages looked at the work. I remain grateful.

I also acknowledge Dr. Nasiru Yunusa of the Department of Accounting, Ahmadu Bello University, Zaria for assisting me with data analysis using STATA a software package despite his tight schedules. Also, Prof. A.J.C. Onu and Dr. Luka Mailafia who have contributed in making the work a reality.

This acknowledgement will not be complete without thanking Prof. and Mrs. K.A Bello of the Department of Polymer and Textile Engineering, Ahmadu Bello University, Zaria for being supportive. In addition, I recognize Dr. Ibrahim Mohammed, Dr. Muhammad Ahmad Yabagi, Kabiru Adedeji Ibrahim my office mate, M.J.S. Umechivi my friend, Abdulkarim Abubakar of the Department of Mathematics, Ahmadu Bello University, Zaria and others too numerous to mention who provided me with academic journals for this study. Other scholars who uploaded their research works into web sites and allowed me to access them are equally acknowledged.

I also want to extend my sincere gratitude to my wonderful parents, late Alhaji M.O. Lawal of blessed memory, who would have loved to see me finish this Ph.D work before his demise. May Allah grant him Al -Jannah Firdaus (Amin) and Hajiya Sa'adetu Lawal, who nurtured me and showed me that learning can empower a person. To my brothers: Engr. Iliyasu, Engr. Abdulmumini, Justice Nasiru, Dr. Suleiman, officer Mu'azu and my sisters, Bar. Zainab, Hajiya Asama'u and Pharm. Maimuna. I owe my deepest gratitude and profound appreciations to my lovely and caring wife Jamila and children for their constant prayers, support and understanding during the course of this tedious academic exercise. May Allah reward each and every one of them.

TABLE OF CONTENTS

Title Page.....	i
Declaration	iv
Certification	v
Dedication	vi
Acknowledgement	vii
Table of Contents.....	x
List of Tables	xiv
List of Figures	xv
List of Appendices	xvi
Abbreviations	xvii
Abstract	xix
INTRODUCTION.....	1
1.1 Background of the Study	1
1.2 Statement of the Problem	8
1.3 Research Questions	16
1.4 Research Objectives	17
1.5 Research Hypotheses.....	18
1.6 Significance of the Study.....	19
1.7 Scope of the Study.....	20
LITERATURE REVIEW AND THEORETICAL FRAMEWORK	22
2.1 Introduction	22
2.2 An Overview of Banking System in Nigeria	22
2.3 Banking Sector Reforms in Nigeria.....	25
2.4 Drawbacks of Banking Sector Reforms in Nigeria	30
2.5 Review and Conceptualization of Study Variables	31

2.5.1	Financial Performance.....	31
2.5.2	Capital Adequacy Risk.....	32
2.5.3	Liquidity Risk.....	33
2.5.4	Solvency Risk.....	34
2.5.5	Market Risk.....	35
2.5.6	Operational Risk.....	36
2.5.7	Loan Loss Provision.....	39
2.6	Research Framework of the Study	40
2.7	Review of Empirical Literature	41
2.7.1	Capital Adequacy Risk and Financial Performance of Banks	41
2.7.2	Liquidity Risk and Financial Performance.....	45
2.7.3	Solvency Risk and Financial Performance.....	47
2.7.4	Market Risk and Financial Performance	50
2.7.5	Operational Risk and Financial Performance.....	52
2.7.6	Loan Loss Provision and Financial Performance.....	53
2.7.7	Moderating Role of Loan Loss Provision and Financial Performance	54
2.8	Theoretical Framework	55
	RESEARCH METHODOLOGY	59
3.1	Introduction	59
3.2	Research Design.....	59
3.3	Population, Sample Size and Sampling Technique	59
3.4	Sources and Methods of Data Collection	60
3.5	Technique for Data Analysis	61
3.6	Justification of the Technique for Data Analysis	61
3.7	Model Specification and Measurements of the Study Variables	62
3.8	Summary	66

DATA PRESENTATION AND ANALYSIS.....	69
4.1 Introduction	69
4.2 Descriptive Statistics	69
4.3 Correlation Matrix	72
4.4 Multicollinearity Test Using Variance Inflation Factor (VIF).....	75
4.5 Heteroscedasticity Test	77
4.6 Fixed Effect and Random Effect Regression Model Using Hausman Test.....	79
4.7 Presentation, Analysis and Discussion of Regression Results.....	81
4.8 Selection between ROA and ROE Model Using AIC and BIC Criteria	82
4.8.1 Capital Adequacy Risk and Banks' Performance	84
4.8.2 Liquidity Risk and Bank's Performance	86
4.8.3 Solvency Risk and Banks' Performance	87
4.8.4 Operational Risk and Banks' Performance	89
4.8.5 Market Risk and Banks' Performance	90
4.8.6 Capital Adequacy Risk and Loan Loss Provision on Banks' Performance	91
4.8.7 Liquidity Risk and Loan Loss Provision on Banks' Performance	93
4.8.8 Solvency Risk and Banks' Performance on Banks' Performance	94
4.8.9 Operational Risk and Loan Loss Provision on Banks' Performance	95
4.8.10 Market Risk and Loan Loss Provision on Banks' Performance	96
4.9 Summary	97
SUMMARY, CONCLUSION AND RECOMMENDATIONS	98
5.1 Introduction	98
5.2 Summary	98
5.3 Conclusion.....	99
5.4 Recommendations	99
5.5 Contributions of the Study.....	101

5.6	Limitations of the Study.....	102
5.7	Further Areas of Research	103
	References	104
	Appendices.....	119

LIST OF TABLES

Table 3.1:	Definitions and Measurements of the Study Variables.....	64
Table 4.1:	Descriptive Statistics.....	69
Table 4.2:	Correlation Matrix.....	76
Table 4.3:	Multi-collinearity Test Results.....	76
Table 4.4:	Heteroskedasticity on ROA Model.....	77
Table 4.5:	Heteroskedasticity on ROE Model.....	78
Table 4.6:	Hausman's Test on ROA Model.....	79
Table 4.7:	Hausman's Test on ROE Model.....	80
Table 4.8:	Panel Corrected Standard Error Model Regression Result for ROA and ROE.....	81
Table 4.9:	Akaike's Information Criterion and Bayesian Information Criterion for ROA Model.....	83
Table 4.10:	Akaike's Information Criterion and Bayesian Information Criterion for ROE Model.....	84

LIST OF FIGURES

Figure 1.1: Graph of Return on Asset (ROA) and Return on Equity (ROE)	2
Figure 2.1: Research Framework	40

LIST OF APPENDICES

Appendix I: Research Output.....	119
Appendix II: Population of the Study	134
Appendix III: Data.....	135

ABBREVIATIONS

AIC	-	Akaike's Information Criterion
BBWA	-	British Bank of West Africa
BCBS	-	Basel Committee on Banking Supervision
BFI	-	Bank Financial Institutions
BIC	-	Bayesian Information Criterion
BOA	-	Bank of Agriculture
BOFID	-	Banks and other Financial Institutions Decree
CBN	-	Central Bank of Nigeria
CBs	-	Commercial Banks
CAR	-	Capital Adequacy Risk
DMBs	-	Deposit Money Banks
EFCC	-	Economic and Financial Crime Commission
EPS	-	Earnings Per Share
EU	-	European Union
FIU	-	Financial Intelligent Unit
LLP	-	Loan Loss Provision
LR	-	Liquidity Risk
MFBs	-	Micro Finance Banks
MPR	-	Mandatory Policy Rate
MR	-	Market Risk
NBFIs	-	Non Bank Financial Institutions
NDIC	-	Nigerian Deposit Insurance Corporation
NIM	-	Net Interest Margin
NPLs	-	Non-Performing Loans
OR	-	Operational Risk

PMBs	-	Primary Mortgage Banks
ROA	-	Return on Asset
ROE	-	Return on Equity
SAP	-	Structural Adjustment Programme
SR	-	Solvency Risk
WACB	-	West African Currency Board

ABSTRACT

Risks irrespective of its kind pose a serious threat to the banking business. The problem is more pronounced among commercial banks because it encompasses deposits and asset linked products as well as other financial services offered to numerous personal banking customers and small business men. Inconsistent findings of risk factors linking financial performance of commercial banks prompted the introduction of loan loss provision as a moderator variable. The basic objective of this study is to examine the moderating role of loan loss provision on the relationship between risk factors and financial performance of commercial banks (CBs) in Nigeria for a period ranging from 2007 - 2018. The population of the study is fifteen (15) listed commercial banks in the Nigeria Stock Exchange as at 31st December 2018. The study used a sample of twelve (12) listed commercial banks in the Nigerian Stock Exchange. The independent variables are risk factors such as Capital Adequacy Risk, Liquidity Risk, Solvency Risk, Market Risk, and Operational Risk which is moderated by Loan Loss Provision (LLP). The dependent variable is financial performance as a measure of profitability using accounting ratio of ROE. In achieving this objective, the study used Panel Corrected Standard Errors (PCSE) model, this is used due to the presence of heteroscedasticity in the model where fixed effect is chosen using Hausman test based on the multiple regression technique where test of hypothesis is conducted and the study draw conclusions based on the findings of the study. The results of regression output shows that capital adequacy risk, solvency risk and operational risk have significant effect on ROE. While liquidity risk and market risk have insignificant effect on ROE. From the result loan loss provision has moderating role on the relationship between capital adequacy risk, solvency risk, operational risk and ROE. The study concludes that loan loss provision has no moderating role on the relationship between liquidity risk and market risk and financial performance of commercial banks in Nigeria. The study recommends that CBs should evolve policy measures aimed at optimizing their funding requirements under various financial stress conditions. These policy measures can be employed as road map for banks to meet their funding requirement in long term and short term.

CHAPTER ONE

INTRODUCTION

1.1 Background of the Study

The financial performance of banks is a function on varying factors at firm, industry, macro and international levels, which is could be influenced by variations in risk and uncertainty in their operating environment. The complexity of banks operation has exposed their financial performance to risk stemming from varying factors in their operating environments. Bank performance is gauged by both financial and non-financial performance, where financial performance is bank profitability measured by Net Interest Margin (NIM), Return on Assets (ROA), Profit after Taxes (PAT), Return on Equity (ROE), Total Asset Value (TAV), Return on Capital Employed (ROCE) and Earning per Share (EPS) (Le & Phan, 2017; Nguyen & Nguyen, 2020; Dinh & Pham, 2020; Al-Homaidi, Tabash & Ahmad, 2020a.; Ullah, Pinglu, Ullah, Zaman & Hashmi, 2020; Senan, Anagreh, Al-Dalaïen, Almugari, Khaled, & Al-Homaidi, 2021a). However, non-financial performance on the other hand, is seen in terms of number of branch networks, number of employees, number of Automated Teller Machine (ATM) installation in service centres and others. Financial performance that represents study response variable is represented by commercial banks profitability, which may be influenced by different forms of risks like capital adequacy, liquidity, solvency, market, operational and credit risks (Horobet, Radulescu, Belascu, & Dita, 2021). Among the risk factors mentioned, loan loss provision is used as moderating variable between the varying risk factors and commercial banks financial performance in Nigeria.

In the process of selecting the measurement for performance therefore, ROA and ROE were identified as the key aspects of performance in commercial banks sector. In addition, the measures depict some consistencies and inconsistencies over time as in the case of ROA and ROE respectively which attract the attention of this study, hence, ROA and ROE were

considered as the measurements of performance due to their behaviours as shown in figure 1.1 below.

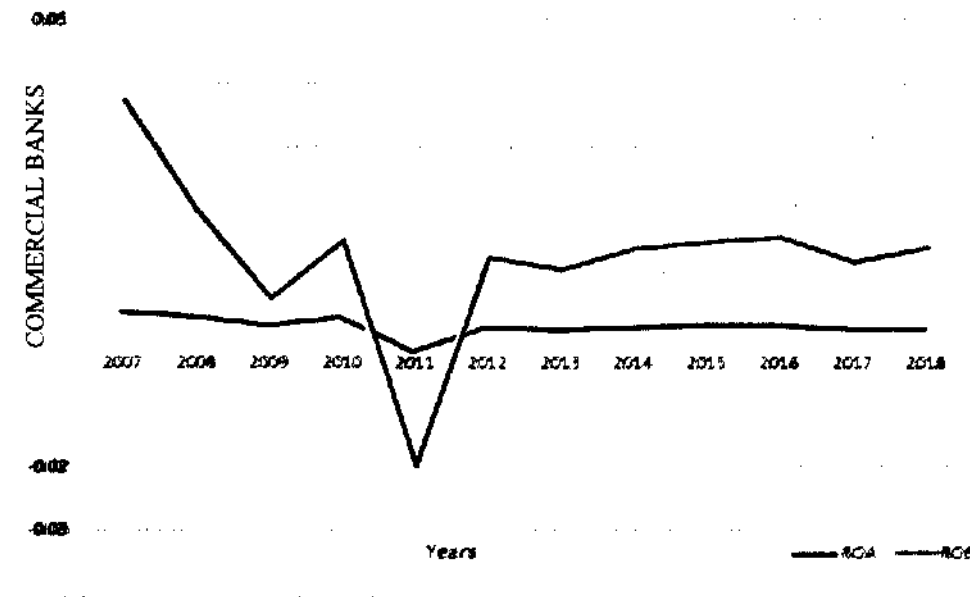


Figure 1.1: ROA and ROE Trends from 2007 to 2018 Authors Computation using Excel.

As seen in Figure 1.1, ROA is more consistent as compared to ROE where the ROE started dropping from 2007 however, it goes up from 2009 to 2010 where it sharply falls below expectation (negative) from 2010 to 2011 and goes up in the year 2012. In the case of ROE as earlier stated, there is a slight inconsistency from 2007 to 2012. Irrespective of the measurement used, the performance could be influenced by explanatory variables of the study, which include risk factors such as liquidity, capital adequacy, market, solvency, operational and loan loss provision.

Financial system comprises of Bank Financial Institutions (BFIs), such as commercial banks, and Non-Bank Financial Institutions (NBFIs) like pension funds administrators, insurance companies, mutual funds, stock exchanges, finance houses and so on. The key role of BFIs is

to mobilize savings for productive investments to facilitate capital inflows towards various sectors of the economy. Such role is performed by the commercial banks to mobilize savings deposit from surplus units of the economy to deficit units of the economy.

In Nigerian banking industry, major banks that accept deposits and issue loans to customers in need are commercial banks sometimes known as Deposit Money Banks-DMBs (CBN, 2015; Nigeria Galleria, 2015). These banks include Microfinance Banks (MFBs), Development Banks, Primary Mortgage Banks, Non-interest (or interest free) banks such as Taj Bank PLC and Jaiz Bank PLC and Commercial Banks like First Bank of Nigeria LTD, Guaranty Trust Bank PLC, Zenith Bank PLC, United Bank of Africa PLC, and so on (CBN, 2020). Commercial banks are established to maximize wealth for its shareholders and in the process; they contribute to economic growth of a nation. It is worthy of note that banks in many economies globally are mainly concerned with providing loans and related financial services compared to any other financial institution. Therefore, a key attribute of banks is to provide liquidity for its customers who may be interested in cash withdrawal and lending money to borrowers. In this process, it is pertinent for commercial banks to evaluate the risk they face daily while lending. Financial risk entails the chance of losses or gains that emanate from failure or successes of people, systems and internal processes, as well as losses or gains from external events. However, risk management is a mixture of coordinated tasks aimed at controlling and directing risks factors organizations face through incorporation of varying risk management measures and processes that are related organizational objectives (Nikolaidou & Vogiazas, 2014). Risks irrespective of the type threatens the performance of banks.

The risk presence associated to financial sector could be attributed to products offered by the sectors. The financial institution more especially the banking sector, measuring their

performance is a task that involves a lot of dimensions that are hinged on shareholder's return maximization. However, the stakeholders need to be satisfied also as they influence banks as depositors. Thus, apart from banks profitability, the strengths of the financial system is attributed to the exposure of the banks to variety of risks, which should be considered in relation to performance (Al-Yatama, Al Ali, Al Awadhi, & Al Shamali, 2020). In terms of international activities through the banking operations could result in many inequalities which could lead to risk where market and liquidity risk are all involved among others. Unequivocally, the variety of risk that a bank goes through is attributed to management strategy by the bank which will have a direct bearing on the profitability as well as share value of the bank (Zaman & Hashmi, 2020; Nguyen & Nguyen, 2020).

Capital adequacy risk is an important variable in determination of bank profitability, and an optimally capitalized bank could provide an insight to the market that an above average financial performance should be expected (Mendoza & Rivera, 2017). Capital adequacy risk is a banks face when they do not meet minimum capital requirements to attain level of soundness and safety as stipulated in the banking supervision and regulatory law (CBN, 2020). Capital is very essential to a bank that is why CBN continuously change banks minimum capital requirement when the apex bank realizes that banks capital base is low.

Before the establishment of the CBN in 1958, the minimum capital requirements for banks incorporated in Nigeria were expressed in British pound sterling (£) as Naira (₦) was not the Nigeria currency then. This is because the country was under British colonial rule. When CBN was established in 1958 and started banking business in 1959, the minimum capital requirements were 1,500,000 Naira for foreign ownership banks and 600,000 Naira for Nigerian ownership banks. Between 1979 and 1987, minimum capital requirements were

1,500,000 Naira for foreign ownership bank, 600,000 Naira for Nigerian ownership banks and 2,000,000 Naira for Merchant banks (CBN, 2009, 2012, 2019).

In February, 1988, the minimum capital requirements were ₦ 5,000,000 for commercial banks and ₦ 3,000,000 for Merchant banks. In October, 1988, the minimum capital requirements were ₦ 10,000,000 for commercial banks and ₦ 6,000,000 for merchant banks. Between 1989 and 1990, the minimum capital requirements were ₦ 20,000,000 for commercial banks and ₦12,000,000 for merchant banks. Beside this, between 1991 and 1996, the minimum capital requirements increased to ₦50, 000,000 for commercial banks and ₦40,000,000 for merchant banks. Between 1997 and 2002, the minimum capital requirement was ₦500,000,000 for both commercial and merchant banks. Also, minimum capital requirement of banks between the period 2003 to 2004 was ₦2,000,000,000 for universal banking. Moreover, in July, 2004, there was increment in minimum capital requirement from ₦2,000,000,000 to ₦25,000,000,000. This increment was on till 2011 when dichotomous minimum capital requirements were introduced again into Nigeria banking system (CBN, 2020). Presently, the minimum capital requirement for DMBs is 10 billion Naira for banks licensed to operate regionally; 25 billion Naira for banks licensed to operate nationally and 50 billion Naira for bank licensed to operate internationally (CBN Regulation, 2019). Hence, changes in the capital adequacy by CBN from period to period can pose a risk to commercial banks by not meeting the minimum capital requirements. This is because banks that failed to meet minimum capital requirements can be declared bankrupt and operating licenses revoked. Banks minimum capital requirements trend in Nigeria is necessary to enable the readers understand the risk of recapitalization that commercial banks went through over years.

The liquidity risk is the next predictor that may influence banks financial performance in Nigeria. Liquidity risk is a risk that results in inability of bank to meet short term obligations like money and easily convertible assets such as marketable securities on demand. Liquidity represents a pivotal measure of banks risk as that result from unexpected increase deposit withdrawals by depositors, which may cause banks liquidation (Saunders & Cornett, 2007). Liquidity risk in banks may occur as a result of varying factors such as significant increase in sudden demand of deposit by account holders and an inadequate market disruption or market depth (Basel Committee, 2008).

Poor risk management may also cause liquidity risk which is associated with insolvency of the commercial banks. Lack of enough liquidity or illiquidity pose a threat to commercial banks because they cannot meet up with both short term payment of bills and supplies as well as long term services of loans and debentures obligations that may affect future profitability of the commercial banks in Nigeria (Basel Committee, 2008).

Solvency risk (leverage risk) is risk of inability of banks to cover the long-term obligation (Dahiyat, 2016). This type of risk may arise when a bank experience financial losses from its assets as a result of loans, financial securities or other bank activities write-offs (Dahiyat, 2016). It means banks capital base do not sufficiently cover the losses. Therefore, inability of bank to meet its financial obligations will result in default. To hedge against such risk, banks must ensure it keeps an optimal capital buffer in order to reduce capital accordingly and remain solvent (Raja, Sami & Alessandro, 2015). Solvency risk may be measured by financial leverage such as debt to equity ratio, debt to total asset ratio and so on (Dahiyat, 2016).

Market risk (interest rate risk) represents risk factors that cause fluctuation in banks earnings. Market risk is the risk that emanate from any adverse change in interest rates. This is because interest rate is the price of money paid for deposit or loan (credit) expressed in percentages usually per annum. In Nigeria, interest rate was 14% Monetary Policy Rate (MPR) in 2017, which was the same within the last quarter of 2016 (CBN, 2017). Thus, MPR is the rate that commercial banks borrow from the Central Bank to meet immediate cash shortfall or illiquidity. This is because high interest rate improves banks profitability than low interest rate if all things being equal.

Operational risk came up as a result of operational errors and it may affect the performance of banks (Gadzo, Kportorgbi & Gatsi, 2019). Operational risk is risk that involves direct or indirect losses experienced by banks as a result of deficiency or failure in systems, people and internal processes or from external environmental factors (Gadzo, Kportorgbi & Gatsi, 2019). Operational risks include external fraud; internal fraud; employment practices and workplace safety; damage to physical assets; clients, products and business practices; execution, delivery and process management failure; business disruption and system failures (El Adlouni, Ezzahid, & Mouatassim, 2011). Bank internal fraud is a conduct that is intended to defraud, avoid regulations, misappropriate property, law or company policy, excluding diversity or discrimination events that involves at least one internal party (El Adlouni, Ezzahid, & Mouatassim, 2011). Sudden failure of banking internal activities as a result of network failure, employees' attitude, political violation, insurgency, artificial and natural disasters, industrial unrest and so on may disturb the profitability of commercial banks in Nigeria. This is because the banks will suffer losses due to halt in its internal operations. External fraud is an act of a type intended to defraud, misappropriate property or circumvent the law, by an external party (Eladlouni, Ezzahid, & Mouatassim, 2011).

Loan loss provision is a risk factor used as both explanatory and moderating variables in this study. Loan loss provision is provision made against future defaulted loans (Isa, Choong, Fie & Rashid, 2018). Managers use Loan loss provision to direct the banks' performance as a mechanism of signaling view to investors, shareholders and users of financial statements (Isa, Choong, Fie & Rashid, 2018). Managers also employ Loan loss provision to achieve certain objectives that would provide the required signals ahead of crisis. As a measure of credit quality, higher loss provisions is better for commercial banks (Karimiyan, Nasserinia & Shafiee, 2013). Apart from loan loss provision influence on commercial banks, it also moderates the relationships between bank capital adequacy risk and financial performance; liquidity risk of banks and financial performance; solvency risk and financial performance; market risk and financial performance as well as operational risk and financial performance. Karimiyan, Nasserinia, and Shafiee (2013) observe the influence of loan loss provision and banks future earnings. Also, Kportorgbi and Gatsi (2019) found moderating role of risk factors such as operational risk on banks financial performance. Therefore, this study attempts to examine the extent loan loss provision moderate the impact of financial risks factors on banks financial performance in Nigeria for the period 2007 to 2018.

1.2 Statement of the Problem

Nigeria banking industry has experienced varying reforms that has resulted in intensive competition in the industry that has culminated into improved innovations and financial performance. Consequently, the operations of the commercial banks have been exposed to risks due to internal and external factors. Internal risk are within the confine of commercial banks control, while external risk factors are beyond banks control. The financial risk factors that are likely to disrupt the attainment of commercial banks profit and wealth maximization include capital adequacy, liquidity, solvency, market and operational risks, which is moderated with change in loan loss provision (Le & Phan, 2017; Dinh & Pham, 2020;

Nguyen & Nguyen, 2020; Ullah, Pinglu, Ullah, Zaman & Hashmi, 2020; Al-Homaidi, Tabash & Ahmad, 2020a; Senan, Anagreh, Al-Dalaien, Almugari, Khaled, & Al-Homaidi, 2021a). Capital is very essential in both profit and non-profit oriented organizations. Capital is needed either to start new business, to acquire/merge with another business or to increase the existing production capacity in order to boost banks' activities and profitability. This is because capital to any business organization such as bank cannot be over emphasized. Change in banks capital adequacy ratio driven by the apex bank of Nigeria overtime is a problem to commercial banks. This is because many banks were declared bankrupt and operating licenses revoked as a result of the banks inability to comply with minimum capital requirements. This can be seen in percentage changes of capital adequacy risks of the commercial banks such as Access Bank. The percentage changes of capital adequacy of Access Bank in the data set was 22.9%; - 53.74%; 64.77%; 11.46% and 154.79% for year 2014, 2015, 2016, 2017 and 2018 respectively. Besides, there are academic debates on the influence capital adequacy risk on banks performance, which is a risk to commercial banks. The outcome of the arguments among academic researchers produced mixed findings. Some scholars argue in their studies that capital adequacy risk influence bank performance but other scholars have contrary findings. Such studies from researchers include the studies of Purnamawati and MSi (2014); Lenee and Sulaiman (2016); and Mendoza and Rivera (2017).

Purnamawati and MSi (2014) found that the capital adequacy and liquidity risks have a positive and significant effect on profitability of conventional rural bank in Indonesia. Since the study focused on Indonesia, the findings could not be employed to make generalization for other economies especially developed economies due to geographical and time variation of the study. Lenee and Sulaiman (2016) observe that capital adequacy ratio strongly and actively stimulates and improves the financial performance of banks in Nigeria from 2008 to 2012. But the study utilized time series data of five years which is not enough. Mendoza and

Rivera (2017) indicate that capital adequacy risk has no significant impact on the profitability. On the other hand, liquidity risk has a negative significant impact on the profitability of rural banks in the Philippines from 2009 to 2013. It should be noted that the study was conducted on rural banks in Philippines and the present study is on commercial banks in Nigeria with operational coverage in both rural and urban areas.

The second risk factor is liquidity. Bank liquidity determines the volume of credits supply to interested customers. Therefore, illiquidity is a problem to commercial banks because of their inability to meet up with short term obligations which may affect earning power of the banks in Nigeria. For example, the percentage changes of liquidity risk in the data set of Guaranty Trust Bank was 20.68%; 0.36%; 12.68%; -2.52% and -17.15% for year 2014, 2015, 2016, 2017 and 2018 respectively.

In addition, previous studies linking liquidity risk and financial performance include studies of Olarewaju and Adeyemi (2015). Lartey, Antwi and Boadi (2013) indicate that there is a very weak positive relationship between liquidity ratio and profitability of seven sampled listed banks on the Ghana Stock Exchange from 2005 to 2010. However, the study instead of using sample of seven banks out of nine listed banks in Ghana Stock Exchange should have used all the listed banks. Ly (2015) found a negative and statistically significant relationship between liquidity risk and bank performance across 27 European Union (EU) countries from 2001 to 2011. But the study was conducted in European Union (EU) countries while Nigeria is a member of Africa Union (AU). Olarewaju and Adeyemi (2015) show that there is no causal relationship (both unidirectional and bidirectional) between total loan and advances to total deposit (a proxy for liquidity ratio) and profitability (ROE) of 15 sampled commercial banks in Nigeria from 2004 to 2013.

However, the study made use of ROE as a measure of performance. This study uses both ROE and ROA which is a measure of return on investment that are mostly used by scholars (Dinh & Pham, 2020; Ullah, Pinglu, Ullah, Zaman & Hashmi, 2020; Nguyen & Nguyen, 2020). The ROA shows bank management ability to generate income through efficient utilization of available bank assets. Additionally, bank ROA shows how efficient banks management is effectively utilising assets to generate income. The ROE shows the extent banks management effectively utilize shareholders' capital to achieve its set objective of profit maximisation. This is because previous studies such as (Le & Phan, 2017; Dinh & Pham, 2020; Nguyen & Nguyen, 2020; Ullah, Pinglu, Ullah, Zaman & Hashmi, 2020; Al-Homaidi, Tabash & Ahmad, 2020b, Senan, Anagreh, Al-Dalaen, Almugari, Khaled, & Al-Homaidi, 2021b) support their claim on the use of either ROE or ROA on the majority of researchers' view however, no statistical justification as to the reason for the selection of either one of the measurements which this study addressed.

Solvency risk relates to how long term obligation can influence bank profitability. In a situation where a bank becomes insolvent, creditors face problem of losing a portion of principal and interest payments, and equity investors face challenge of potentially losing their investment. Long term obligations are financial leverages that include term loans, debentures and bonds. Some of the debt instruments are cheaper and difficult to obtain while some are expensive and easy to acquire. The costs of acquiring long term debt obligations as a measure of solvency risk may affect banks profitability in Nigeria due to changes. For example, the percentage changes of solvency risk in the data set of First Bank of Nigeria was 0.13%; - 879.31%; 1.59%; - 876.91% and - 153.48% for year 2014, 2015, 2016, 2017 and 2018 respectively. Again, empirical studies of academic researchers that produced different findings about solvency risk and banks performance comprise the study of Hailu (2015) and Dahiyat (2016). Hailu (2015) observed that solvency risk has negative significant effect on

profitability of banks in Ethiopia from 2012 to 2013. A sample of eight banks may not be adequate to make statistical inferences for other banking jurisdictions using the result derived. Dahiyat (2016) indicates that liquidity risk has negative significant effect on banks profitability, while solvency risk has no significant effect on profitability of listed banks in Jordan from 2012 to 2014. But the study was conducted in Jordan using four-years panel and time series data that is grossly inadequate. Also, the study utilized time series data of five years.

The next risk variable is market risk known as interest rate risk. The fluctuation and stability of market that determined interest rates may pose a threat to earning power of banks in Nigeria. This is because interest rate fluctuations cause a problem to commercial banks in making a reasonable profit. For instance, the percentage changes in market risk data set of First City Monument Bank (FCMB) of Nigeria was -1.0 %; 1.0%; 1.0%; 4.0% and - 4.0% for year 2014, 2015, 2016, 2017 and 2018 respectively. Furthermore, empirical studies that supported market risk and profitability of commercial banks include studies of Sattar (2014); Obidike, Ejeh, Ugochukwu (2014); and Wambari and Mwangi (2017).

Sattar (2014) shows that there is significant positive relationship between interest rate and banks profitability in Pakistan from 2008 to 2012. However, the study sampled only four banks. Obidike *et al.* (2014) observe that interest rate spread has negative significant effect on banks long-run performance. In addition, the short-run result indicates that interest rate spread has insignificant effect on bank performance in Nigeria. However, the findings show inverse relationship. Wambari and Mwangi (2017) indicate that lending rate ratio has positive significant effect on banks financial performance. On another hand, deposit interest ratio has negative significant effect on financial performance banks in Kenya from 2002 to

2014. It should be noted that the study used time series data that were not subjected to unit root test (stationarity test) to strengthen the validity and reliability of the results derived.

Operational risk measures direct or indirect loss arising from inadequacy or failure of internal processes such as error, internal fraud, etc (Lyambiko, 2015). Unexpected failure of banking internal processes such as network failure is a problem to the commercial banks in Nigeria. This is because the banks will suffer losses due to break down in their internal operations that may affect the profitability. This can be seen in the percentage changes in the data of banks. For example, the percentage changes in operational risk data set of Zenith Bank of Nigeria was 0.61%; 2.86%; 9.12%; 2.25% and 57.89% for year 2014, 2015, 2016, 2017 and 2018 respectively. More so, previous studies that relate operational risk that may hinder success of banks include studies of Lyambiko (2015); Ferrouhi (2014); Olweny and Shipho (2011).

Olweny and Shipho (2011) found that profitability of banks in Kenya from 2002 to 2008 could be attributed to improved capital bases, improve assets quality by reducing the rate of non-performing loans, reduce operational costs, employ revenue diversification strategies in contrast with focused strategies and maintaining an optimal amount of liquid assets. But the research was conducted in Kenya. Ferrouhi's (2014) result of empirical analysis indicates that performance of banks in Morocco is largely influenced by size of banks, liquidity ratio, logarithm of the total assets squared, share of own bank's capital of the bank's total assets, external funding to total liabilities, unemployment rate, foreign direct investments and realization of the financial crisis variable. However, the findings cannot be generalized due to limited scope. Lyambiko (2015) found that operational risk management has positive significant effect on financial performance of banks in Tanzania. However, the findings of

the study may not be used for generalization in wider perspective due to place and different study variables.

Loan loss provision is moderating factor among the study variables. This is because it moderates the relationships between capital adequacy, liquidity, solvency, market, operational risks and financial performance. One of the policies set by the banks to absorb possible credit losses is Loan loss provision. There are few literatures using loan loss provision as moderating variable to the best of my knowledge. Prominent among the studies is the research works of Karimiyan, Nasserinia and Shafiee (2013); Otieno, Nyagol and Onditi (2016) and Isa, Choong and Rashid (2018). Karimiyan *et al.* (2013) found that there is significant positive relationship between loan loss provision and future earning, and change in return in Commercial Banks of Malaysia. Otieno *et al.* (2016) show that liquidity risk management, loan loss provision coverage ratio and portfolio at risk have strong negative relationship with microfinance banks performance (ROA and ROE) in Kenya. Isa, *et al.* (2018) indicate that credit risk management significantly moderate relationship between non-performing loan, net profit, interest income, loans and advances and Gross Domestic Product on bank loan loss provision in Malaysia. However, there seems to be paucity of study in Nigeria and the findings cannot be used in wider perspectives. Thus, it this present study seeks to fill this obvious empirical gap by studying the moderating role of loan loss provision on relationship between financial risk and performance in Nigeria.

Furthermore, the review of previous literature enables the present study to identify inconsistencies. Thus, the gaps identified are scope, conceptualization and methodology and finding gaps. Conceptualization gap covers the definitions of the study variables which is used as the one defined by varying scholars. Also, the design of both schematic and mathematic models by various past studies is diverse. Methodological gap is seen in terms of modelling and measurement of the study variables that differentiate this study from the

earlier studies. Finding gap is seen in terms of significance and non-significance of some results in many countries including few studies in Nigeria. For instance, the findings of studies conducted outside Nigeria in places like Tanzania, Kenya, Pakistan, Philippines, Jordan and so on may not be applicable in Nigeria. Moreover, few studies conducted in Nigeria up till year 2016 such as Obidike *et al.*, (2014), Uwalomwa *et al.*, (2015), Lence and Sulaiman (2016) failed to include all the study variables of this study in their model specifications. In addition, the method used in the measurement of the study variables is different from many studies conducted within and outside Nigeria. This is because some studies such as Muriithi, Muturi and Waweru (2016) measured financial performance as profitability using Return on Equity (ROE) while this study uses Return on Asset (ROA). So, these are the weaknesses observed in the empirical studies reviewed which are research gaps.

This study intends to improve on weaknesses of studies reviewed which form the basis of research problems. Thus, this study wants to advance frontiers of knowledge by assessing moderating role of loan loss provision on the relationship between risks and banks financial performance in Nigeria. This is because risk factors constitute a threat to profitability objective of banks. Also, the performance of banks is mostly gauged by profitability. The present study adapts modified statistical estimation model employed by Muriithi *et al.*, (2016) for analysis. The model of Muriithi *et al.*, (2016) used profitability (ROE) to measure financial performance, while this study used both ROE and ROA. Additionally, the study used predictors like capital adequacy; market; operational and liquidity risks using bank size as control variable. Also, the study was conducted in Kenya and utilized 10-year time series data that ended 2014. The modifications affect the scope and methodology of Muriithi *et al.*, (2016) research work.

Apart from empirical review of literature to identify research gaps which are research problems, the practical problem is that commercial banks are mandated to maintain certain

ratios, percentages or keep certain percentage of their deposit liabilities with CBN to avoid the problem of capital; liquidity and solvency risks; and market risk (CBN, 2019). But some commercial banks were not able to meet up with the apex bank's requirements which resulted in mergers and acquisitions of banks as well as bankruptcy (Sanusi, 2010). Section 9(1, 2 & 3) as amended states that CBN shall from time to time determine the minimum paid-up share capital requirements of each category of banks licensed under this decree. Any failure to comply with the provisions of the decree within such period as may be determined by the apex bank from time to time shall be a ground for the revocation of any license issued. More so, Section 13(2b) of BOFID (1991) as amended states that a bank will be prohibited if it fails in granting credit and making investment. Also, Section 15(1) and Section 16 (1) of BOFID (1991) as amended states that banks are mandated to keep cash or its equivalents portion of their customers' deposit liabilities (as statutory reserve) with CBN which will be determined from time to time. Again, Section 9(1) that every bank shall display at its offices its lending and deposit interest rates which may be specified by the apex bank from time to time.

1.3 Research Questions

The research questions that guide the present study are presented to ascertain:

- i. To what extent does capital adequacy risk affect financial performance of commercial Banks in Nigeria?
- ii. To what level does liquidity risk influence financial performance of Commercial Banks in Nigeria?
- iii. To what degree does solvency risk affect financial performance of Commercial Banks in Nigeria?
- iv. To what extent does market risk affect financial performance of the Commercial Banks in Nigeria?

- v. To what extent does operational risk influence financial performance of Commercial Banks in Nigeria?
- vi. To what extent does loan loss provision determine financial performance of Commercial Banks in Nigeria?
- vii. To what extent does loan loss provision moderate the relationships among capital adequacy risk, liquidity risk, solvency risk, market risk, operational risk and financial performance of Commercial Banks in Nigeria?

1.4 Research Objectives

The basic objective of the study is to examine the moderating role of loan loss provision on the relationship between risks and the financial performance of Commercial Banks in Nigeria. Specifically, the study seeks:

- i. To investigate the effect of capital adequacy risk on the financial performance of commercial banks in Nigeria;
- ii. To determine the effect of liquidity risk on financial performance of Commercial Banks in Nigeria;
- iii. To examine the effect of solvency risk on financial performance of Commercial Banks in Nigeria;
- iv. To investigate the effect of market risk on financial performance of Commercial Banks in Nigeria;
- v. To determine the effect of operational risk on financial performance of Commercial Banks in Nigeria;
- vi. To examine the effect of loan loss provision on financial performance of Commercial Banks in Nigeria;

- vii. To investigate if loan loss provision moderates the relationships among capital adequacy risk, liquidity risk, solvency risk, market risk, operational risk and financial performance of Commercial Banks in Nigeria.

1.5 Research Hypotheses

In order to achieve the above specific objectives, eleven (11) null hypotheses are developed for testing as follow:

- H₀₁ Capital adequacy risk has no significant effect financial performance of Commercial Banks in Nigeria.
- H₀₂ Liquidity risk has no significant effect financial performance of Commercial Banks in Nigeria.
- H₀₃ Solvency risk has no significant effect financial performance of Commercial Banks in Nigeria.
- H₀₄ Market risk has no significant effect financial performance of financial performance of Commercial Banks in Nigeria.
- H₀₅ Operational risk has no significant effect financial performance of Commercial Banks in Nigeria.
- H₀₆ Loan loss provision has no significant effect financial performance of Commercial Banks in Nigeria.
- H₀₇ Loan loss provision has no moderating effect on the relationship between capital adequacy risk and financial performance of Commercial Banks in Nigeria.
- H₀₈ Loan loss provision has no moderating effect on the relationship between liquidity risk and financial performance of Commercial Banks in Nigeria.
- H₀₉ Loan loss provision has no moderating effect on the relationship between solvency risk and financial performance of Commercial Banks in Nigeria.

H₀₁₀ Loan loss provision has no moderating effect on the relationship between market risk and financial performance of Commercial Banks in Nigeria.

H₀₁₁ Loan loss provision has no moderating effect on the relationship between operational risk and financial performance of Commercial Banks in Nigeria.

1.6 Significance of the Study

The findings of the study is expected to contribute to literature and provide insights into future researches in the area where were hitherto characterized by inadequate empirical studies on the relationship between financial risk factors and banks financial performance. Therefore, the main contributions of this study include moderating role of loan loss provision on the relationship between financial risks and banks financial performance in Nigeria. Generally, the study established the existence of the moderating role of loan loss provision on the relationship between capital adequacy, liquidity, solvency, market and operational on profitability on commercial Banks in Nigeria. Generally, the study established the existence of the moderating role of loan loss provision on capital adequacy risk, solvency risk and operational risk on return on equality. Specifically, the significance of this study is highlighted below.

Firstly, previous studies on bank performance focused mostly on corporate governance. Moreover, previous studies did not investigate the effects of risk factors on performance using a moderator. Secondly the presence study use panel regression and Panel Correction Standard Errors (PCSE) is used due to existence of heteroscedasticity in the model. The third significance is that the findings of this study are generally relevant to policy makers, practitioners, investors on one side, and the academia on the other side. Specially the significance of the study policy makers and practitioners is in the following ways:

First, the findings is expected to help management and banking industry regulators, through providing a mirror view of the effect of varying risk factors on the performance of the industry players. This is expected to guide them in devising frameworks and mechanizing for optimal or minimal level of risk banks should be exposed to the policy makers include Central Bank of Nigeria (CBN) that regulates and supervises banking industry in Nigeria. This study would help the apex bank in formulating policies relating to risks in the banking sector. Also, it would give guide to (CBN) decisions concerning financial performance of (CBs) in Nigeria. Secondly would be interested in proxies that really affect financial performance of banks and economy. The study would be beneficial to them by providing information needed before taking decision relating to risk factors such as capital adequacy risk, liquidity risk, market risk, solvency risk and operational risk to financial performance of return on equity of banks. The third significance of this study would provide information about the contribution of an empirical insight of risks effect direction on financial performance that's it provides the basis for making an informed investment decision for optimum return and minimum risk level.

Finally, this study would help students and potential academic researchers in area of banking and finance by providing them with theoretical knowledge on variable that significantly contribute to commercial banks financial performance in Nigeria. This study fills the gap that has been identified in previous studies and also serve as a foundation on which students and academic researchers may depend on for further studies.

1.7 Scope of the Study

This study empirically examines moderating role of loan loss provision on the relationship between financial risks and financial performance of commercial banks in Nigeria (See

appendix II) for the period of twelve (12) years from 2007 to 2018 using accounting ratios of profitability for financial performance measurements. The data of the study was collected in year 2019 when the data was readily available. The study focused on the Nigerian banking sector. The choice of this duration for the study is because it was within this period that banks faced various risks due to increase in capital requirements which resulted in merger and acquisition of banks. Therefore, picking this period is important to commercial banks in handling risk for better financial performance (Somoye, 2008; Akinlo & Owoyemi, 2012). Apart from the period of the study, the independent variables used to measure various risk factors are capital adequacy, liquidity, solvency, market and operational risk, which are moderated by loan loss provision. On the other hand, dependent variable represented by financial performance is measured by profitability with Return on Asset (ROA) and Return on Equity (ROE) employed as proxies. The two variables are a measure of return on investment. ROA is used mostly by many previous research scholars such as Ndichu (2014); Idowu (2014); El- Massah and Al-Sayed (2015); Lenee and Sulaiman (2016); Dahiyat(2016); Wambari and Mwangi (2017). This study also uses ROA only because it measures the returns on total investment as indicator of profitability which is commercial banks financial performance. But the research of Muriithi *et al.*, (2016) that is adopted was conducted in Kenya, making use of 10-year time series data that ended 2014 and ROE is used as a measure of profitability.

CHAPTER TWO

LITERATURE REVIEW AND THEORETICAL FRAMEWORK

2.1 Introduction

Literatures related to key elements and concepts of research works that are pertinent to the study were reviewed in this chapter. Literatures are reviewed on determinant of risk factors of banks that are studied to ascertain divergent scholarly opinions. The determinants of banks financial performance are also reviewed with a view at taking an empirically verified stand on influence of risk exposure on commercial banks performance. Finally, theoretical framework underpinning the effect of banks risk exposure and financial performance is identified, stated and explained.

2.2 An Overview of Banking System in Nigeria

Banking activities commenced in Nigeria in 1892 with opening of African Banking Corporation in Lagos. As expected the bank experienced some teething problems so, in 1893 the bank transferred its interest and shareholding to Elder Dempster and Co. This resulted in the establishment of British Bank of West Africa (BBWA) in 1893, Barclays Bank in 1917 and British and French Bank in 1949 which are currently known as United Bank for Africa, First Bank Nigeria and Union Bank of Nigeria respectively. These foreign banks came mainly to render services that are related to international trade, and transact mostly with emphasis on foreign companies and Nigeria government. The expatriate banks have a major control of about 90% of the total bank deposits as at then, yet they ignored the indigenous businesses (NOU, 2012; Akinlo & Owoyemi, 2012).

Conversely, these foreign owned banks paid little or no attention to local entrepreneurs' development in Nigeria. But, rather repatriated profits earned from host country to home countries, where their headquarters are domiciled. Beginning between the periods from 1917

to early 1930s, numerous unfruitful efforts to break foreign monopoly of banks were made through setting up banks. The unsuccessful efforts were largely fuelled by weak indigenous banks with low capitalization, management inadequacy and absence of local government backed financial regulatory agency in Nigeria. Thus, indigenous banks faced survival challenges in an operating environment that was characterized by hostility and unfair competition from foreign owned banks. Therefore, by 1954 the number of failed and self-liquidated indigenous banks was 21 out of 25 established by indigenous entrepreneurs. Banking regulatory and supervisory functions were carried out by the former West Africa Currency Board (WACB) in this era. The board was in charge of regulatory and supervisory functions of West African British colonies, which include Nigeria, Ghana, Gambia and Sierra Leone, until between 1957 to 1964 when Central Banks were established by these countries (Akinlo & Owoyemi, 2012; NOU, 2012; Sayedi, 2017).

The persistent incidences of indigenous banks failure resulted in enactment of Banking Ordinance of 1952 as a regulatory framework to regulate banks operation, prior to the establishment of CBN in 1957. The CBN was saddled with the responsibilities of ensuring monetary and price stability; maintaining external reserves of the country; issuance of legal tender; safeguarding currency international value; promoting sound financial system; serve as government and banks banker, giving financial and economic direction to Federal Government of Nigeria (CBN, 2013). The period preceding CBN establishment and post independence in 1960, heralded strengthening regulatory capabilities of the CBN with the enactment of the Banking Act of 1969 in Nigeria. The indigenization policy that was anchored on decree promulgated in the 1970s saw to nationalization of foreign owned banks through significant ownership stake of banks by the federal government of Nigeria. A further legislation led to empowerment of commercial and merchant banks resulted to take deposits from companies and individuals, and also carry out general banking business. Despite the

enforcement of indigenization decree the problem of bank distress syndrome persisted in Nigeria, which was largely attributed to management problems (CBN, 2013).

The introduction of Structural Adjustment Programme (SAP) by federal government in 1986 resulted in migration from regime of strict direct monetary control to indirect monetary control and selective credit allocation policy elimination in the early 1990s. The privatization and commercialization programmes that were initiated in the 1990s resulted in Government disinvestment of its holdings in several banks. In addition, new banks were issued operational licenses. This resulted in upshot of operational banks in Nigeria from 58 in 1990 to 90 in 2001 (CBN, 2013). To advance the scope of financial inclusion dragnet, community banks were introduced in December 1990, many of them became distressed that was fuelled by inability of regulatory capacity to properly monitor banking sector expansion. The persistence of banking sub-sector, distress resulted in introduction of varying policy reforms to stem the tides. A major policy reform that was introduced in 2004 by the CBN was directive that required DMBs operating in Nigeria to recapitalize by December 2005 to minimum capital base of ₦25,000,000,000. This consequently resulted in revoking licenses of 14 banks and decrease of banks from 89 to 25 (CBN, 2015). Despite recapitalization banks in Nigeria are still below international threshold to compete globally in terms of credit disbursement to customers. This could be attributed to lack of competitive interest rate to sectors such as Agriculture and Manufacturing (Sayedi, 2017).

The Nigeria banking sector comprise of 793 Microfinance Banks (MFBs); 2 Merchant Banks (Rand Merchant Bank Nigeria Limited and FSDH Merchant Bank Ltd) licensed by CBN in 2012; five Development Banks or Development Financial Institutions (which comprises of Bank of Industry, Bank of Agriculture (BOA), Nigeria Export Import Bank, Federal Mortgage Bank of Nigeria and Infrastructure Bank). The Nigerian banking industry also consist of 40 Primary Mortgage Banks (PMBs); 21 Deposit Money Banks and one Non-

Interest Bank (Jaiz Bank PLC) as at August 2019. The DMBs are Access Bank Plc, Citibank Nigeria Plc, EcoBank Nigeria Ltd, Enterprise Bank Ltd, Fidelity Bank Plc, First Bank of Nigeria Plc, First City Monument Bank Plc, FSDH Merchant Bank Ltd, Guaranty Trust Bank Plc, Heritage Banking Company Ltd, Keystone Bank Ltd, Mainstreet Bank Ltd, Stanbic IBTC Bank Plc, Standard Chartered Bank Plc, Sterling Bank Plc, Union Bank of Nigeria Plc, United Bank for Africa Plc, Unity Bank Plc, Wema Bank Plc and Zenith Bank Plc (CBN, 2019).

2.3 Banking Sector Reforms in Nigeria

Banking sector reforms in Nigeria could be classified into five periods. These include periods of free rein, strict regulation, deregulation, universal banking and banking consolidation (Chiejine, 2010; NOU, 2012). The period of free reign (1930 - 1960) was characterized by control of banking operations in Nigeria by former West Africa Currency Board (WACB). The period was also characterized by weak and slack regulatory restrictions for new entrants, which resulted in establishing over 100 banks, were established. To stem the tides, the first 1952 Banking Ordinance as amended in 1958 was enacted.

This led to outline of conditions for both indigenous and foreign banks licensing as stipulated in the Banking Ordinance such as fulfilling statutory minimum capital requirement for both indigenous and expatriate banks, which was pegged at £12,500' and £200,000 respectively. Also, banks were required to maintain special liquidity and cash ratio level to meet customers cash needs at any given period; and it also imposed lending limits on banks to checkmate excess, unauthorized and uncontrolled lending to mitigate credit risk exposures and loan losses (Adekanye, 1986 cited in Ojong, Ekpuk, Ogar & Emori, 2014). Enactment of banking ordinance of 1952 as amended in 1958 aimed at protecting indigenous local banks from failure could not hedge from the stiff competition from foreign banks (Sayedi, 2017).

The second period of banking sector reform heralded strict banking regulation (1960 - 1985). This era was characterized by establishment of CBN in 1958 and commenced operations in July, 1959 to serve as regulatory and supervisory agency of Nigeria banking system. This era experience the introduction of money market instruments such as money fund, treasury bills, treasury certificate, commercial bills, eligible loan stock and certificate of deposits. The period also saw in 1962, the adjustment of Ordinance to review minimum paid up capital for indigenous banks to £25,000. Also, the 1969 Banking Act reviewed indigenous and expatriate banks capital requirement (minimum paid-up capital) to £300,000 and £750,000 respectively. The period also experienced the regulation of banking sector through Indigenization decree of 1971, which categorized share capital in favor of indigenous banks. Banks share capital was reviewed to ₦600,000 for indigenous Nigerian and ₦1,500,000 for Foreign owned banks respectively. The share capital of Merchant bank share capital was pegged at ₦2,000,000. Again, despite the introduction of dichotomous share capital in favour indigenous banks; they were characterized by corruption and mismanagement, which impeded the operation and competitiveness of indigenous banks and were outperformed by foreign banks.

The third period of banking reform was typified by deregulation (1986 - 1999). This period was characterized by Federal Government of Nigeria introduction of Structural Adjustment Programme (SAP). The SAP was aimed at attaining a viable balance of payment in both short and medium terms, with the view of ensuring a sustainable economic environment that is characterized by sustainable non-inflationary growth and improved public and private sector efficiency. To achieve the desired economic position, some policy measures were adopted such as establishment of Second-tier Foreign Exchange Market (SFEM); abolition of price controls, appropriate monetary and fiscal policies adoption, exchange and trade

regulations. Others include tariff structures review, petroleum subsidy removal, public corporations commercialization and privatization, restructuring of administrative system. During this era CBN Decree No 24 of 1991 (as amended) was promulgated, which was subsequently enacted into Banks and Other Financial Institutions Decree (BOFIA) No 25 of 1991. This was to ensure effective regulation and supervision of the banking industry for attainment of stable banking system. Also, Nigerian Deposit Insurance Corporation (NDIC) Decree No 22 of 1988 was also passed with the aimed of insuring licensed banks deposit liabilities, provide complimentary technical and financial support to banks and Central Bank of Nigeria (Sayedi, 2017).

Another major reform measure was the removal of healthy banks credit ceilings by CBN in 1992. A healthy bank is so classified it met some specified CBN guidelines over a period of three months. These specified guidelines include: liquidity ratio, cash reserve, prudential guidelines, capital adequacy ratio, sound management and statutory minimum paid-up capital. The application of these guidelines to classify a bank as healthy or not resulted in declaration of 80 banks as healthy and were exempted from imposition of credit ceilings. Furthermore, free entry of new banks led to increase in the number of banks from 28 in 1985 to 121 banks (66 commercial and 55 merchant banks) in 1992. Despite the policy measures aimed at determining the health status of banks before removal of credit ceilings, banking system still witnessed banks distress in later part of these period. Such that by 1995 out of 120 licensed banks, 55 banks were distressed. To stem the tides of banks failure and its multiplier effects, failed Banks-Recovery of Debts and Financial Malpractices Decree of 1994 was promulgated to with the view of restoring sanity to Nigeria banking system (Ofanson *et al.*, 2010; Mbat 2011 cited in Ojong *et al.*, 2014). The period was also characterized by upward review of banks minimum capital requirement. In October, 1988, CBN reviewed banks minimum capital requirements with commercial and merchant banks

amount reviewed by ₦10 million and ₦6 million respectively. Furthermore, by 1991 banks minimum capital requirements was further reviewed with amount of commercial and merchant banks increased to ₦40 million and ₦50 million respectively. Also, on 31st December, 1998, banks minimum capital requirements was again reviewed for both commercial and merchant banks, which rose to ₦500 million (Iganiga, 2010). Though, the third reform regime is the era of banking boom due to deregulation of banking industry, it also witnessed distress of many banks in Nigeria.

The fourth banking reform era was about universal banking (2001-2004). Universal banking is a banking model that permits banks to diversify into non-bank financial services. Single banking license was issued by CBN to banks to conduct perform conventional and non-conventional activities stipulated in the banking supervision and regulatory law. According to CBN (2000) banks apart from performing their conventional functions such as deposit acceptance, cheque payment or collection drawn by or paid in by customers and credit facilities, banks also carryout one, or a combination of the following non-banking activities. They include capital market activities (underwriting/issuing house), clearing house activities and insurance services. These non-banking activities were also supervised by CBN, and banks must make periodic financial reports. Banks minimum paid up capital was reviewed to ₦2 billion to enable them have financial capacity for universal banking model. The adoption of universal banking distracted banks from carrying out their core role of banking such as deposit taking, lending and bill payment. The deviation of banks to other non-banking businesses culminated in distress of some banks and consequently their liquidation (Somoye, 2008).

The fifth banking reform era (2004 - 2005) witnessed banking sector recapitalization and consolidation anchored on thirteen-point agenda of the CBN. Soludo (2004) rolled out key

reforms measures to improve sustainability of the banking sector, these reform agenda include: increasing banks minimum capitalization to ₦25 billion with full compliance date of 31st December, 2005; phased public sector funds withdrawal from banks effective July, 2004; banks consolidation through voluntary mergers and acquisitions. Some other reform measures also include adoption of regulatory framework that is risk focused and rule based; adoption of zero tolerance regulatory framework, especially on issue relating to data/information rendition and reporting; automation of banks and other financial institutions returns rendition process using the electronic Financial Analysis Surveillance System (e-FASS); establishing a hotline and , confidential email address (governor@cenbank.org) for sharing of any confidential information regarding banks and other financial institution with Central Bank governor; strict systematic banking distress contingency planning framework enforcement; establishing an Asset Management Company for distress loan resolution. Additional reform measures include promoting dormant laws enforcement, especially law that affect dud cheques issuance and the vicarious liabilities of the Board members of banks of distressed banks; review and updating relevant laws, and drafting of new law to ensure effective banking system operations; improved collaboration between CBN and the Economic and Financial Crimes Commission (EFCC) to establish Financial Intelligence Unit (FIU), and anti-money laundering laws enforcement and economic crime laws; and rehabilitation and effective management printing and minting company of Nigeria. However, the fifth banking reform agenda especially the recapitalization policy resulted in serious uncertainty and frustration on the parts of other varying stakeholder. Thus, banks that could not raise the new capital requirement were encouraged to consider mergers and acquisitions as a survival strategy (Sayedi, 2017).

2.4 Drawbacks of Banking Sector Reforms in Nigeria

Banks as financial institutions accept deposits from customer into varying accounts through cash, cheque and other instruments payments; issue credits facilities and serve as custodians of valuables for safe keeping. As stipulated in Section 61 of BOFID (1991) bank are defined as the business of receiving deposits on current account, saving account or similar account, paying or collecting cheques drawn by or paid in by customer, provision of finance or such other business as the Governor may order, publish in gazette, designate as banking business. In the course of carrying out financial intermediation function, banks are bedeviled by varying challenges (Sayedi, 2017).

The banking reform of 2004 and other subsequent reforms carried out by CBN though were largely successful; they were also not devoid of challenges. Firstly, misconception and misrepresentation of reforms intents, example is the introduction of interest free banking that was aimed at broadening the scope banks financial services, which was given religious connotation. This could serve as disincentive to potential investors that see investment potential of the policy. Furthermore, the significant growth that has been experience for some years in varying financial and economic indicators has not translated into sustainable development for the country. This has led to increased levels of unemployment and poverty, which has culminated in low banking habit in the country. Another vital challenge is low manpower quality in the banking sector. Thus, real strategic and sustainable changes can only be experienced if there is competent and committed workforce, which are constantly exposed to international standard training and development. The competitive financial sector requires a highly skilled manpower with ability to effectively add value within financial system. Previously, recruitment of staff was seen as a measure to comply with regulatory requirements, conversely employee training and development was seen as a costly and unnecessary non-revenue function (Sanusi, 2010).

Secondly, the resistant of Nigerians to changes in dynamism in global financial system. Empirical evidence has shown that excessive liquidity in banking system as represented by narrow money (M1), broad money (M2) and currency in circulation influence high cash transactions for economic activities, which has affected efforts by economy managers in achieving price stability. Additionally, despite the potentials of cashless policy in influencing economic growth and development, global trend in usage of e-payments it has been resisted by some stakeholders. Also, the cost of doing business in Nigeria has been noted to be relatively high compared with some developed economies, emerging or developing countries due to poor state of infrastructure.

2.5 Review and Conceptualization of Study Variables

There are some concepts that are pivotal to the study, thus this section provides a detailed explanation for clarity and understanding. This is necessitated by the fact that there are varying opinions on the context of the concept. Therefore, the multitudes of views on the concepts are explained below.

2.5.1 Financial Performance

Financial performance has generic definition. Sattar (2014) and Ndubuaku, Ozioma, Chiaka, Samuel (2017) see financial performance as a change in asset value of bank. Agbeja *et al.* (2015); Mendoza and Rivera (2017) opine that financial performance is the value of net profit after taxes. El-Massah and Al-Sayed (2015); Lenee and Sulaiman (2016); Dahiyat(2016) and Wambari and Mwangi (2017) asserted that banks financial performance could be represented by profitability proxy of Return on Assets (ROA). Mathuva (2013); Muriithi, Muturi, Waweru (2016) declared that financial performance is the bank profitability represented by both ROE and ROA. Profitability is measure by ROE and ROA, which is the construct for banks financial performance in the study. In addition, profitability

which is one of the reasons why banks are established, shareholders of the bank primary objective is the return expected from their shareholdings (ROE) which is also means equity and that translate to the performance of the bank as well. Also, ROA is very important because it measures profit after taxes in relation to bank total assets. Again, it measures returns on total investment as indicator of profitability which is commercial banks financial performance.

2.5.2 Capital Adequacy Risk

Capital is venture money used to start or improve bank business and it is determined by apex bank of a nation. Nzioki (2011) defines capital adequacy requirements as minimum amount of capital required for achieving a safe and sound bank, and also achieve desired level of customers trust and confidence. Capital adequacy measures bank capacity to meet time liabilities and other risks such as operational risk among others. It also assists banks in hedging against threat of potential losses, which is expected to protect bank's depositors and other lenders interest. Adequate capital requirements is aimed as lessening bank probability of banks becoming insolvent as a result of sudden shocks. Capital adequacy is determined by the use of Capital Adequacy Ratio (CAR).

Ayu, Purnamawati and Si (2014) see capital adequacy as a ratio that indicate level of bank total assets that is prone to risks (investments, credit, securities, other banks bills) that are financed from bank capital and funds from external sources. Agbeja, Adedokun and Olufemi (2015) stated that bank capital adequacy represents amount of equity capital and other securities that banks hold as reserve to hedge against risky assets as a hedge against the probability of bank failure. Lenee and Sulaiman (2016) operationally defines capital adequacy risk as risk of banks not meeting minimum capital requirements to ensure safe and sound banking operations as stipulated by banking supervision and regulatory law. It is

measured by division of total number of shareholders' equity to total asset. The high ratio of capital adequacy is more desirable for banks. This means the commercial banks have enough capital to overcome risk of changes of capital adequacy ratio by the apex bank of Nigeria.

2.5.3 Liquidity Risk

Fayyaz (2006) opined that liquidity risk could trigger varying forms of financial risks that include market, credit, interest rate and strategic risks. Saunders and Cornett (2008) assert that liquidity risk arise due to unexpected increase in deposit withdrawals by customers, which could result in banks liquidating their assets within a short period. The liquidity risk may be prompted as a result of varying factors such as significant increase in financial demand of depositors and inadequacy of market disruption or market depth (Basel Committee, 2008). Yuqi (2008) defines liquidity risk as a risk that arises due to insufficient current assets such as short term saleable securities and cash to meet immediate depositors' obligations.

Again, Adeusi, Akeke, Obawale and Oladunjoye (2013) stated that liquidity risk is seen as the risk of funding crisis, such as unexpected event in the form of loss of confidence, large charge off or a crisis of national proportion. Risk management in this case focus on portfolio structure and liquidity facilities. Recognizing bank liquidity risk could influence banks decision to recognize liquidity as an asset, and portfolio design in situation of illiquidity concerns as a challenge. Raja, Sami and Alessandro (2015) stated that liquidity risk could be seen as the risk bank face when they are not able to fulfill its short-term payment obligations to depositor. This may be due to its inability to mobilize adequate funding of it wholesale market (funding liquidity), as its securities or investments cannot be easily liquidated at the right market price (market liquidity). Thus the study operationally defines liquidity risk as the inability of banks to provide short term obligations (money and easily convertible assets

such as marketable securities) on demand. It should be noted that a high liquidity ratio is more desirable to banks. This is because commercial banks in Nigeria will be able to achieve payment of short term obligations at right time.

Imbierowicz and Rauch (2014) assess the effect of liquidity and credit risk on conventional banks. The study found that liquidity and credit risk have significant effect on default probability of banks. The study concluded that even though there is no direct relationship between liquidity and credit risk, the relationship between the two types of risk increases the bank default probability.

Eneyew (2013) assessed relationship between financial risks and commercial banks profitability in Ethiopia. The study found that liquidity risk, inflation and interest risk were also the major factors that adversely affect commercial banks profitability in Ethiopia. The study concluded that inflation was not a major factor that determines the profitability of Ethiopian banks.

2.5.4 Solvency Risk

Raja, Sami and Alessandro (2015) define banks solvency risk as risk of bank inability to meet maturing obligations due to negative net worth. That is, the value of bank assets is less than its liabilities. This could be attributed to a situation where a bank suffers losses from its assets as a result of write-offs on loans, securities or other bank activities. But the bank capital base is grossly inadequate to cover the losses incurred. In such circumstance, the bank is unable to meet its obligations defaults and loses its franchise value. To hedge against such risk, banks must ensure an adequate buffer of capital, such that when it record losses, the bank can decrease its capital and still maintain its solvency. Dahiyat (2016) defines solvency as ability of the banks to cover the long term obligation. The study operationally explains

solvency risk as the inability of banks to cover the long term obligation. The lower the ratio the better for the banks. This is because commercial banks in Nigeria will have low debt instrument in their capital structure couple with low payment of interest rate to debt holders.

2.5.5 Market Risk

Market risks are the risks created by any adverse change in exchange rates, interest rates, commodity prices and share prices. Market risk could arise when banks accept as loan collateral financial instruments that are prone to market price volatility (Worzala, 1995). This risk is linked to variation in assets value as a result of systematic factors. The market risk in banks emerges from varying sources such as instruments, securities portfolios and equities or in form of foreign exchange or interest rate risk (Ishfaq, 2006). For instance, this risk is associated with the unfavourable variations in market value of trading portfolio, caused by market movements, over the transactions liquidation period (Bessis, 2002; Saunders and Cornett, 2008; Adeusi, *et al.*, 2013).

Zahangiralam and Masukujjaman, (2011) state that market risk in the bank is associated with the exposure used in determining volatility of underlying bank risk measures and bank's portfolio sensitivity to the movements in risk factors. Sattar (2014) defines interest rate as a certain sum of money paid on deposit or received on loan. Ndichu (2014) states that interest rate is the annual price charged by a banker (lender) to a customer (borrower) in order for the customer to acquire a credit which is expressed in a percentage. Obidike, Ejeh, Ugochukwu (2014) see interest rate as the price which borrowers (customers) pay for the use of money they lend from a lender or a bank. Wambari and Mwangi (2017) stated that interest rates are expressed in percentages and represent the interest charged/paid over a specified time period.

Fluctuation in interest rates has the potentials to influence banks and their competitors' margin of revenues over costs. For instance, rising interest rates of banks could result in lowering banks profit margin if the structure of a financial institution's assets and liabilities is exemplified by interest expenses on money borrowed increase geometrically than loans interest revenues and security investments. The effect of a varying interest rates on banks margin of profit is referred to as interest rate risk (Pânzaru, 2011). This study operationally defines market risk as a risk that involves changes in interest rate. This is because interest rate is the price of money paid for deposit or loan (credit) expressed in percentages usually per annum.

2.5.6 Operational Risk

Operating risk is total operating expenses in relation to net interest income or net interest margin. Basel Accord (2007) holds that operational risk is that type of risk of direct or indirect loss that could be attributed to inadequate or failed people, internal processes and systems or from external environment. Malfunctions of banks reporting systems, information systems, internal monitoring rules and procedures fashioned in such a way that it could affect timely corrective actions, or ensure compliance with internal risk policy that could result in operational risks (Bessis, 2010).

Operational risk includes events such as clients, products and business practice; business disruption and system failures; employment practice and workplace safety; damage to physical assets; external fraud; execution delivery and process; internal fraud. Furthermore, operational risk entails direct or indirect losses experienced by a banking institution as a result of deficient systems, internal processes and people or from external environmental factors. Operational risk also relates to the possibility of inverse effects on financial performance as and bank capital as a result of employees negligence, inefficient management

information systems, insufficient internal processes and unpredictable or undesirable external events (Kanchu and Kumar, 2013). Banks evolve measures to control and mitigate operational risk through introduction of training and development programmes for employees; investing in advanced technology (systems capacity building); and developing systems backup and contingency plans (Saunders & Cornett, 2008).

The Commonwealth Bank of Australia (1999) defines operational risk as risks that could lead to volatility expenses, reserves and value of the business. Bonsón, Escobar and Flores, (2007) opined that diversification potential effects between businesses is not considered through aggregation of capital. The Basel Committee on Banking Supervision (BCBS) noted that financial effect of a loss event comprises of all out-of-pocket costs but excludes opportunity costs and foregone revenues.

Operational risk is the risk that arises from operational loss that could consequently arise from firm operational errors. That is, operational risk deals with factors that are likely to have negative effect on bank performance as a result bank management rather than bank financing. Consequently, when operational risk is not handled systematically there is tendency that it could lead to performance and earning inconsistency shock to stakeholders. Therefore, level of bank operational risk exposures could affect revenues and net worth.

According to Onwe, (2013), the failure of investment banks in the 1990s emanated from risks that could be attributed to operational risk rather than core or regular banking risks that were not promptly controlled. These risks include legal risk but exclude reputational, systematic and strategic risks. This shows level of operational risk complexity of that could be attributed to its types and causes. The BCBS Basel II noted seven forms of banks operational risks. Firstly, internal fraud risk is a risk factor that is attributed to an act intended

to defraud, misappropriate property, avoid regulations, law or company policy, or excluding diversity/discrimination events, which involve at least one internal party. Secondly, external fraud is an act intended to defraud misappropriate property or circumvent the law by an external party. Thirdly, employment practices and workplace safety is an act inconsistent with employment, health or safety laws or agreements, from payment of personal grievance claims, or from diversity/discrimination events. Fourthly, are clients, products and business practices that is an unintentional or negligent breakdown to meet a professional obligation to specific clients including fiduciary and suitability requirements), or from the nature or design of a product. Fifthly, are damages to physical assets, in form of a loss or damage to physical assets from natural disaster or other events. Sixthly, is business disruption and system failures, which may be in form of disruption of business or system failures. Lastly, execution, delivery and process management that entails a failed transaction processing or process management, from relations with trade counter parties and vendors (Eladlouni, Ezzahid, & Mouatassim, 2011).

According to Njogo (2012) operational risk is the potential financial loss that could be attributed to breakdown in daily operational processes. This risk could also emanate from due to failure to comply with laws, regulations and policies governing fraud or forgery. This constitutes direct and indirect losses as a result of inadequate or failed internal processes, systems and people, or from external event. Banks intermediation function could lead to varying forms of loan mismatches that could culminate in market risk to liquidity risk. This study operationally defines operational risk as risk that result in involves direct or indirect losses banks face as a result of deficient or abortive internal processes, people and systems, or emanate from factor that are external to their operating environment.

Muriithi and Muigai (2017) analyzed the impact of banks operational risk and profitability in Kenya for the period 2005 to 2014. Bank operational risk is measured by cost income ratio, while profitability is measured by return on equity. The study used random effects estimation and Generalized Method of Moments (GMM) for data analysis. The study found that bank cost to income has negative effect on bank profitability in long run and short run. Macha (2010) assessed operational risk management in Tanzania, the study established that there are varying forms of cash operation risks faced by banks, which include lack of integrity among bank staff and the nature banks customer cash operation.

John, Simamora and Oswari (2019) determined the effects of operational and liquidity risks on listed banks financial performance in Indonesia for the period 2009 to 2017 using multiple linear regression. The study found that operational and liquidity risks negatively significantly affected banks financial performance.

2.5.7 Loan Loss Provision

Karimiyan, Nasserinia and Shafiee (2013) affirm that loan loss provision is an expense for the banks to account for their future losses, and it is reserved for their loan defaults. Otieno, Nyagol and Onditi (2016) view loan loss provision as a balance sheet account that measure bank's optimal estimate of future loan losses. Bank loan loss coverage ratio is an indicator of bank level of protection against future losses. A high provision ratio indicates the bank can optimally withstand future losses, including unexpected losses that could exceed loan loss provision. The loan loss provision coverage ratio is measured $\text{pre-tax income} + \text{loan loss provision}$ divided by net charge-offs (Giulio, 2014 in Otieno, Nyagol & Onditi, 2016). Banks employ loan loss provisions to build reserves to hedge against expected losses embedded in their loan portfolios (Muriithi, 2016). Isa, Choong, Fie and Rashid (2018) see loan loss provision as provision made against future defaulted loans. Since LLP is seen as an

expense for the banks to account for their future losses, and it is reserved for banks loan defaults as argued by Karimiyan, Nasserinia and Shafiee (2013) therefore, this could have influence on the any risk associated with the performance of the banks thus, it could moderate the relationship between risk and performance of the banks. Thus, the study variables are conceptualized in Figure 2.1 below:

2.6 Research Framework of the Study

Research framework is a skeleton that shows the focus of the study where all the variables including their roles must be clearly presented provided the framework is adequate. Thus, Figure 2.1 below is the framework for this study as seen below:

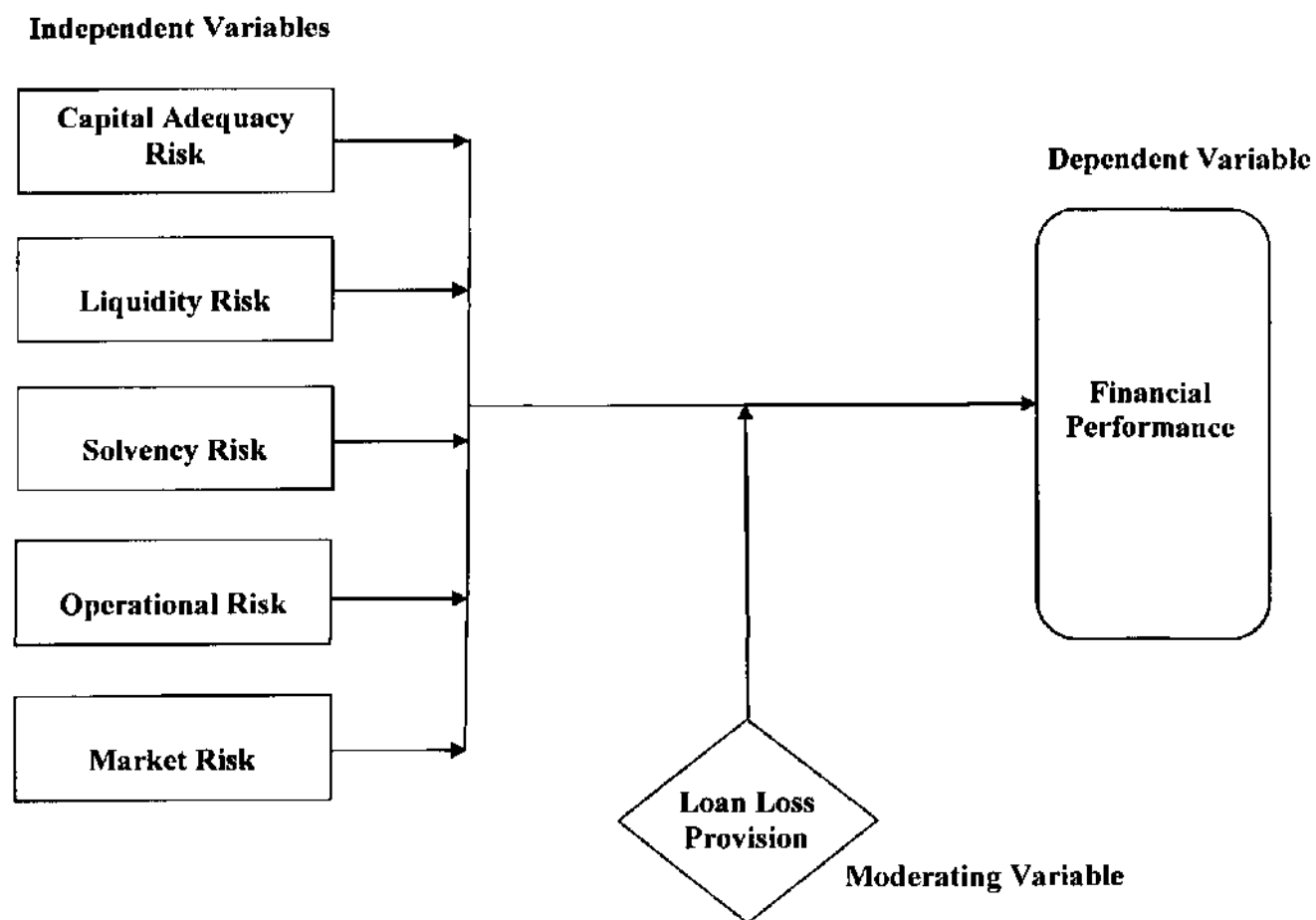


Figure 2.1: Research Conceptual Framework

From figure 2.1 above, there are five independent variables which include capital adequacy, liquidity, solvency, operational and market risks. As seen in research framework, change in loan loss provision serves as moderator and the study dependent variable as seen in the framework is banks performance which could be measured in either ROA or ROE.

The framework clearly shows the direct relationships that exist between each independent variable, which include capital adequacy, solvency, liquidity, operational and market risks, while the dependent variable is measured by financial performance. In addition, the frame also shows that loan loss provision moderates the relationship between capital adequacy, liquidity, solvency, operational and market risks, and the performance of dependent variable.

2.7 Review of Empirical Literature

Financial performance is an indicator for banks performance which is quantified by total bank assets and profitability measured by PAT, ROA, ROE, NIM, ROCOE and EPS. The empirical literature of risk factors affecting financial performance of banks are as follows.

2.7.1 Capital Adequacy Risk and Financial Performance of Banks

Bank with high capital adequacy ratio is capable of increasing its profit, investments and vice versa. Mathuva (2009) assessed the influence of bank capital adequacy, cost income ratio on profitability of commercial banks in Kenya from 1998 to 2007. The secondary data were analyzed and interpreted using varying financial ratios and statistical analytical techniques such as descriptive statistics, trend analysis, regression and correlation. The study reveals that the cost-income ratio is negative and strongly significant with profitability measured by ROA and ROE. The study concludes that an increase in capital may raise expected earnings by reducing the expected costs of financial distress. However, the study was conducted in Kenya and time series data of 10 years ended year 2007.

Antonina (2011) investigated the determinant of profitability on samples of largest 10 banks (Domestic and foreign ownership) profitability from 2005 to 2009 in Ukraine. The study used panel data estimation with the aid of STATA statistical package. The econometric results reveal that capital adequacy has significant positive effects on bank profitability. Credit risk, has significant negative effects on banks profitability while administrative expenses, liquidity and GDP have insignificant negative effects on the profitability of banks in Ukraine. However, the findings cannot be generalized in wider perspective due to limited scope. Nzioki (2011) studied the impact of capital adequacy on the financial performance of commercial banks quoted at the Nairobi Stock Exchange from 2004 to 2009. The result regression result shows that capital adequacy contributes positively to the profitability of commercial banks. Therefore, it is paramount for banks to have a sound capital base in order to remain competitive and maintain the confidence of its customers. However, the study used time series data of eight years which is grossly inadequate. The ongoing study uses time series data of 30 years. Ali, Akhtar and Ahmed (2011) studied bank specific and macroeconomic indicators that determine commercial banks profitability in Pakistan from 2006 to 2009. The Return on Assets (ROA) and Return on Equity (ROE) are used as a measure of profitability. The regression result indicates that capital and credit risk have significant negative effect on banks profitability measured by ROA. But the study failed include other risk factors such market risk among its model.

Mathuva (2013) examined capital adequacy, cost income ratio and performance of commercial Banks in Kenya from 1998-2007. The regression result shows that bank risk based capital has positive relation with bank profitability. On the other hand, cost-income ratio has negative relationship with bank profitability. However, the study reports correlation relationship and not causality relationship among the study variables which is better. Asikhia

and Sokefun, (2013) studied capital adequacy and banks profitability in Nigeria from 2006 to 2010. The findings of regression statistic show capital adequacy has positive and significant relationship with profitability of banks. But the study made use of time series data of 5 years. Ikpefan (2013) revealed that capital adequacy risk has negative impact on profitability of banks measured be ROA. But the time series data ended in year 2006. John and Oke (2013) investigated the impact of capital adequacy on the performance of the Nigerians Banks from 2003 to 2007. The study result shows that capital adequacy has influence on bank performance. The study recommends that the CBN should lay emphasis on banks' capitalization as a determinant of banks performance. However, the study made use of time series data of 5 years.

Aremu, Ekpo and Mustapha (2013) studied determinant of banks' profitability in Nigeria from 1980 to 2010. Data were collected from First Bank of Nigeria Plc and regression statistics tool for analysis. The results reveal that cost efficiency did not significantly determine bank profitability in Nigeria. However, credit risk (loan loss provision/total assets) and capital adequacy (equity/total Assets) significantly determine bank profitability both in the long run and short run respectively. Also, liquidity has significantly effect on bank profitability in the run. However, the study sampled only a bank for investigation and the results cannot be generalized on other banks in Nigeria and beyond.

Ayu, Purnamawati and Si (2014) examined the effect of capital and liquidity risk to profitability on conventional rural banks in Indonesia from 1980 to 2013 (33 years). The regression results show that the risk capital ratio and liquidity ratio have a positive and significant effect on profitability (ROA) of conventional rural banks in Indonesia. But, the findings of this study may not be applicable to other nations due to limited scope.

Jabbar (2014) examined the determinants of banks profitability among 31 sampled commercial banks operating in Pakistan from 2009 to 2012. The analysis was conducted using panel data estimation technique of common, fixed, random effect model. The results of the study reveal that capital and large size have significant positive effect on banks profitability. Loan loss provision, deposit growth and interest expense have insignificant negative effect on banks profitability in Pakistan. However, the study was carried out in Pakistan and failed to examine other risk factors such as operational risks that may determine bank profitability.

Agbeja *et al.*, (2015) studied capital adequacy ratio and bank profitability in Nigeria from 2010 to 2014. The regression result indicates that capital adequacy has significant positive influence on bank profitability. But the study failed to consider other risk factors that may affect profitability of banks in Nigeria. Lenee and Sulaiman (2016) investigate the capital adequacy measures and bank financial performance in Nigeria from 2008 to 2012. The result shows that capital adequacy strongly and actively stimulates and improves the financial performance of banks in Nigeria. The study recommends that bank managers should improve on the management of bank deposits and assets, introduce adequate short-term investment into the portfolio of banks in order to improve the financial performance of the banks. But the study utilized time series data of 5 years. Mendoza and Rivera (2017) investigated the effect of credit risk and capital adequacy on the profitability of sampled 567 registered rural banks in the Philippines. The regression result shows that capital adequacy has no significant impact on the profitability. On the other and, credit risk has a negative significant impact on the profitability of rural banks in the Philippines. However, the study is on rural banks in Philippines and the present study is on commercial banks in Nigeria.

2.7.2 Liquidity Risk and Financial Performance

Ahmed and Nauman (2012) studied effect of liquidity risk on performance of banking system in Pakistan banks from 2004 to 2009. The regression results indicate liquidity risk has negative and significant effect on bank performance measured by profitability. The study recommends that economic factors contributing to liquidity risk should be considered for further studies. However, the research was conducted in Pakistan and the findings cannot be generalized in wider perspectives. Siaw (2013) examined the effect of liquidity risk and its effect on the profitability of 22 banks in Ghana from 2002 to 2011. The study used unbalanced data set and random effects GLS regression based on the Hausman test. The regression result shows that liquidity risk (total loan/total asset) has significant positive effect on Return on Asset (ROA) as a measure of bank profitability in Ghana. The study suggests that banks should institute strategies that provide effective diversification in the sources of funding as they are mobilizing deposits liabilities. However, the study was conducted in Ghana and findings may not be applicable in wider perspective. Maaka (2013) assessed the relationship between liquidity risk and financial performance of 33 commercial banks in Kenya from 2008 to 2012. Result of multiple regressions result shows that liquidity risk has negative and significant effect on profitability of the commercial bank in Kenya. But the study sampled 33 commercial banks in Kenya and result cannot be generalized to other nations. Sushil and Bivab (2013) examined the determinants of liquidity and their impact on financial performance in Nepalese commercial banks. Multivariate linear regression model is used to include Liquid Assets to Total Assets Ratio, Loan to Deposit & Short Term Financing and Return on Assets for the data of six commercial banks in the sample covering the period from 2002/03 to 2011/12. The result shows liquidity premium paid by borrowers had positive and insignificant impact on financial performance of Nepalese commercial banks. But the research sampled only six selected Nepalese commercial banks.

Wambu (2013) investigated relationship between profitability and liquidity of commercial banks in Kenya. Data were collected from 40 commercial banks in Kenya for period of 2008 to 2012. The estimated regression result found that liquidity ratio has positive and insignificant influence on ROA as a measure of profitability of commercial banks in Kenya. The study failed to report causality relationship among the study variables. However, the data of study ended in year 2013 and it was conducted in Kenya and not in Nigeria. Ibe (2013) investigated the impact of liquidity management on the profitability of banks in Nigeria. Data were collected from randomly selected three (3) banks from the industry for the period 1995 to 2010. The result of the simple regression shows liquidity (cash and short term fund, bank balance, treasury bills and treasury bills certificates) has relative strong relationship with banks profitability as the lowest R square is 0.41 and highest is 0.97. The study therefore recommends that banks should engage competent and qualified personnel in order to ensure that right decisions are adopted especially with the optimal level of liquidity and still maximize profit. But the study sampled only 3 banks using simple regression as a tool for analysis instead of multiple regression. Larrey, Antwi and Boadi (2013) assessed the relationship between liquidity and profitability of listed banks in Ghana. The study sampled seven out of eleven banks listed on the Ghana Stock Exchange from 2005 to 2010. The result of simple regression shows a very weak positive relationship between the liquidity and the profitability of the listed banks in Ghana. However, the study sampled seven banks out of nine listed banks in Ghana Stock Exchange which is inadequate.

Ali (2015) examined the effect of the liquidity management on profitability in the Jordanian commercial banks. The study used panel data of 13 Jordanian Banks from 2005 to 2012. The empirical results show that capital and liquidity have significant effect on banks profitability. It was recommended that there is a need for an optimum utilization of the available liquidity should be emphasized. But the study used only 13 sampled banks in Jordan and the outcome

cannot be used for generalization even in the country of study. Azureen & Saeed (2015) empirically analyzed the effect of liquidity risk on the performance of Malaysia banks from 2005 to 2013. The research sampled twenty-one (21) out of twenty-seven (27) commercial banks in Malaysia after applying data filtering criteria. The multiple regression result shows that liquidity (loan to total asset) and capital (total equity to total assets) have significant effect on banks performance measured by profitability (ROA and ROE) in Malaysia. But, the study was carried out in Malaysia and findings cannot be generalized in wider perspective.

Olarewaju and Adeyemi (2015) examined causality relationship between liquidity and profitability of 15 sampled DMBs in Nigeria from 2004 to 2013. The finding shows that there is no causal relationship (both unidirectional and bidirectional) between total loan and advances to total deposit (a proxy for liquidity) and ROE (profitability measure) for banks. However, the study made use of ROE as a measure of performance. The ongoing study shall use ROA because it is used mostly by the previous academic scholars as return on investment.

Ly (2015) empirically investigated the impact of liquidity, regulation, and supervision on the performance of banks in 27 European Union (EU) countries. Panel data were drawn from 4,114 banks for the period ranging 2001 to 2011. Regression output result indicates negative and statistically significant relationship between liquidity risk and bank performance in EU countries. But the study was conducted in European Union (EU) countries which Nigeria is excluded.

2.7.3 Solvency Risk and Financial Performance

Solvency risk known as leverage risk involves the use of debts or borrowed funds to finance the operations of banks for profitability purpose. Ezeji (2012) empirically analyzed the effect

of financing leverage on performance of six sampled banks in Nigeria from 2005 to 2009. The regression result shows leverage financing (debt/equity ratio) has mixed effects on bank performance (EPS) among the sampled DMBs in Nigeria. But study sampled only six DMBs. Muchugia (2013) studied the effect of debt financing on profitability of commercial banks in Kenya from 2008 to 2012. The findings show that there is positive relationship between short term debt and profitability. On the other hand, there is negative relationship between long term debt and profitability in banks in Kenya. The study recommends that owing to the less cost incurred in obtaining short term loans than long term ones, banks should go for short term loans. However, the study made use of time series data of five years.

Abubakar (2015) empirically studied the relationship between financial leverage and financial performance of eleven DMBs from 2005 to 2013. The findings indicate that there is no significant relationship between debt ratio and financial performance measured by profitability. But the study sampled eleven banks to make generalization of findings. Edson (2015) investigated the effect of financial leverage on commercial banks' profitability in Tanzania. The finding shows that debt financing has negative effect on profitability measured by average ROA. But research was conducted in Tanzania and not in Nigeria.

Julius, Barine and Oluwatosin (2015) studied capital structure and financial performance of 10 quoted banks in Nigeria from 2005 to 2012. The correlation result shows debt has significant relation with significant positive relationship with the financial performance of Nigeria quoted banks. However, the study utilized time series data of 10 years.

Shaba, Yaaba and Abubakar (2015) examined capital structure and profitability of 13 sampled DMBs in Nigeria from 2005 to 2014. The result shows that there is relationship between borrowed funds on profitability of the banks in Nigeria. But the study made use of

only 13 sampled banks. Kumari (2015) investigated the effect of capital structure on profitability of Portugal and Spain from 2003 to 2013. The regression result indicates that there is negative and significant impact of leverage ratios on profitability ratio. However, the findings cannot be generalized in wider perspective due to limited scope. Hailu (2015) studied the impact of capital structure on profitability of eight sampled commercial banks in Ethiopia from 2012 to 2013. The findings reveal that debt to asset ratio has negative and significant impact on profitability of commercial banks. The research recommends assessing the overall performance of banks by regulatory agencies. But the research made use of only eight sampled banks.

Dahiyat (2016) examined how liquidity and solvency affect profitability in Jordan from 2012 to 2014. The regression results show liquidity has a negative (inverse) significant impact on profitability and solvency has a no significant impact on profitability. However, the study was conducted in Jordan using 4 years of panel and time series data that is grossly inadequate.

Sadiq, Kachollom, Dasuki and Yusuf (2017) examined effect of capital structure on the performance of four sampled DMBs. The result indicates that debt to equity ratio has significant effect on the financial performance of listed deposit money banks in Nigeria. But the study sampled four DMBs which is small.

Eniola, Adewunmi and Akinselure (2017) empirically assessed the impact of capital structure on the profitability of selected five quoted banks in Nigeria from 2004 to 2015. The result of the analysis reveals that there is positive and significant relationship between debt financing and bank performance. However, the study randomly selected five banks for investigation. Siddik, Kabiraj and Joghee (2017) investigated impacts of capital structure on performance

of 22 sampled banks in Bangladesh from 2005 to 2014. The results of the Pooled Ordinary Least Square Analysis show that short term debt financing and long term debt financing has negative and significant effects on bank performance measured by ROA. But the study was done in Bangladesh and findings cannot be generalized in wider perspectives.

2.7.4 Market Risk and Financial Performance

The fluctuation and stability of market determined interest rates affect the financial performance of DMBs. Okoye and Richard (2013) examined how bank lending rate affects the performance of Nigeria deposit money banks for the period 2000 to 2010. The study used secondary data and regression result shows that the lending rate has significant and positive effects on the performance of Nigerian banks. But the study only considered market risk measured by bank lending and neglected other risk factors such capital, credit, liquidity and solvency risk.

Odeke and Odongo (2014) investigated the relationship between Interest rate risk exposure and financial performance of commercial banks in Uganda from 2009 to 2014. The regression result indicates that interest rate risk exposure has positive relationship with bank performance in Uganda. However, the scope is limited to Uganda. Ndichu (2014) investigated effect of interest rate spread on financial performance of sampled 4 Microfinance banks in Kenya from 2010 to 2013. The study reveals that interest rates spread negatively affect the financial performance of deposit taking in microfinance banks. However, the research made use of microfinance banks and the present study utilizes commercial banks or DMBs.

Malik, Khan¹, Khan², Khan³ (2014) studied interest rates and its effect on bank's profitability from 2008 to 2012 in Pakistan. The results show that the interest rate has more

effects on bank profitability measured by ROA and ROE in private and public sector banks of Pakistan. However, the study used time series data of 4 years which is inadequate.

Sattar (2014) studied impact of interest rate changes on the profitability of four major commercial banks in Pakistan from 2008 to 2012. The result of Pearson Correlation indicates that there is strong and positive correlation between interest rate and commercial banks profitability. It means if the value of interest rate increases/decreases as a result, value of banks' profitability also increases/decreases. However, the study sampled only four banks which may be inadequate.

Obidike, Ejeh, Ugochukwu (2014) assessed the impact of interest rate spread on the performance of Nigerian banking industry for the period of 1986 to 2012. The result shows that interest rate spread negatively, significantly impact on bank performance in the long-run. Moreover, at the short-run, interest rate spread also negatively but insignificantly affect bank performance in Nigeria. The study recommends that banks should not rely only on interest income if they must continue in business. But the utilized interest spread is difference between deposits and lending rate.

Fapetu and Kolapo (2015) studied influence of interest rate risk on the performance of Deposit Money Banks (DMBs) in Nigeria from 2002 to 2011. The regression result shows interest rate risk is found to have insignificant effect on bank performance. However, the study made use of times data of 10 years that ended in year 2011. Maigua and Mouni (2016) studied influence of interest rates determinants on the performance of commercial banks in Kenya. The study sampled 26 out of 43 commercial banks operating in Kenya. The regression result indicates that interest rate (discount rates or monetary policy rates) have positive influence on performance of commercial banks. The study recommends that the

commercial banks management should strategize on the best way to set up discounts rates for their banks as this will go a long way in dictating the borrowing and lending culture of the commercial banks in Kenya and in return enhance their performance. But the research did not indicate the period the data were collected.

Wambari and Mwangi (2017) investigated effect of interest rates on the financial performance of 43 sampled commercial banks in Kenya from 2002 to 2014. The study shows that lending rate ratio has positive and significant effect on financial performance of commercial banks. On the other hand, deposit interest ratio has negative and significant effect on performance of commercial banks. However, the study uses time series that were not subjected to stationarity test. Ndubuaku, Ozioma, Chiaka, Samuel (2017) examined impact of monetary policy (interest rate) regimes on the performance of the banking sector in Nigeria from 1986 to 1999. The result of t- test statistic shows that monetary policy rate did not have significant impact on the performance of banks measured by total assets value. However, the study used total asset value as a measure of performance.

2.7.5 Operational Risk and Financial Performance

Operational risk generates operational losses and the losses generated are a cost to the bank. Krakah and Ameyaw (2010) investigated determinants of bank's profitability in Ghana. The study sampled two banks namely, Merchant Bank (MBG) and Ghana Commercial Bank (GCB) from 1990 to 2009. The result shows that interest-free income, interest-free expenses and capital strength are significant key drivers of the banks' profitability. Besides, provisions for bad debt do not have significant impact on the banks financial performance in Ghana. However, only two banks were sampled and the findings cannot be generalized even in Ghana.

Olweny and Shipho (2011) evaluated the effects of banking sectoral-factors on the profitability of 38 sampled commercial banks in Kenya from 2002 to 2008. The results of the study reveal that profitable commercial banks are those that strive to improve their capital bases, reduce operational costs, improve assets quality by reducing the rate of non-performing loans, employ revenue diversification strategies as opposed to focused strategies and keep the right amount of liquid assets. But the research was conducted in Kenya.

Ali, Akhtar and Ahmed (2011) studied bank specific and macroeconomic indicators that determine commercial banks profitability in Pakistan in from 2006 to 2009. The Return on Assets (ROA) and Return on Equity (ROE) are used as a measure of profitability. The regression result reveal that operating efficiency has negative effect on banks profitability in Pakistan. But the study was conducted in Pakistan and time series data ended in 2009.

Ferrouhi (2014) analyzed the relationship between liquidity risk and financial performance of Moroccan banks from 2001–2012. The regression results indicate that banks liquidity significantly determined the performance of Moroccan banks. But the study failed to investigate other predictors like capital adequacy risk, solvency risk and market risk that may influence bank profitability. Lyambiko (2015) assessed the effect of operational risk on the financial performance of commercial banks in Tanzania, using 36 commercial banks from 2008 to 2013. It was revealed that operations uncertainty has positive and insignificant effect on financial performance of commercial banks in Tanzania. However, the study finding is limited to Tanzania.

2.7.6 Loan Loss Provision and Financial Performance

Karimiyan, Nasserinia and Shafiee (2013) observed the relationship between loan loss provision and future earning among 12 commercial banks in Malaysia for the period of 2004-

2011. Otieno, Nyagol and Onditi (2016) examined the relationship between credit risk management and financial performance of 6 sampled microfinance banks in Kenya from 2011 to 2015. The result of GMM technique of estimated multiple regression shows that loan loss provision coverage ratio has significant positive effect on ROA but significant negative effect on ROE as a measure of banks performance.

2.7.7 Moderating Role of Loan Loss Provision and Financial Performance

Empirical literature concerning moderating effect of loan loss provision on the relationship between risks and the financial performance of commercial banks are relatively few. Karimiyan *et al.* (2013) studied the relationship between loan loss provision and future earning, return and cash flow in Commercial Banks of Malaysia from 2004 to 2011. There is statistically significant positive relationship between the loan loss provision and future earning and change in return. However, there is positive relationship between loan loss provision and future cash flow in Commercial Banks of Malaysia.

Otieno *et al.*, (2016) studied relationship between credit risk management and financial performance of 6 sampled microfinance banks in Kenya from 2011 to 2015. The result of GMM technique of estimated multiple regression shows that credit risk management with portfolio at risk and loan loss provision coverage ratio have strong negative relationship with microfinance banks performance (ROA and ROE). The study recommended that credit managers should operate under a sound credit granting process with well-defined credit-granting criteria detailing the microfinance banks' target market. However, the study sampled microfinance banks and not commercial banks that have large credit risk management. Again, bank size was used as moderating variable. Isa, *et al.*, (2018) assessed determinants of loan loss provisions among 12 commercial banks in Malaysia from 1997 to 2014. The result revealed that credit risk management has strengthen moderating relationship

on the effect of non-performing loan, interest income, net profit, loans and advances and Gross Domestic Product on loan loss provision. However, the sampled 12 commercial banks in Malaysia. This study sampled 15 commercial banks in Nigeria.

Gadzo, Kportorgbi and Gatsi (2019) investigated credit risk and operational risk on financial performance among 24 universal banks in Ghana from 2007 to 2016. The study found that moderating variables (asset quality, bank leverage, cost to income ratio and liquidity) significantly influence credit risk, operational risk as well as the financial performance of the universal banks positively. The study recommends that banks be encouraged to cut-down their lending rates in order to decrease credit risk and subsequently boost profitability. The study was conducted in Ghana using credit risk and operational risk. This research is conducted in Nigeria utilizing five risk factors and loan loss provision as moderating variable linking profitability of commercial banks.

Johnson (1997) uses loss provisions to proxy reputation in bank monitoring abilities, arguing that a change in loan loss provisions indicates a change in management's assessment of loan portfolio quality and/or a change in monitoring and screening abilities.

2.8 Theoretical Framework

This study used Agency theory to underpin the response variable which is financial performance of the commercial banks. The financial performance of the commercial banks is measured by profitability which depends on risk factors being managed by the managers who are the employees. This is because the activities of the managers who are agents of the commercial banks have linkage with the profitability. If the banks are well managed by the agents, the profitability may increase and vice versa. The agents who are the managers of the

banks act on behalf of the owners who are the shareholders. At times, the decisions and actions of the managers may affect the profitability of the banks.

The Agency theory suggests that a firm can be viewed as a nexus of contract between the ownership and control (Jensen & Meckling, 1976; Pervan & Visic, 2012). An agency relationship arises whenever one or more persons called principal (shareholders) hire one or persons called agents (employees). The primary relationship is between the shareholders and the managers but the relationship may be between shareholders and debt-holder(s) in the event of the firm's bankruptcy. The owners (shareholders) perform some services and delegate decision making authority to the agents that may affect the profitability of the commercial banks. The relationship is not harmonious because of agency conflicts or conflicts of interest that may arise between the agent and the principal. First, the principal as well as agent pursue to maximize their own interest. Second, the interest of the agent (such as prestige, better pay and allowances) may diverge from the interest of the principal which is profit maximization. This is because the agent is not likely to perform in the best interest of the principal (Jensen & Meckling, 1976; Adebayo & Oluwaremi, 2017). When agency conflicts occur, it tends to increase agency costs. Agency costs are expenses incurred to sustain an affective relationship such as offering performance bonuses to encourage managers to act in the best interest of shareholders. The Agency theory assumes the separation of ownership from control. The ownership of the company is the shareholders while the business is managed or controlled by the managers. Hence, a conflict of interests may emerge between the principal and the agent.

The causes of agency conflicts are limited earnings as managers are concerned for their compensation while creditors look for the interest amount only. Two, information asymmetry as managers look for information while owners rely on manager's information, which may

not reach in, exact way. Third, managers work in good faith and they are not aware of risks attached to investment decision by the owners. Lastly, the major shareholders take decision on retain earning which is part or whole of the profit of the organization. This is done with the intention not to risk future profitability as against payment of dividends to shareholders. Managers may not like it as payment of dividend determines the value of the firms to investors (Panda & Leepsa, 2017).

One benefit of adopting and applying this Agency theory in the commercial banks is to maximize the potentials of the agents in the banks. To maximize the abilities of the agents, they should be motivated to perform or even go beyond their managerial roles. The ultimate benefit of the motivation is being experienced through the maximization of shareholder's wealth that leads to high profitability. The second benefit of adopting the Agency theory is that shareholders try to minimize agency costs as it has direct relationship with the financial performance of the commercial banks. Lastly, the application of the Agency theory is useful in the concept of utility maximization. This is because the theory is used to maximize skills and potentials of agents that work for the profitability of the banks.

The criticisms of Agency theory among others are that the positivist researcher only concentrate on agent side of problem neglecting the principal problem. This led to the discovery of Behavioural Agency. The Behavioural Agency theorists argued that standard agency theory only emphasises on the principal and agent conflict as well as agency cost. But the Behavioural Agency theory realign both parties' interest to minimize the agency problem that may affect the organization's performance (Panda & Leepsa, 2017). Therefore, the Agency theory is applicable to banking business because the financial performance of banks is measured by profitability, which is determined by the decisions and actions of the agents

and principal. Scholars such as Pervan & Visic,(2012); Adebayo and Oluwaremi (2017); Darayseh and Chazi (2018) applied the Agency theory in their various research works.

2.9 Summary

This chapter discussed the relevant literature in respect of capital adequacy risk, liquidity risk, solvency risk, market risk as well as operational risk as explanatory variables of the study. Meanwhile, loan loss provision is also discussed as moderating variable. This is in addition to the performance measured as ROA and ROE as the dependent variables of the study.

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

This section presents the methodology that was used for the study by considering specifically, the research design, population, sample size and sampling technique, sources and instrument of data collection, data analysis technique, measurement of the study variables and model specification for the study.

3.2 Research Design

This study is quantitative in nature using ex post factor research design. The said relationship explains the influence of independent variables on the dependent variable. This design is also used to describe the statistical relationship between two or more variables. It is considered more appropriate because it allows for testing the expected relationships between the explanatory variables and response variable of the performance of listed commercial banks in Nigeria. The explanatory variables are capital adequacy risk, liquidity risk, solvency risk, market risk and operational risk which are moderated with loan loss provision. On the other hand, response variable is financial performance as measure by profitability using accounting ratio of ROA and ROE. This is because the ROA and ROE are measures of return on investment.

3.3 Population, Sample Size and Sampling Technique

The population of this study is fifteen (15) listed commercial banks in the Nigerian Stock Exchange as at 31st December, 2018. However, the study employed two data filtering criteria to arrive at the population of this study. The first one expects the bank to be listed on the Nigerian Stock Exchange and have a data for the study period ranging from 2007 to 2018. The choice of this duration for the study is because it was the period of mixed

regulations that pose serious risks to banking sector in Nigeria. This is because it was within this period that banks faced various risks due to increase in capital requirements which resulted in merger and acquisition of banks. This period is also post banking consolidation era (Somoye, 2008). Year 2007 was chosen as base year of the study because it was the beginning of full banks consolidation period in Nigeria. Also, year 2018 was chosen as the end period of the study to ensure that there is availability of published financial statements for the sampled banks.

The second filter was to ensure that the commercial banks must be listed on the Nigerian Stock Exchange and the banks must not be delisted throughout the period ranging from 2007 to 2018. The working population of this study becomes twelve (12) commercial in Nigeria (See appendix I). This is because their data are readily available from the published financial report of the company, and the Nigerian Stock Exchange fact book for the year under study. Therefore, this study use census population of twelve commercial banks which constitutes the sample frame. Two listed banks Heritage and Jaiz banks were listed post consolidation while Unity Bank had incomplete bank statement for the period of the study.

3.4 Sources and Methods of Data Collection

The data for this study were obtained from secondary source. Secondary data were extracted from the Nigerian Stock Exchange fact book. The data of the study variables were extracted from the Nigerian Stock Exchange fact book. The study variables are financial performance, capital adequacy risk, liquidity risk, solvency risk, market risk and operational risk which are moderated with loan loss provision. The data of the study variables are time series elements which were subjected to stationarity test using unit root test to avoid false regression results. This is because time series data have problem of autocorrelation over time.

3.5 Technique for Data Analysis

This study used Panel Corrected Standard Error Model, this is due to the presence of heteroscedasticity in the model where fixed effect is chosen using Hausman test based on the Multiple Regression technique where a test of hypotheses is conducted and the study draw conclusions based on the findings of the study. The choice of the multiple regression technique was because the data of the study variables are panel and time series in nature. The balance panel data method is used as it has the feature of both time series and cross-sectional. The time series feature is as a result of the data extracted from twelve listed banks on Nigeria Stock Exchange for period ranging from 2007 to 2018.

Some important statistical diagnostic tests were conducted before running the data in STATA version 13 to produce regression output. The regression output which is the multiple regression results are analyzed and hypotheses tested. Decision rule is that the research rejects the null hypotheses if the results of this study are significant at 1% (0.000 – 0.009); 5% (0.010– 0.049) and 10% (0.050 – 0.099). Otherwise, the research fails to reject the null hypotheses because no sufficient reasons for rejection.

3.6 Justification of the Technique for Data Analysis

This study is a quantitative research that requires the use of secondary data which were extracted from the Nigerian Stock Exchange fact book. The secondary data was subjected to unit root test to ascertain whether the study variables are stationary at levels. Stationarity test is requirement for time series data. Data of this nature are better analysed using regression to draw conclusion after testing the hypotheses. This is consistent with the research works of Ndichu (2014); Idowu (2014); Ayu *et al.*, (2014); El-Massah and Al-Sayed (2015); Lenee and Sulaiman (2016); Dahiyat (2016); and Wambari and Mwangi (2017).

3.7 Model Specification and Measurements of the Study Variables

This study employed multiple regression and the model consists of seven study variables that include financial performance, capital adequacy risk, liquidity risk, solvency risk, market risk and operational risk which are moderated with loan loss provision. The model was adopted from the study of Muriithi *et al.* (2016) conducted in Kenya. This is because the study used ROE as the response variable while this study uses both ROA and ROE. Again, the study made use of explanatory variables like credit risk (Asset Quality Ratio-AQR); market risk (Degree of Financial Leverage-DFL); operational risk (Cost Income Ratio-CIR) and liquidity risk (Net Stable Funding-NSFR) as well as control variable bank size (See the Muriithi *et al.* (2016) model: $ROE = \beta_0 + \beta_1 AQR + \beta_2 DFL + \beta_3 CIR + \beta_4 NSFR + \beta_5 SIZE + e$).

Thus, the model of this study is shown below after the modifications:

$$FP = \beta_0 + \beta_1 CAR_{it} + \beta_2 LR_{it} + \beta_3 SR_{it} + \beta_4 MR_{it} + \beta_5 OR_{it} + \beta_6 LLP_{it} + e_{it} \dots\dots\dots (1)$$

The loan loss provision is used as moderating variable between independent variables with dependent variable as shown below:

$$FP_{it} = \beta_0 + \beta_1 CAR_{it} + \beta_2 LR_{it} + \beta_3 SR_{it} + \beta_4 MR_{it} + \beta_5 OR_{it} + \beta_6 LLP_{it} + \beta_7 CAR_{it} \times LLP_{it} + \beta_8 LR_{it} \times LLP_{it} + \beta_9 SR_{it} \times LLP_{it} + \beta_{10} MR_{it} \times LLP_{it} + \beta_{11} OR_{it} \times LLP_{it} + e_{it} \dots\dots\dots (2)$$

Where:

FP	=	Financial Performance measured by profitability using Return on
Asset	=	(ROA) and Return on Equity (ROE).
CAR	=	Capital Adequacy Risk
LR	=	Liquidity Risk
SR	=	Solvency Risk
MR	=	Market Risk
OR	=	Operational Risk
LLP	=	Change in Loan Loss Provision
CARxLLP	=	The Interaction between CAR and LLP

CRxLLP	=	The Interaction between CR and LLP
LRxLLP	=	The Interaction between LR and LLP
SRxLLP	=	The Interaction between SR and LLP
ORxLLP	=	The Interaction between OR and LLP
MRxLLP	=	The Interaction between MR and LLP
e	=	Error term
it	=	Panel Indicator
β_0	=	Constant (interceptor)
β_1-β_6	=	Beta coefficients of the Independent Variables.
β_7-β_{11}	=	Beta coefficients of the Moderating Variables.

From the model, it becomes necessary to estimate for both fixed and random effect. In addition, the following diagnostics test were conducted.

Normality tests were used to test whether the data is normally distributed for both the independent and dependent variables. Therefore, the normality of the data of study variables was conducted using skewness, kurtosis and Shapiro-Wilk statistical tests as well as histogram (Kiswara, 2010).

Multicollinearity tests was carried out to determine whether in the regression model there is a multicollinearity among the explanatory variables. This can be detected based on Tolerance Value (TV) and Variance Inflation Factor (VIF) (Ghozalim, 2007).

In addition, heteroscedasticity shall be carried out in order to find out whether there is residual inequality in the regression model from one observation to another. If the residual are similar from one observation to the other, it is called Homoscedasticity and if different, it is called Heteroscedasticity (Ghozalim, 2007).

The next test is Autocorrelation concerning time series data. Autocorrelation test enables the study to find out whether there is Autocorrelation in the time series data of the study variables. Autocorrelation arises due to successive observations over time related to each other or due to residuals that are not independent from one observation to another (Gujarati, 2003).

Hausman specification test was conducted to decide between the fixed and random effect model output. The Hausman (1978) usually form the bases for reliability to the researchers. It was designed to detect the violation of the assumption that the independent variables are orthogonal in each unit. It also gives information on the time ordering that allows for control of separate unobserved heterogeneity.

Table 3.1: Definitions and Measurements of the Study Variables

Code	Definition	Type	Measurement	Authors/Studies
FP	Return on Assets (ROA)	Dependent Variable (Financial performance measured by profitability)	Profit Before Taxes/Total Assets	It is a measure for ROA. The higher the ratio, the better the performance and assets utilization of the banks. This is in line with the research works of Ndichu (2014); Idowu (2014); Ayu <i>et al.</i> (2014); El-Massah and Al-Sayed (2015); Lenee and Sulaiman (2016); Dahiyat (2016); Wambari and Mwangi (2017) that measured profitability using ROA.
	Return on Equity (ROE)	Dependent Variable (Financial performance measured by profitability)	Profit Before Taxes/Shareholders' Equity	It is a measure for ROE. The higher the ratio, the better the performance because it is a measure of investment. This is in line with the research works of Ali, Akhtar and Ahmed (2011); Abiola and Olausi (2014); Alshatti (2015); Olarewaju and Adeyemi (2015); Otieno <i>et al.</i> (2016) and Muriithi <i>et</i>

				<i>al. (2016)</i> that measured profitability using ROE.
CAR	Capital Adequacy Risk	Independent Variable	Total Shareholders' Equity/Total Assets	Higher equity to asset ratio results in lesser need for external funding and therefore higher profitability. It expresses banks' financial strength in terms of owners' funds to total assets of banks. This is in agreement with the studies of Nzioki (2011), Ikpefan (2013); Ayu, Purnamawati and Si (2014); Agbeja <i>et al.</i> (2015); Lenee and Sulaiman (2016);Mendoza and Rivera (2017) that measured CAR using total shareholders' equity/ total assets.
LR	Liquidity Risk	Independent Variable	Total Loan/Total Deposits Liabilities	Higher ratio indicates that DMBs have less liquidity and more financial stress (risk). This is in line with research of Ayu <i>et al.</i> (2014); El-Massah and Al-Sayed (2015) that gauged liquidity risk using total loan to deposit
SR	Solvency Risk	Independent Variable	Total Debt/Total Assets or Long Term Borrowings/ Total assets	A bank with lower debt to asset ratio is considered less risky than a bank with higher ratio. This is in line with the study of Hailu (2015) that measured leverage using debt to total asset.
MR	Market risk	Independent Variable	Interest Rate in maximum lending rate as against minimum lending rate.	This study measures interest rate using maximum landing rates. This is in line with research of Malik <i>et al.</i> (2014) made us of market determined interest rate. Sattar (2014) used changes in interest rate.

OR	Operational risk	Independent Variable	Operating Expenses/Net Income	It measures costs in relation with net income. A reduction in costs for a given level of income will increased profits and vice versa. This is in line with research of Mathuva (2013); Muriithi <i>et al.</i> , (2016) that measured operating risk using cost income ratio.
LLP	Loss Provision	Independent and moderating variable.	It is the provision made against future defaulted loans.	It is measured as change in loan loss provision (Isa, Choong and Rashid, 2018), Johnson (1997).

In measuring the study variables, the dependent variable for this study is firm performance. That is, net income divided by book value of total assets would be used as the proxy for firm performance (see Table 3.1). This is because of its relevance in explaining the performance of the company to stakeholders and other prospective investors that need information concerning the firms.

The study also employed seven study variables namely, financial performance, capital adequacy risk, liquidity risk, solvency risk, market risk and operational risk which are moderated with loan loss provision (see Table 3.1).

3.8 Summary

The chapter discussed the relevant methodology used in the study such as research design, population of the study, sample size and sampling technique, sources and instrument of data collection, data analysis technique, measurement of the study variables, and model specification for the study. The research design adopted for this study is ex post factor research design using causality relationship. The causality relationship explains the extent at

which independent variables affect dependent variable. This design is also used to describe the statistical relationship between two or more variables.

The population of this study is fifteen (15) listed commercial banks in the Nigerian Stock Exchange as at 31st December 2018. However, the study employed two data filtering criteria to arrive at the working population of this study. The first one expects the bank to be listed on the Nigerian Stock Exchange and will have a data for the study period ranging from 2007 to 2018. The choice of this duration for the study is because it was the period of mixed regulations that pose serious risks to banking sector in Nigeria. This is because it was within this period that banks faced various risks due to increase in capital requirements which resulted in merger and acquisition of banks.

The data for this study [financial performance (ROA & ROE), capital adequacy risk, liquidity risk, solvency risk, market risk, operational risk and loan loss provision] were obtained from secondary source. Secondary data were extracted from the Nigerian Stock Exchange fact book. The data of the study variables are time series elements which were subjected to Stationarity test using Unit Root test to avoid false regression results. This is because time series data have problem of autocorrelation over time. This study employs multiple regression and the framework consists of seven study variables that include financial performance, capital adequacy risk, liquidity risk, solvency risk, market risk and operational risk which are moderated with loan loss provision. The framework was adopted from the study of Muriithi *et al.*, (2016) conducted in Kenya. This is because the scholar used ROE as the response variable while this study uses both ROA and ROE.

Normality tests were conducted to test whether the data is normally distributed for both the independent and dependent variables in the model. Therefore, the normality of the data of the

study variables were conducted using Skewness, Kurtosis and Shapiro-Wilk statistical tests, Multicollinearity tests, Heteroscedasticity test, Autocorrelation test and Hausman specification test.

After the important normality tests were conducted, the data were run in STATA version 13 to produce regression output. The regression output which is the multiple regression results are analyzed and hypotheses tested. Decision rule is that the research rejects the null hypotheses if the results of this study are significant at 1% (0.000 – 0.009); 5% (0.010 - 0.049) and 10% (0.050 – 0.099). Otherwise, the research fails to reject the null hypotheses because no sufficient reasons for rejection.

CHAPTER FOUR

DATA PRESENTATION AND ANALYSIS

4.1 Introduction

The chapter discussed the descriptive statistics of the variables which includes firm performance measured as ROA and ROE in addition to the corporate risk's variables. The corporate risk is composed of capital adequacy risk, liquidity risk, solvency risk, market risk operational risk and loan loss provision. In addition, the moderating variable Loan Loss Provision is also discussed. This is followed by the presentation and analysis of the descriptive statistics in which minimum, maximum, correlation matrix, presentation and discussion of multicollinearity and the post estimation tests of the study were all discussed. In addition, the results of the model estimations and the inferences drawn from the tests of the hypotheses are also discussed.

4.2 Descriptive Statistics

The following Table 4.1 presents the descriptive statistics where the minimum, the maximum the mean, the standard deviation, the skewness and the kurtosis of the data for the variables used in the study are described.

Table 4.1: Descriptive Statistics

Variable	Min	Max	Mean	SD	Skewness	Kurtosis
ROA	-0.5313	0.0701	0.0125	0.0587	-6.9199	58.942
ROE	-3.8662	2.0997	0.1327	0.4360	-4.1306	55.747
CAR	-5.8629	192.21	8.4629	16.238	10.289	115.79
LR	0.2728	1.1596	0.6505	0.1912	0.2315	2.4262
SR	-0.7892	1.3187	0.7379	0.3973	-2.7694	9.5433
MR	2.7171	2.9440	2.8265	0.0520	0.1657	3.9966
OR	-4.6255	820.64	22.937	95.489	5.5887	39.781
LLP	-6.6673	4.9986	0.0295	1.3841	-2.3491	14.275

Source: *Stata Output, 2013*

Table 4.1 reports the descriptive statistics for the dependent, independent as well as the moderating variables. While the dependent variable's performance is measured as return on assets and return on equity, therefore, the independent variables include; Capital Adequacy Risk, Liquidity Risk, Solvency Risk, Market Risk and Operational Risk as well as the moderating variable which is Loan Loss Provision. The result shows that the return on assets and return on equity of Banks in Nigeria has a mean value of 0.0125 and 0.1327 respectively. This implies that return on equity as performance measurement gives better chance for the firms to generate more profit than return on assets. In addition, the standard deviation for ROA and ROE are 0.0587 and 0.4360 respectively. This implies that, the variation among the data in the variables is not much since all the values of the standard deviation are closer to their mean values. Also, considering the minimum and maximum values of return on assets of - 0.5313 and 0.0701 respectively implies that the higher the minimum value is the higher than the minimum value of return on equity since the minimum value of ROE is - 3.8662. Meanwhile ROE maximum value is higher than the maximum value of ROA as seen in Table 4.1. Also, the peakness known as the kurtosis for both Return on Assets (ROA) and Return on Equity (ROE) are 58.942 and 55.747 respectively, suggesting that the values are not within the range of kurtosis assumption. Even though the data of the explained variables seems to be kurtosis, it therefore, is still subject to further analysis such as normality distribution of the model of the study. To consider normality further, the coefficient of skewness is considered for ROA and ROE which are -6.9199 and -4.1306 respectively and this implies that the data is moderately not skewed for all the measurement since the highest is less than -4.92 for ROA. Even though all the variables seem to be negatively skewed which is an indication of the left hand side of the normal curve; thus, the data is said to meet the symmetrical distribution assumption thus, indicating normality on skewness. The table also indicates that the Banks in Nigeria have average value of 8.4629 Capital Adequacy Risk with the minimum and maximum values of -5.8629 and 192.21 respectively. This implies

that banks in Nigeria can adequately absorb reasonable amount of loss in line with statutory capital requirements even though the minimum shows otherwise. Meanwhile the peakness of the data is indicated by the kurtosis value of 115.79 which is relatively high suggesting that the coefficient of kurtosis could be abnormal in the distribution of the data. Furthermore, the coefficient of Skewness of 10.289 implies that the data is positively skewed (that is, the data are on the right side of the normal curve), even though the data is skewed, it is still close to zero which implies that the data meet the symmetrical distribution assumption.

In addition, Table 4.1 indicates that Liquidity Risk shows an average of 0.6505 with minimum and maximum values of 0.2728 and 1.1596 respectively. This implies that an average of 65% of Liquidity Risk for Nigerian's Banks are liquid asset while the remaining 35% is non liquid assets. Going by the coefficient of kurtosis value of 2.4262 suggesting that most of the values are higher than mean, and the data meet a normal distribution assumption while the skewness value of 0.2315 implies that the data is not skewed which indicates most of the data are normal although close to zero thus, implying that the data meet the symmetrical distribution assumption.

Table 4.1 also shows the mean value of solvency risk as 0.7379 with minimum and maximum values of -0.7892 and 1.3187 respectively. This implies that on the average 74% of banks are solvent to meet their maturing obligation. Considering the kurtosis value of Solvency Risk of 9.5433 therefore, the data is said to be normal since by virtue of the Kurtosis assumptions this study can conclude that the data of the Solvency Risk is normal. Just like the Kurtosis, the Skewness of the Solvency Risk is said to be normal since it is close to zero as the value is - 2.7694 as seen in Table 4.1. This implies that the Skewness of the data is normal even though it looks negatively skewed. Therefore, this study found Solvency Risk to meet the symmetrical distribution assumption of skewness.

Furthermore, Table 4.1 indicates an average value of market risk of 2.8265 with a minimum and maximum values of 2.7171 and 2.9440 respectively. In terms of normality therefore, the Kurtosis value of market risk is 3.9966 indicates normality as the value is close to zero which means that the data meet Kurtosis assumption. In addition, the skewness of the data is almost normally distributed as value of 0.1657 is close to zero which implies that the data is normally skewed even though it looks positively skewed which is an indication that most of the data are on the right-hand side of the normal curve. Yet, the data is said to meet the symmetrical distribution assumption of the skewness.

Lastly, Table 4.1 shows a mean value of Operational Risk and Loan Loss Provision of 22.937 and 0.0295 respectively with minimum and maximum values of -4.6255 and 820.64 respectively in the case of Operational Risk and minimum and maximum values of -6.6673 and 4.9986 respectively in the case of loan loss provision. The kurtosis values of operational risk and loan loss provision are 39.781 and 14.275 respectively which means that the data do not meet kurtosis assumption since they are far away from zero value. In addition, the skewness values of 5.5887 and -2.3491 for the Operational Risk and Loan Loss Provision respectively implies that the data are normally distributed even though one tend to be negatively skewed and the other tend to be positively skewed, therefore, the data meet the symmetrical distribution assumption.

4.3 Correlation Matrix

The following Table 4.2 presents the correlation matrix where the correlation between the dependent variable and independent variables including the correlation between the independent variables are analyzed.

Table 4.2: Correlation Matrix

	ROA	ROE	CAR	LR	SR	MR	OR	CLLP
ROA	1.0000							
ROE	-0.2473	1.0000						
CAR	0.0281	-0.7050	1.0000					
LR	0.1911	0.0007	-0.1164	1.0000				
SR	-0.1791	0.0061	-0.0471	-0.0326	1.0000			
MR	-0.0203	-0.0891	-0.0393	0.1775	0.0078	1.0000		
OR	0.0314	-0.0190	-0.0410	0.0313	0.0429	-0.1079	1.0000	
LLP	-0.0445	0.0558	-0.0935	0.1544	0.1047	0.0827	0.0408	1.0000

The correlation measured the degree of association between risk variables which include Capital Adequacy Risk, Liquidity Risk, Solvency Risk, Market Risk and Operational Risk and firm performance measured as ROA and ROE. The results in Table 4.2 show the degree of association between firm performance and all pairs of independent variables individually between themselves and cumulatively with the dependent variable (firm performance) of the study in the Banks in Nigeria.

The correlation result shows that Capital Adequacy Risk, Liquidity Risk and Operational Risk have positive and weak association with ROA. However, Solvency Risk, Market Risk and Loan Loss Provision have negative and weak association with ROA since they are all less than ± 0.3 (Vargha, Bergman, & Delaney, 2013). This implies that a study can be conducted in the area since a correlation exist between the ROA and the explanatory variables.

The ROE also is negatively correlated with individual explanatory variables with the exception of Capital Adequacy Risk, and Operational Risk which are all individually

positively correlated to the ROE even though some of the correlations are weak and some are strong as their values are not up to ± 0.5 and greater ± 0.5 respectively. Overall, there is evidence that a study can be conducted in that area since performance measured as ROA and ROE dependent variable is correlated with independent variable individually either negatively or positively.

Meanwhile, the correlation between the explanatory variables themselves are also important to ascertain if multicollinearity exists among the variables which could hinder the application of the regression analysis. Therefore, this study found that the correlation between Capital Adequacy Risk and the following explanatory variables, Liquidity Risk, Solvency Risk, Market Risk and Operational Risk to be weakly negatively correlated individually with the highest correlation co-efficient of -0.1164 between Capital Adequacy Risk and Liquidity Risk and the lowest is Capital Adequacy Risk and Market Risk with the correlation value of -0.0393. This implies that, the above independent variables seem to be multicollinearity free since none of their correlation co-efficient is up to 0.5 as they have weak correlation co-efficient.

In addition, the correlation between the Liquidity Risk and the rest of the explanatory variables which include Solvency Risk, Market Risk, Operational Risk and Loan Loss Provision are said to be weakly positively correlated individually with the exception of Solvency Risk which has weak and negative correlation since the value is -0.0326 and the highest correlation co-efficient among the positive ones is 0.1775 between the Liquidity Risk and Market Risk and the lowest is Liquidity Risk and Operational Risk with the correlation value of 0.0409. This implies that, the above independent variables seem to be multicollinearity free since none of their correlation co-efficient is up to ± 0.5 as they have weak correlation co-efficient.

Furthermore, the correlation between Solvency Risk and the rest of the explanatory variables, Market Risk, Operational Risk and Loan Loss Provision are all positively weak with highest positive correlation to be on Solvency Risk and Loan Loss Provision which has a positive co-efficient value of 0.0827 and the lowest positive correlation value is 0.0078 on Solvency Risk and Market Risk. This is also an indication that, the variables tend to be free from multicollinearity.

In other to consider the remaining variables correlations, this study considered all the correlation among the variables which are between the Market Risk, the rest of the explanatory variables, Operational Risk and Loan Loss Provision. While that of Market Risk and Operational Risk is weakly and positively correlated with a value of 0.0429, the correlation between the Market Risk and Loan Loss Provision is negatively weak with correlation co-efficient of -0.0408. This implies that, the above independent variables seem to be multicollinearity free since none of their correlation co-efficient is up to ± 0.5 as they have weak correlation co-efficient.

Based on the correlation revealed in Table 4.2 therefore, this study expects no multicollinearity among the independent variables. Since none of the correlation among the remaining explanatory variables be it positive or negative is more than 70% thus, a clear indication of multicollinearity free (Gujurati, 2013). Consequently, this study can proceed to confirm the claim by looking at the Variance Inflation Factor (VIF) of each variable which is presented in Table 4.3 below with their explanations.

4.4 Multicollinearity Test Using Variance Inflation Factor (VIF)

This test was carried out to check whether there is high correlation between and among the independent variables. High correlation between explanatory variables normally indicates

either wrong selection or redundancy of some independent variables relative to the dependent variable. It is also an indication of multicollinearity. From the correlation matrix in Table 4.2 earlier stated, none of the correlation coefficient between explanatory variables is greater than either negative or positive 0.70. In addition, the low magnitude of the correlations amongst the exogenous variables indicates that multicollinearity should not pose a threat for the sample of the study. To formally substantiate the absence of multicollinearity between the independent variables, collinearity diagnostics are observed and that the variance inflation factors indicate no multicollinearity in the data. This could be seen in Table 4.3 below.

Table 4.3: Multi-collinearity Test Results

Variable	VIF	1/VIF
CAR	48.42	0.020653
LR	1.61	0.622194
SR	1.07	0.937970
MR	1.05	0.948393
OR	1.02	0.979955
LLP	1.08	0.921842
Mean VIF	14.57	

Source: Computed using STATA 13 software

The variance inflation factor and the inverse of the VIF are two advanced measures of assessing multicollinearity between the independent variables. Using STATA 13 version, the variance inflation factors and tolerance values are computed and almost all the variables (Neter, Kutner, Nachtsheim, & Wasserman, 1996) and (Cassey & Anderson, 1999). In addition, the tolerance values are greater than 50%, thus which further substantiates the fact that there is no multicollinearity between independent variables which includes Liquidity Risk, Solvency Risk, Market Risk and Operational Risk (Tobachnick & Fidell, 1996). Also, the mean of the VIF said a lot since the mean value is 14.57 an indication that multicollinearity is present among some of the explanatory variables.

To be consistent with the proponents of regression analysis therefore, there is need to further conduct other analysis such as heteroscedasticity which is one of the assumptions that invalidates parameters thus, misleading the findings of the study. This is indicated below as in Table 4.4 and 4.5.

4.5 Heteroscedasticity Test

This test was conducted to check whether the variability of the error terms is constant or not. If heteroscedasticity is present in our model Ordinary Least Square (OLS) and panel regression may not be suitable for the analysis and could be considered insufficient to be the minimum variance estimator. This means that, values for the true parameters are likely to be misleading (with overestimation as likely as underestimation since the expected parameters are biased). heteroscedasticity causes biasness in the standard error values of the model coefficients due to unreliable hypothesis testing from biased t-scores. In addition, the presence of heteroscedasticity signifies that the variation of the residuals or error term is not constant which affects the inferences in respect of the parameters coefficient, coefficient of determination (R^2) and F-statistics of the study. Going by the model of one of the studies which is ROA model as presented in Table 4.4 below, there is clear presence of heteroscedasticity in the model.

Table 4.4: Heteroscedasticity on ROA Model

Modified Wald test for group wise heteroscedasticity in fixed effect regression model

Ho: $\sigma(i)^2 = \sigma^2$ for all i

Variables: fitted values of ROA

chi2(12)	=	39023.26
Prob > chi2	=	0.0000

Source: Computed using STATA 13 software

The result of the test on ROA model reveals that there is a presence of heteroscedasticity because the probability of the chi square is statistically significant at 1% indicating that the model is not homoscedastic. This suggests that the original which ever model is chosen by Hausman Test be it Fixed Effect or Random Effect regression will not be suitable for this study.

To overcome the shortcomings of either Fixed Effect or Random Effect in the presence of heteroscedasticity therefore, this study used Panel Corrected Standard Error (PCSE) or Generalize Least Square (GLS) model for Fixed Effect and Random Effect respectively.

In the case of the ROE model, the result seems to be the same as seen in Table 4.5 below. The result also is significant at 1% which is a clear indication of the presence of heteroscedasticity in the ROE model.

Table 4.5: Heteroscedasticity on ROE Model

Modified Wald test for groupwise heteroscedasticity in fixed effect regression model		
Ho: $\sigma(i)^2 = \sigma^2$ for all i		
Variables: fitted values of ROE		
chi2(12)	=	25599.10
Prob > chi2	=	0.0000
Source: Computed using STATA 13 software		

The result on the ROE model shows the presence of heteroscedasticity because the probability of the chi square is less than 1% which is significant at 1% indicating that the model is not homoscedastic. This suggests that Fixed Effect or Random Effect model may

not be suitable for this study. To be consistent with the first model therefore, this study employed either Panel Corrected Standard Error (PCSE) or Generalize Least Square (GLS) model for Fixed Effect and Random Effect respectively which is more suitable to heteroscedastic model.

4.6 Fixed Effect and Random Effect Regression Model Using Hausman Test

After due consideration of the above models, the selection of the model is followed by the Hausman's test where the study proposed random effect on ROA and ROE. The result of the Hausman's test is represented in Table 4.6 and Table 4.7 for ROA and ROE model respectively. This is done to determine which model among ROA and ROE is appropriate. It is important to note that, the explanation of the models presented in Table 4.8 above depends on the selection of the appropriate model based on Hausman's test presented in Table 4.6 and Table 4.7 for ROA and ROE model respectively as seen below.

Table 4.6: Hausman's Test on ROA Model

Variables	Coefficients		
	(b) Fixed	(B) Random	Standard Error
Test: Ho: difference in coefficients not systematic			
chi2(11)	=	18.470	
Prob > chi2	=	0.0712	

Source: Stata 13 Output

As seen from the Table 4.6., the chi-square value is 18.47 and its corresponding probability value is 0.071. This implies that, there is sufficient evidence to reject the null hypothesis which said that the random effect model is appropriate since is statistically significant at 5% as the probability value is less than the level of significance. Like any other hypothesis

testing, when the null hypothesis is rejected that signifies the alternate hypothesis is true therefore, the fixed effect ROA model is supported.

Table 4.7: Hausman's Test on ROE Model

Coefficients			
Variables	(b)	(B)	Standard
	Fixed	Random	Error
Test: Ho: difference in coefficients not systematic			
chi2(11)	=	-1902.43	

Source: Stata 13 Output

In the case of the ROE model however, the chi-square is even negative and very huge with a value of -1902.43 as seen in Table 4.7, since the chi-square negative therefore failed to meet the asymptotic assumption of the Hausman test, hence, fixed effect is favoured in this condition since the corresponding probability value could not be ascertain. Thus, this study considered the fixed effect ROE model pending the condition from heteroscedasticity.

In a nutshell, fixed effect ROA and ROE models are to be considered based on the Hausman's test. This is done in the absence of heteroscedasticity. However, all the ROA and ROE models are heteroscedastic thus, the fixed effect models could no longer be considered, therefore, the model that can address the heteroscedasticity in fixed effect model is Panel Corrected Standard Error (PCSE) model. Thus, this study ran the PCSE model based on the recommendation of Gujarati (2017) and finally, the PSCE model is hereby presented and discussed next.

4.7 Presentation, Analysis and Discussion of Regression Results

This section presents the regression result of the dependent variable (firm performance which is measured in terms of return on assets and return on equity) and all the independent variables of the study which include Capital Adequacy Risk, Liquidity Risk, Solvency Risk, Market Risk and Operational Risk as well as the moderating variable Loan Loss Provision. The study presents the result of two models as in ROA and ROE model. Based on the models, the study follows with the analysis of the relationship between dependent variable and each independent variable. The summary of the PCSE regression results obtained from the ROA and ROE models of the study are presented in Table 4.8 below:

Table 4.8: Panel Corrected Standard Error Model Regression Result for ROA and ROE

Variables	(1) ROA	(2) ROE
CAR	0.0019941*** (0.0008957)	-0.0084539 *** (0.0049618)
LR	0.0589872** (0.0230588)	-0.0972738 (0.109285)
SR	-0.0150303* (0.012983)	0.0368307** (0.0480179)
OR	0.0000212*** (0.0000227)	-0.0002422 *** (0.0000846)
MR	-0.0179409* (0.0922139)	-1.004409 (0.2910427)
LLP	0.1399397 (0.1664856)	-1.393013 (0.7697689)
Variables	(1) ROA	(2) ROE
CARLLP	0.0016048*** (0.0008132)	0.0091791*** (0.0046143)
LRLLP	0.0149852** (0.0296734)	-0.1852673 (0.142196)
SRLLP	0.0038686***	0.0723203*

	(0.0075865)	(0.0415388)
ORLLP	-9.10e-06*** (0.0000232)	0.0001133*** (0.0001033)
MRLLP	0-.0572357* (0.0587501)	0.4904909 (0.2714655)
Constant	0.0212885 (0.257779)	3.104894 (0.8143307)
R-Square	0.1195	0.5450
wald chi2(11)	21.01	49.72
Prob	0.0333	0.000

Significance Level: 1% (***); 5% (**) and 10% (*)

Source: *Stata 13 Output*

The regression result is shown on Table 4.8, where the result is derived from the equation formulated and employed based on ROA and ROE model as performance measurement while Capital Adequacy Risk, Liquidity Risk, Solvency Risk, Market Risk and Operational Risk are the explanatory variables as seen in the equation which also is the model of the study. Also, Loan Loss Provision is the moderating variable where it moderates the relationship between the explanatory variables and the explained variable. In order to proceed with the model's explanation therefore, there is a need to ascertain the appropriate model which implies that an additional analysis is to be considered to select the best model among the ROA and ROE model using Akaike's Information Criterion (AIC) and Bayesian Information Criterion (BIC) so that the study can proceed for the analysis based on the model selected.

4.8 Selection between ROA and ROE Model Using AIC and BIC Criteria

Among the criteria to select the best model is Akaike's Information Criterion (AIC) and Bayesian Information Criterion (BIC) (Fabozzi, Focardi, Rachev, & Arshanapalli, 2014)

where the higher the AIC and BIC the better the model as suggested by the authors. In the case of this study the AIC and BIC criteria is employed to select the best model among the ROA and ROE model presented in Table 4.8 above. Therefore, AIC and BIC result is run and the result is presented in Table 4.9 and 4.10 for ROA and ROE model respectively.

Table 4.9: Akaike's information criterion and Bayesian information criterion for ROA model

Model	Obs	ll(null)	ll(model)	df	AIC	BIC
ROA	144	218.2982	226.531	12	-429.0619	-393.4242

Source: Stata 13 Output

Table 4.9 presents the Akaike's information criterion and Bayesian information criterion for ROA model where the AIC value is -429.0619 and that of BIC value as presented in the result is -393.4242 which are all negative values, therefore, if the Akaike's information criterion and Bayesian information criterion for ROE model turn out to be positive, then the ROE model is said to be the best model however, if the Akaike's information criterion and Bayesian information criterion for ROE model turn out to be negative and less than that of the ROA model therefore, the ROA model could be the best model based on the AIC and BIC criteria.

Table 4.10: Akaike's information criterion and Bayesian information criterion for ROE model

Model	Obs	ll(null)	ll(model)	Df	AIC	BIC
ROE	144	-82.68337	-17.82214	12	59.64428	95.28204

Source: *Stata 13 Output*

The Table 4.10 above is the Akaike's information criterion and Bayesian information criterion for ROE model where the AIC value is 59.64428 and that of BIC value as presented in the result is 95.28204 which are all positive values. Based on the criteria set earlier therefore, ROE turn out to be the best model. Since ROE model is the best as indicated by the AIC and BIC criteria therefore, this study will interpret the ROE result as the best result among the two results presented in Table 4.8 above hence, the study regression result.

4.8.1 Capital Adequacy Risk and Banks' Performance

One of the major factors to consider on banks is the Capital Adequacy Risk (CAR) which measures the bank capital in relation to its weighted risk asset which is expected to promote financial stability that could result to economic efficiency. Thus, section 13(1) of BOFID (1991) states that banks shall maintain, at all times, capital funds unimpaired by losses, in such ratio to all or any assets or to all or any liabilities or to both such assets and liabilities of the bank and all its offices in and outside Nigeria. This is because, the capital adequacy could result to failure of the banks due to some factors which include financial crisis. The said CAR could improve performance which in the case of this study is ROE. Therefore, the first variable presented in the result of the ROE model is capital adequacy risk. Recall that, hypothesis formulated was in chapter one in respect of Capital Adequacy Risk and the performance. Thus, this study argues in chapter one based on agency theory coupled with many researchers view (Karimiyan *et al.*, 2013) that there is a relationship between Capital

Adequacy Risk and bank performance which is measured as ROE (see, for example, Garanina & Kaikova, 2016; Toumi *et al.*, 2016; Afrifa & Tauringana, 2015; Estapé-Dubreuil & Torreguitart-Mirada, 2015; Vintil *et al.*, 2015; Ammari *et al.*, 2014; Mouselli & Hussainey, 2014).

From the regression result obtained from Table 4.8, in respect of Capital Adequacy Risk and firm performance for the ROE model shows that Capital Adequacy Risk has a beta coefficient of -0.0085. This is a clear indication that, Capital Adequacy Risk has negative relation with ROE since the parameter is negative. The said relationship between Capital Adequacy Risk and ROE is significant at 1% level of significance (0.000-0.009) in explaining firm performance of Commercial Banks in Nigeria. This is because, the p-value of the Capital Adequacy Risk in respect of the ROE is 0.005. This implies that there is sufficient evidence to suggest that Capital Adequacy Risk has a negative relationship with performance measured as ROE since the relationship is significant. Therefore, the hypothesis formulated on Capital Adequacy Risk and ROE is said to be rejected. Meanwhile, the said relationship is negative since the parameter is negative as seen in ROE model result in Table 4.8 above.

As the relationship between Capital Adequacy Risk and performance is negative, it implies that when there is an increase in the ratio of capital adequacy in relation to its weighted risk asset by one, the firm performance measures will decrease by the parameters found in the result which in the case of the ROE model, the performance will decrease by 0.0084539 with econometric assumption of other things being equal. This could be against the argument put forward that Capital Adequacy Risk could address any financial stability and economic efficiency challenges that could result to the banks backwardness which in turn could have a positive impact on the firm performance. Though, the result reveals negative relationship in

the ROE model, there is need to compare the result with that of the moderating result so as to find if the moderator really plays its role by strengthening the said relationship in line with either theory or the expectations of this study.

4.8.2 Liquidity Risk and Bank's Performance

Another important factor to consider on banks performance is the liquidity risk which measures how easily bank's asset or its security can be converted to cash which is expected to affect the funding of liabilities of the banks and many scholars argue that, liquidity risk could have influence on performance. Thus, Section 15(1) of BOFID (1991) states that every bank shall maintain with the Bank cash reserves, and special deposits and hold specified liquid assets or stabilization securities, as the case may be, not less in amount than as may, from time to time, it is prescribed by the Bank by virtue of section 39 of the Central Bank of Nigeria Decree 1991. This is because, the liquidity risk could result to failure of the banks to meet their obligations due to lack of cash which could lead to poor performance of the banks. Therefore, the second variable presented in the result of the ROE model is liquidity risk. Recall that, hypothesis formulated in chapter one in respect of liquidity risk and the performance. Thus, this study argues in chapter one based on agency theory coupled with many researchers' view that there is a relationship between liquidity risk and bank performance which is measured as ROE (see, for example, Afrifa & Tauríngana, 2015; Estapé-Dubreuil & Torreguitart-Mirada, 2015).

From the regression result obtained from Table 4.8, in respect of liquidity risk and firm performance for the ROE model shows that liquidity risk has a beta coefficient of - 0.0972738. This is a clear indication that, liquidity risk has negative relation with ROE since the parameter is negative. The said relationship between the liquidity risk and ROE is insignificant in explaining firm performance of Banks in Nigeria. This is because, the p-

value of the liquidity risk in respect of the ROE is 0.109. This implies that there is no sufficient evidence to suggest that liquidity risk has a relationship with performance measured as ROE since the relationship is insignificant. Therefore, the hypothesis formulated on liquidity risk and ROE could not be rejected. Even though, the said relationship seems to be negative since the parameter looks negative as seen in ROE model result in Table 4.8 above, therefore, this study found out the result happened by chance thus, the study ignores the negativity of the parameter. Based on the result found thus, this study concludes that there is no relationship between liquidity risk and banks performance in Nigeria since the result in respect of the said relationship is insignificant as the p-value of the said relationship is greater than 10%.

4.8.3 Solvency Risk and Banks' Performance

Among the risk associated with banks' performance which is vital to consider is the solvency risk which measures how easily banks can meet their maturing obligations as they appear as a result of full value despite the fact that the banks can settle some at unspecified time in the future even after the disposal of the bank's assets which is expected to affect the settlements of the obligation of the banks and many scholars argue that, solvency risk could have influence on performance. Thus, section 15(2) of BOFID (1991) states that where both assets and liabilities are due from and to other banks, they shall be offset accordingly, and any surplus of assets or liabilities shall be included or deducted. This is because, the solvency risk could result to failure of the banks to meet their obligations which could lead to poor performance of the banks. The higher the solvency risk, the better the performance which in the case of this study is ROE. Therefore, the next variable presented in the result of the ROE model is solvency risk. Recall the hypothesis formulated in chapter one in respect of solvency risk and the performance. Thus, this study argues in chapter one based on agency theory coupled with many researchers' views that there is a relationship between solvency

risk and bank performance which is measured as ROE (see, for example, Afrifa & Tauringana, 2015; Estapé-Dubreuil & Torreguitart-Mirada, 2015).

From the regression result obtained from Table 4.8, in respect of solvency risk and firm performance for the ROE model shows that solvency risk has a beta coefficient of 0.0368307. This is a clear indication that, solvency risk has positive relationship with ROE since the parameter is positive. The said relationship between the solvency risk and ROE is significant at 5% level of significance (0.010-0.049) in explaining firm performance of Commercial Banks in Nigeria. This is because, the p-value of the solvency risk in respect of the ROE is greater than 10%. This implies that there is no sufficient evidence to suggest that solvency risk has a relationship with performance measured as ROE since the relationship is insignificant. Therefore, the hypothesis formulated on solvency risk and ROE could not be rejected. Even though, the said relationship seems to be positive since the parameter looks positive as seen in ROE model result in Table 8 above, therefore, this study found out the result happened by chance thus, the study ignores the positivity of the parameter.

The said relationship could be as a result of the need for moderation, thus, if the moderation turns out to be significant therefore, the problem is said to be addressed. Thus, this study considered the moderating result for more reason to agree with any insignificant result provided is direct. Based on the result found thus, this study concludes that there is no relationship between solvency risk and banks performance in Nigeria since the result in respect of the said relationship is insignificant as the p-value of the said relationship is greater than 10%.

4.8.4 Operational Risk and Banks' Performance

Among the risk associated with banks' performance which is vital to consider is the operational risk which generates operational losses and the losses generated are a cost to the bank and scholars argue that, operational risk could have influence on performance. Thus, section 24 of BOFID (1991) states that banks shall keep book of accounts where all transactions including expenses are recorded and bank will bear the cost of preparation. This is because, the operational risk could result to more performance of the banks. The higher the operational risk the better the performance which in the case of this study is ROE. Therefore, the next variable presented in the result of the ROE model is operational risk. Recall that, hypothesis is formulated in chapter one in respect of operational risk and the performance. Thus, this study argues in chapter one based on agency theory coupled with many researchers' views that there is a relationship between operational risk and bank performance which is measured as ROE (see, for example, Afrifa & Tauringana, 2015; Estapé-Dubreuil & Torreguitart-Mirada, 2015).

From the regression result obtained from Table 4.8, in respect of operational risk and firm performance for the ROE model shows that operational risk has a beta coefficient of -0.0002422. This is a clear indication that, operational risk has negative relationship with ROE since the parameter is negative. The said relationship between the operational risk and ROE is significant at 1% level of significance (0.000-0.009) in explaining firm performance of Commercial Banks in Nigeria. This is because, the p-value of the operational risk in respect of the ROE is 0.000. This implies that there is sufficient evidence to suggest that operational risk has a relationship with performance measured as ROE since the relationship is significant. Therefore, the hypothesis formulated on operational risk and ROE could not be rejected. Even though, the said relationship seems to be negative since the parameter looks negative as seen in ROE model result in Table 8 above, therefore, this study found out the

result could be against the theory which needs further analysis such as moderator due to the inconsistencies found in the result thus, the study ignores the negativity of the parameter. The said relationship could be as a result of the need for moderation, thus, if the moderation turns out to be significant therefore, the problem is said to be addressed. Thus, this study considered the moderating result for more reason to agree with any insignificant result provided is direct. Based on the result found thus, this study concludes that there is relationship between operational risk and banks performance in Nigeria since the result in respect of the said relationship is significant at 5%.

4.8.5 Market Risk and Banks' Performance

Another vital risk to consider is the market risk which deals with the fluctuation and stability of market as determined by the interest rates which could affect the financial performance of DMBs. Scholars argue that, market risk could have influence on performance. Thus, section 23 (1) of BOFID (1991) states that every bank shall display at its offices its lending and deposit interest rates and shall render to the Bank information on such rates as may be specified, from time to time, by the bank. This is because, the market risk (interest rate risk) could improve performance of the banks. The expectation is that the higher market risk (lending rate) the better the performance which in the case of this study is ROE. Therefore, the next variable presented in the result of the ROE model is market risk. Recall that, hypothesis is formulated in chapter one in respect of market risk and the performance. Thus, this study argues in chapter one based on agency theory coupled with many researchers' view that there is a relationship between market risk and bank performance which is measured as ROE (see, for example, Afrifa & Taurigana, 2015; Estapé-Dubreuil & Torreguitart-Mirada, 2015).

From the regression result obtained from Table 4.8, in respect of market risk and firm performance for the ROE model shows that market risk has a beta coefficient of -1.004409. This is a clear indication that, market risk has negative relationship with ROE since the parameter is negative. The said relationship between the market risk and ROE is insignificant in explaining firm performance of Commercial Banks in Nigeria. This is because, the p-value of the market risk in respect of the ROE is 0.291. This implies that there is sufficient evidence to suggest that market risk has a relationship with performance measured as ROE since the relationship is significant. Therefore, the hypothesis formulated on market risk and ROE could not be rejected. Even though, the said relationship seems to be negative since the parameter looks negative as seen in ROE model result in Table 8 above, therefore, this study found out the result could be against the theory which need further analysis such as moderator due to the inconsistencies found in the result thus, the study ignores the negativity of the parameter.

Based on the result found thus, this study concludes that there is relationship between market risk and banks performance in Nigeria since the result in respect of the said relationship is significant at 5%.

4.8.6 Capital Adequacy Risk and Loan Loss Provision on Banks' Performance

Due to inconsistencies in the result as earlier stated which calls for the moderating effect which could strengthen the relationship therefore, this study moderates the relationship between Capital Adequacy Risk (CAR) and banks' performance using loan loss provision. This is because, the loan loss provision could serve as a safety point to augment any loss that could result to failure to meet some of the obligations of the banks which could in turn influence the performance of the said banks and the capital adequacy could result to failure of the banks due to some factors which include financial crisis as stated earlier. The said

CAR could improve performance which in the case of this study is ROE. Therefore, the first moderating variable presented in the result of the ROE model is capital adequacy risk and loan loss provision. Recall that, hypothesis is formulated in chapter one in respect of capital adequacy risk and loan loss provision on performance. Thus, this study argues in chapter one, based on Agency theory coupled with many researchers view (Karimiyan *et al.*, 2013) that loan loss provision moderates the relationship between capital adequacy risk and bank performance which is measured as ROE (see, for example, Garanina & Kaikova, 2016; Toumi *et al.*, 2016; Afrifa & Tauringana, 2015; Estapé-Dubreuil & Torreguitart-Mirada, 2015; Vintil *et al.*, 2015; Ammari *et al.*, 2014; Mouselli & Hussainey, 2014).

From the regression result obtained from Table 4.8, in respect of loan loss provision and capital adequacy risk on banks performance for the ROE model shows that the interaction of loan loss provision and capital adequacy risk has a beta coefficient of 0.0091791. This is a clear indication that, the interaction of loan loss provision and capital adequacy risk has positive relation with ROE since the parameter is positive. The said relationship between the interaction of loan loss provision and capital adequacy risk on ROE is significant at 1% level of significance (0.000-0.009) in explaining performance of Commercial Banks in Nigeria. This is because, the p-value of the interaction of loan loss provision and capital adequacy risk in respect of the ROE is 0.005. This implies that there is sufficient evidence to suggest that the interaction of loan loss provision and capital adequacy risk has a positive relationship with performance measured as ROE since the relationship is significant. Therefore, the hypothesis formulated on the interaction of loan loss provision and capital adequacy risk on ROE is said to be rejected. Meanwhile, the said relationship is moderated since the parameter is in line with theory as seen in ROE model result in Table 8 above.

As the relationship between the interaction of loan loss provision and capital adequacy risk on performance is positive, it implies that when there is an increase in the interaction of loan loss provision and ratio of capital adequacy in relation to its weighted risk asset by one, the Commercial Banks performance measures will increase by the parameters found in the result which in the case of the ROE model, the performance will increase by 0.0091791 with econometric assumption of other things being equal. This could be in line with the argument put forward that, in the presence of loan loss provision, capital adequacy risk could address any financial stability and economic efficiency challenges that could result to the banks backwardness which in turn could have a positive impact on the firm performance.

4.8.7 Liquidity Risk and Loan Loss Provision on Banks' Performance

Another important factor to consider on banks performance which needs to be moderated is the liquidity risk which measures how easily bank's asset or its security can be converted to cash which is expected to affect the funding of liabilities of the banks. This is because, the liquidity risk could result to failure of the banks to meet their obligations due to lack of cash which could lead to poor performance of the banks. Recall the hypotheses formulated in chapter one in respect of liquidity risk and loan loss provision on Commercial Banks performance where the study argues that loan loss provision moderates the relationship between liquidity risk and bank performance which is measured as ROE.

From the regression result obtained from Table 4.8, in respect of loan loss provision and liquidity risk on banks' performance for the ROE model shows that loan loss provision does not moderate the relationship between the liquidity risk and ROE of Banks in Nigeria since the result is insignificant. This is because, the p-value of the loan loss provision and liquidity risk in respect of the ROE is 0.142 with negative coefficient value of -0.1852673. This implies that there is no sufficient evidence to suggest that loan loss provision moderates the

relationship between liquidity risk and Commercial Banks performance measured as ROE since the relationship is insignificant. Therefore, the hypothesis formulated on liquidity risk and loan loss provision on ROE could not be rejected even though, the said relationship seems to be negative since the parameter looks negative as seen in ROE model result in Table 4.8 above, therefore, this study found out the result happened by chance thus, the study ignores the negativity of the parameter.

Based on the result found thus, this study concludes that loan loss provision does not moderate the relationship between liquidity risk and banks performance in Nigeria since the result in respect of the said relationship is insignificant as the p-value of the said relationship is greater than 10%.

4.8.8 Solvency Risk and Banks' Performance on Banks' Performance

Solvency risk also face the problem of inconsistent result which needs moderator as earlier argued in the literature and the result is presented in Table 4.8 thus, loan loss provision moderates the relationship between solvency risk and banks' performance since the solvency risk measures how easily banks can meet their maturing obligations as they appear as a result of full value despite the fact that the banks can settle some at unspecified time in the future even after the disposal of the bank assets which is expected to affect the settlements of the obligation of the banks.

Previously, the direct relationship on solvency risk shows no relationship since the parameter is insignificant which call for the moderating relationship and the regression result is presented in Table 4.8 which in respect of the loan loss provision and solvency risk on firm performance for the ROE model shows the parameter of 0.0723203. This is a clear indication that, loan loss provision moderates the relationship between solvency and ROE which is

significant at 10% level of significance (0.010-0.099) in explaining performance of Commercial Banks in Nigeria. This is because the said relationship is significant. This is because, the p-value of the loan loss provision and solvency risk in respect of the ROE is 0.042. This implies that there is sufficient evidence to suggest that loan loss provision moderates the relationship between solvency risk and performance measured as ROE since the relationship is significant. Therefore, the hypothesis formulated on loan loss provision and solvency risk on ROE is rejected.

Based on the result found thus, this study concludes that loan loss provision moderates the relationship between solvency risk and banks performance in Nigeria since the result in respect of the said relationship is significant as the p-value of the said relationship is less than 10%.

4.8.9 Operational Risk and Loan Loss Provision on Banks' Performance

This study also argues on the moderating role of loan loss provision on the relationship between operational risk and banks' performance as the operational risk generates operational losses and the losses generated is the cost to the bank.

The regression result obtained from Table 4.8, in respect of loan loss provision and operational risk on banks performance for the ROE model shows that operational risk has a beta coefficient of 0.0001133. This shows that, loan loss provision moderates the relationship between operational risk and ROE positively since the parameter is positive however the said relationship is significant at 1% level of significance (0.000-0.009) in explaining performance of Commercial Banks in Nigeria. This is because, the p-value is 0.000. This implies that there is no sufficient evidence to suggest that loan loss provision moderates the relationship between operational risk and banks' performance measured as ROE since the

relationship is insignificant. Therefore, the hypothesis formulated on operational risk and loan loss provision on ROE could not be rejected. Even though, the said relationship seems to be positive since the parameter is positive as seen in ROE model result in Table 8 above. Therefore, this study concludes that the result happened by chance.

Based on the result found thus, this study concludes that loan loss provision does not moderate the relationship between operational risk and banks performance in Nigeria since the result in respect of the said relationship is insignificant.

4.8.10 Market Risk and Loan Loss Provision on Banks' Performance

Another vital moderation is the market risk which deals with the fluctuation and stability of market as determined by the interest rates which could affect the financial performance of DMBs. Since the parameter of the market risk is negative in the direct relationship however, there is need to moderate so as to establish a positive parameter as the earlier parameter is against the theory. Thus, loan loss provision is projected to moderate the relationship between market risk and banks' performance. Therefore, the next variable presented in the result of the ROE model is loan loss provision and market risk.

From the regression result obtained from Table 4.8, in respect of loan loss provision and market risk on firm performance for the ROE model, it shows that market risk has a beta coefficient of 0.4904909. This indicates that, loan loss provision moderates the relationship between market risk and ROE since the parameter is positive. The said relationship is insignificant in explaining performance of Commercial Banks in Nigeria. This is because, the p-value of the market risk in respect of the ROE is 0.271. This implies that there is insufficient evidence to suggest that loan loss provision moderates the relationship between market risk and performance measured as ROE since the relationship is insignificant.

Therefore, the hypothesis formulated on market risk and loan loss provision on ROE is not rejected thus, the result of the study is not in line with the theory.

Based on the result found thus, this study concludes that loan loss provision do not moderate the relationship between liquidity risk, market risk and banks performance in Nigeria since the result in respect of the said relationship is insignificant.

4.9 Summary

The summary results of regression output shows that capital adequacy risk and liquidity risk have significant effect on ROA while solvency risk, market risk, operational risk and loan loss provision have significant effect on ROA. Capital adequacy risk, market risk, operational risk and loan loss provision have significant effect on ROE while solvency risk, liquidity risk have insignificant effect on ROE. Looking at the results of moderating effect of loan loss provision on the other study variables. Loan loss provision has significant moderating effect on the relationship between capital adequacy risk and ROA. But loan loss provision has insignificant moderating effect on the relationship between liquidity risk, solvency risk, market risk, operational risk and ROA. Again, loan loss provision has significant moderating effect on the relationship between capital adequacy risk, solvency risk, market risk and ROE. However, loan loss provision has insignificant moderating effect on the relationship between liquidity risk, operational risk and ROE. In conclusion loan loss provision has moderating role on the relationship between risk factors and financial performance of commercial banks in Nigeria.

CHAPTER FIVE

SUMMARY, CONCLUSION AND RECOMMENDATIONS

5.1 Introduction

This chapter discussed about the summary and conclusion of the study where it started with the overview of the study, summary of the findings, research implications and recommendations of the findings and the conclusion of the findings.

5.2 Summary

This study was carried out to examine the moderating role of loan loss provision on the relationship between risks factors and financial performance of commercial banks in Nigeria for a period ranging from 2007 to 2018. In conducting the research, seven study variables were subjected to normality tests such as descriptive statistic test, correlation test, multicollinearity test heteroscedasticity test and Hausman's test. The seven study variables are financial performance, capital adequacy risk, liquidity risk, solvency risk, operational risk, market risk which are moderated with loan loss provision of the commercial banks in Nigeria. The results of regression output shows that capital adequacy risk, liquidity risk have significant effect on ROA while solvency risk, market risk, operational risk and loan loss provision have significant effect on ROA. Capital adequacy risk, solvency risk, operational risk and loan loss provision have significant effect on ROE while market risk, liquidity risk have insignificant effect on ROE. Looking at the results of moderating effect of loan loss provision on the other study variables. Loan loss provision has significant moderating effect on the relationship between capital adequacy risk and ROA. But loan loss provision has insignificant moderating effect on the relationship between liquidity risk, solvency risk, market risk, operational risk and ROA. Again, loan loss provision has significant moderating effect on the relationship between capital adequacy risk, solvency risk, operational risk and

ROE. However, loan loss provision has insignificant moderating effect on the relationship between liquidity risk, market risk and ROE.

5.3 Conclusion

The reviewed literatures show inconsistency of results of risk factors and financial performance. This study examines the moderating role of loan loss provision on the relationship between risks factors and financial performance of commercial banks in Nigeria for a period ranging from 2007 to 2018. The result of the study conducted shows that loan loss provision has significant moderating effect on the relationship between capital adequacy risk and ROA. But loan loss provision has insignificant moderating effect on the relationship between liquidity risk, solvency risk, market risk, operational risk and ROA. Again, loan loss provision has significant moderating effect on the relationship between capital adequacy risk, solvency risk, market risk and ROE. However, loan loss provision has insignificant moderating effect on the relationship between liquidity risk, operational risk and ROE. . Thus, the result provides that loan loss provision has significant moderating effect on the relationship between capital adequacy risk, solvency risk, market risk and financial performance. Based on the findings from the analysis carried out, the study concludes that loan loss provision has moderating role on the relationship between risk factors and financial performance of commercial banks in Nigeria.

5.4 Recommendations

In line with the findings of this study, the following recommendations were made to ensure optimal financial stability and performance of banks. They are stated thus: the study recommends that commercial Bank (CBs) should evolve policy measures aimed at optimizing their funding requirements under various financial stress conditions. These policy measures can be employed as a road map for banks to meet their funding requirement in long

and short term. Additionally, based on set statutory limits on liquid assets and cash reserve requirements, bankers should periodically set internal threshold on the type and amount of liquidity risk that is optimal for the banks. Additionally, banks should put on ground mechanisms that will ascertain the credit worthiness of borrowers, viability of their business credit documentation, monitoring and maintaining credit files, collateral and security documents, and efficiency of monitoring loan management process of the bank to mitigate the level of Non-performing loans (NPLs), which may consequently result in buildup of LLP that is, bank management should strengthen loan monitoring measures to reduce incidences of loan default and lower loan loss provision, it can be achieved through customers' transaction accounts monitoring, by ensuring that the borrowers comply with loan agreements and loan covenants.

Additionally, the CBN and general accounting procedures of loan loss provision should always be abided by in term of percentages (%) and periods as at when due. Banks should pay more attention to loan loss provision as this could address capital adequacy risk in relation to ROE among others. This is because changes in capital requirement of banks by regulatory bodies like CBN pose a threat to financial performance of commercial banks.

Furthermore, to mitigate the level of market and operational exposure it is recommended that in order to identify measure, monitor and control market risk, should put in place a set of systems and procedures appropriate to the size and complexity of its operations.

Additionally, that CBs should be able to estimate the likelihood of an operational loss event occurring and its potential impact on bank financial performance, as well as put in place effective internal reporting practices and systems that are consistent with the scope of operational risk defined by supervisors and the banking industry as a whole.

Lastly, the CBN as the apex regulatory and supervisory bank should evaluate the banks risk factors for proper regulation as well as determinants for financial performance of banks Central Bank of Nigeria should strengthen its banking supervision roles. The culture of unscheduled of examination of bank's financial statement should be developed, which CBN access to banks undiluted records.

5.5 Contributions of the Study

i. Policy implication contribution

The findings of the study allow for a holistic tests of risk factors. It will help in identifying key vulnerabilities and formulation of policies that would strengthen financial stability of commercial bank against risk factors. The bank regulators and banks management can incorporate risk factors in their loan loss provision and loan monitoring. However, this study has made policy recommendations to the policy makers which will help regulators and bank management and practitioners in achieving financial stability.

ii. Theoretical contribution

Most of the previous studies on risks such as such as those of Muriithi et al (2016) Mendoza et al (2017) and Lenee et al (2016) focused on establishing direct relationship between risks and financial performance of commercial banks devoid of the consideration of banks monitoring activities play in intermediation functions of CBs. But this establish the effect of loan loss provision or the relationship between risk factors of CBs.

iii. Methodological Contribution

Unlike previous studies, the study applied panel regression and panel corrected standard Error (PSCE). Also in determining the criterion of selecting between ROA and ROE, used Akaike information criterion and Bayesian information criterion respectively.

iv. Literature Contribution

In previous literature on the subject matter of this study that focused on different periods of economic conditions, the study combines varying periods of economic and financial conditions, variation such as periods of banking reforms. Financial crisis, recovery and economic recession (2007 – 2018).

v. Practical contribution

From the practical fronts, the findings of this study provide insights decision making and policy formulation to financial policy makers regulatory bodies, investors and other industry practitioners on the significant role loan loss provision plays in bank financial intermediation functions.

5.6 Limitations of the Study

The study made efforts to ensure a wider usage of variables to be employed for wider generalization of conclusions drawn; it could not be without some limitations. Not necessarily in order of gravity some of the limitations encountered are highlighted thus:

- a. The study initially sought to employ quarterly data to ensure more robust empirical data due to high frequency. It was observed that there are inconsistency and variations between quarterly data with annual data.
- b. Additionally, though the study period comprises of data for pre and post global financial crisis periods, the study failed to control for domestic economic and financial crisis such as economic recession that was experienced in Nigeria in 2016 and 2020. To control for economic recession, it requires using quarterly data rather than annual data used in the study.
- c. Furthermore, banks risk exposures are not only functions of economic and financial factors, controlling for institutional factors such as level of country crimes, control of corruption (CCRP), Government Effectiveness (GOVE), Political stability and

Absence of violence (PSAV), Regulatory Quality (REGQ), Rule of Law (RLAW), Voice and Accountability (VACC). This could not be achieved due to lack of data for some years used in the study.

- d. In addition, though the study initially proposed to apply Autoregressive Distributed Lag(ARDL) model and Generalized methods of moments(GMM) to conduct confirmatory tests of results obtained, the statistical distributional properties of the data used failed its requirements for applying such methods.

5.7 Further Areas of Research

The study examines the moderating role of loan loss provision on the relationship between risks factors and financial performance of commercial banks in Nigeria for period ranging from 2007 to 2018. Further studies should put more risk factors like currency risk, foreign exchange risk, investment risk, business risk and other dependent variables like Tobin's Q, Earnings per share and Net interest margin. The use of more years like twenty years of study in order to increase the frontiers of knowledge.

References

- Abiola, D., & Olausi, A. W. (2014). The impact of credit risk management on the commercial banks performance in Nigeria. *International Journal of Management and Sustainability*, 3(5), 295-306.
- Abubakar, A. (2015). Relationship between financial leverage and financial performance of deposit money banks in Nigeria. *International Journal of Economics, Commerce and Management- United Kingdom*, 3 (10), 759-778.
- Adebayo, A. O. & Oluwaremi, F. (2017). Relationship between credit risk management and the performance of money deposit banks in Nigeria. *IOSR Journal of Economics and Finance*, 8 (2), 38-48.
- Adekanye, F. (1986). *Practice of Bankng*. Lagos F & A Publishing Ltd.
- Adeusi, S. O., Akeke N. I. A., Obawale S. & Oladunjoye O. (2013). Risk management and financial performance of banks in Nigeria. *European Journal of Business and Management*
- Afriyie, H. O. & Akotey, J. O. (2013). Credit risk management and profitability of rural banks in the Brong Ahafo region of Ghana. *European Journal of Business and Management*, 5(24), 24-33
- Agbeja, O., Adelakun, O. J., & Olufemi, F. I. (2015). Capital Adequacy Ratio and Bank Profitability in Nigeria: A Linear Approach. *International Journal of Novel Research in Marketing Management and Economics*, 2(3), 91-99.
- Ahmad, N. H. & Ariff, M. (2007). Multi-country study of bank credit risk determinants, *International Journal of Banking and Finance*, 5(1), 135-152
- Ahmed, A., A. & Nauman, A. A. (2012). Liquidity risk and performance of banking system. *Journal of Financial Regulation and Compliance*, 20(2), 182-195.
- Akinlo, A. E. & Owoyemi, B. O. (2012). The Determinants of interest rate spreads in Nigeria: An empirical investigation. *Scientific Research Journal*, 3(1), 837-845
- Al-Homaidi, E. A., Tabash, M. I., & Ahmad, A. (2020a). The profitability of Islamic banks and voluntary disclosure: empirical insights from Yemen. *Cogent Economics and Finance*, 8(1), 1-22.
- Al-Homaidi, E. A., Tabash, M. I., Allamy, K. K., & Ahmad, A. (2020b). The extent of voluntary disclosure in the annual reports of Islamic banks: empirical evidence from Yemen. *Banks and Bank Systems*, 15(1), 167-184.
- Ali, K., Akhtar, M. F. & Ahmed, H. Z. (2011). Bank specific and macroeconomic indicators of profitability- empirical evidence from the commercial banks of Pakistan. *International Journal of Business and social sciences*, 2(6), 237-241.
- Ali, S. A. (2015). The effect of the liquidity management on profitability in the Jordanian commercial Banks. *International Journal of Business and Management*; 10(1), 62-71.

- Alshatti, A.S. (2015). The Effect of Credit Risk Management on Financial Performance of the Jordanian Commercial Banks: Investment Management and Financial Innovations 12(1).
- Antonina, D. (2011). Determinants of bank profitability in Ukraine. *Undergraduate Economic Review Journal*, 7(1), 1-20.
- Aremu, M. A., Ekpo, I. C., & Mustapha, A. M. (2013). Determinants of banks' profitability in a developing economy: Evidence from Nigerian banking industry. *Interdisciplinary journal of contemporary research in business*, 4(9), 155-181
- Arora, D. & Agarwal, R. (2009). Banking risk management in India and RBI Supervision. *Social Science Research Network*.
- Arora, A., & Kumar, M. (2014). Evolution of credit risk management capability maturity: lessons from the Indian banking sector. *Asia-Pacific Journal of Management Research and Innovation*, 10(4), 347-354.
- Asikhia, O. & Sokefun, A. (2013). Capital adequacy and banks' profitability: Empirical evidence from Nigeria, *American International Journal of Contemporary Research*. 3(10), 87-93.
- Ayu, A. G., Purnamawati, S.E. & Si, A. M. (2014). The effect of capital and liquidity risk to profitability on conventional rural bank in Indonesia. *South East Asia Journal of Contemporary Business, Economics and Law*, 5(1), 44-50.
- Azureen, N., & Saeed, A., H. (2015). An empirical analysis of liquidity risk and performance in Malaysia banks. *Australian Journal of Basic and Applied Sciences*, 9(28), 80-84.
- Bank for International Settlements (1996). *Capital requirement and bank behaviour. The impact of the Basle Accord*, BCBS Working Paper Series, 1, 1-59.
- Bank of International Settlements. (2011). The Impact of sovereign credit risk on bank funding conditions. *CGFS Paper*, 43. 1-46, BIS.
- Basel Committee and Banking Supervision (2007), Sound Practices for the Management and Supervision of operational Risks, Bank for International Settlements, Basec.
- Basel Committee on Bank Supervision, BCBS (2003). *Overview of the New Basel Capital Accord*. Technical report, Basel Committee on Bank Supervision, CH-4002 Basel, Switzerland. Consultative Document.
- Basel Committee on Banking Supervision (2001). *Risk management practices and regulatory capital: cross-sectional comparison* (available at www.bis.org).
- Basel Committee on Banking Supervision (2001). *Working paper on the regulatory treatment of operational risk*. Bank for International Settlements.
- Basel Committee, (2008). *Principles for sound liquidity risk management and supervision*. [pdf] Switzerland: Basel Committee on Banking Supervision. Available at: <<http://www.bis.org/publ/bcbs144.pdf>.

- Begumhan, O. & Cenktan, O. (2008). *Determining the factors of bank performance with a focus on risk and technical efficiency*. 2nd WSEAS Int. Conf. on Management, Marketing and Finances (MMF'08), Harvard, Massachusetts, USA, March 24-26, 20.
- Bessis, J. (2010) *Risk Management in Banking*. John Wiley & Sons Inc., New York.
- Bessis, J., (2002). *Risk management in banking*. John Wiley & Sons BGL (2015). BGL Banking Report. January.
- BGL Banking Report (2016). Getting banks to lend again. *The Banker's Magazine of June 2016*, publication of The Financial Times Ltd. London.
- Boahene, S. H., Dasah, J., & Agyei, S. K. (2012). Credit Risk and Profitability of Selected Banks in Ghana. *Research Journal of Finance and Accounting*, 3(7), 6-14. BOFID (1991). *Banks and other financial institutions decree: As amended in 1997, 1998, 1999 and 2002*.
- Bonsón, E., Tomás, E. & Francisco, F. (2007). *Issues in operational risk*, Financial Markets, Institutions and Instruments, 16, (4), 167-200.
- Broll, U., Pausch, T. & Welzel, P. (2002). *Credit risk and credit derivatives in banking*. Volkswirtschaftliche Diskussionsreihe, Beitrag Nr. 228, Institut für Volkswirtschaftslehre, University at Augsburg.
- Brunnermeier, M. K. & Yogo, M. (2009). A note on liquidity risk management (No. w14727). *National Bureau of Economic Research*.
- Cade, E. (1997). *Managing banking risks*. Cambridge, United Kingdom: Wood head Publishing.
- Casey, K.M., & Anderson, D.C. (1999). Examining the Impact of the Tax reform act on corporate dividend policy: A new methodology, *Journal of Financial Review*, 34 (3), 17-28
- CBN (2015). *Central Bank of Nigeria-banking supervision*.
- CBN Regulation (2010). CBN scope, conditions & minimum standards for commercial banks regulations No. 01, 2010.
- CBN-STABUL (2017). *Central Bank of Nigeria- Statistical Bulletin*.
- Cebenoyan, A. & Strahan, P. E. (2004). Risk management, capital structure and lending at banks. *Journal of Banking and Finance*, 28(1). 19-43.
- Central Bank of Nigeria (2006). *Code of Corporate Governance for banks in Nigeria post consolidation*. Retrieved on November 1, 2011.
- Central Bank of Nigeria Annual Reports, (2014), 2010-2013
- Central Bank of Nigeria Annual Reports (2021), 2019-2020.
- Central Bank of Nigeria Annual Reports, financial stability reports, 2020.

- Collier, P.M. & Woods, M., (2011). A Comparison of the Local Authority Adoption of Risk Management in England and Australia. *Australian Accounting Review*, 21(2),111-123.
- Colquitt, J. (2007). *Credit risk management: How to avoid lending disasters and maximize earnings*. 3rd Ed. New York, USA: McGraw-Hill CWBA, pp 24-35.
- Dahiyat, A. (2016). Does liquidity and solvency affect banks profitability? Evidence from listed banks in Jordan. *International Journal of Academic Research in Accounting, Finance and Management Sciences*, 6 (1), 35-40.
- Daramola R. Y. (2012). *An evaluation of the impact of banking sector reforms on economic growth*. In a thesis submitted to the Post- Graduate School Ahmadu Bello University, Zaria in Partial Fulfilment of the Requirements for the Award of Degree of Masters of Science (Economics).
- Darayseh, M. & Chazi, A. (2018). Bank specifics, economics environment, and agency theory: determinants of banking performance in GCC. *The Journal of Developing Areas*, 52(4), 199-212.
- Dhakan, A.A.M., (2006). Managing risk in financial sector in M.S. Umer Eds.2006.*Managing risk in financial sector*. Karachi: The Institute of Bankers Pakistan, 2(1),52-65.
- DiMaggio, P. J. & Powell, W. W. (1983). The iron cage revisited: institutional isomorphism and collective rationality in organizational fields. *American Sociological Review*, 48(2), 147-160.
- Dinh, H.T., & Pham, C. D. (2020). The effect of capital structure on financial performance of Vietnamese listing pharmaceutical enterprises. *Journal of Asian Finance, Economics and Business*, 7(9), 329-340.
- Doriana, C. (2013). The determinants of bank liquidity risk within the context of Euro area. *Interdisciplinary Journal of Research in Business*, 2(10), 51- 64.
- Drzik, J., (2005). New directions in risk management. *Journal of Financial Econometrics*, 3(1), 26-38.
- Edson, I. W. (2015). *The effect of financial leverage on commercial banks' profitability in Tanzania*. A Dissertation Submitted in Partial Fulfilment of the Requirements for the Degree of Master of Business Administration of the Open University of Tanzania.
- El Adlouni, S., Ezzahid, E., & Mouatassim, (2011). Mixed distributions for loss severity modelling with zeros in the operational risk losses. *International Journal of Applied Mathematics & Statistics*, 21(J11), 96-109.
- El- Massah, S. & Al-Sayed, O. (2015). Banking sector performance: Islamic and conventional banks in the UAE. *International Journal of Information Technology and Business Management*, 36(1), 69-81.

- Eneyew, L. (2003) Financial Risks and Profitability of Commercial Banks in Ethiopia. Masters of Science in Accounting and Finance. A thesis Submitted to the Department of Accounting and Finance Presented in Partial Fulfillment of the Requirement for the Degree of Master of Science (Accounting and Finance) Addis Ababa University, Ethiopia. Unpublished Master's Thesis.
- Eniola, O. J., Adewunmi, A. A. & Akinselure, O.P., (2017). Impact of capital structure on the profitability of selected quoted banks in Nigeria. *International Journal of Economics, Commerce and Management*, 5(1), 543-552.
- Ezeji, E. C. (2012). Analysis of effect of financing leverage on bank performance: evidence from Nigeria. *Journal of Public Administration and Governance*, 2(4), 178- 187
- Fapetu, D. & Kolapo, F. T., (2015). The influence of interest rate risk on the performance of deposit money banks in Nigeria. *International Journal of Economics, Commerce and Management*, 5(3). 7-10.
- Fatemi, A., & Glaum, M. (2000). Risk management practices of German firms. *Managerial Finance*, 26(3), 1-17.
- Fauziah, Z. A. & Mohd, (2009). The impact of financial risks on profitability of Malaysian commercial banks: 1996-2005. *International Journal of Social, Behavioural, Educational, Economic, Business and Industrial Engineering* 3, (6), 1320-1334.
- Fayyaz, A., (2006). Managing risk in financial sector. In M.S. Umer Eds.2006. *Managing risk in financial sector*. Karachi: The Institute of Bankers Pakistan, 4(2), 87-97.
- Ferrouhi, E. (2014). Bank Liquidity and Financial Performance: Evidence from Moroccan. Banking Industry. Business: Theory and Practice' 2014 15(4): 351–361. doi:10.3846/btp.2014.443.
- Gadzo, S.G., Kportorgbi, H.K. & Gatsi, J.G. (2019) Credit risk and operational risk on financial performance of universal banks in Ghana: A partial least squared structural equation model (PLS SEM) approach. *Cogent Economics & Finance*, 7: 1589406.1-16.
- Gallati, R., (2003). *Risk management and capital adequacy*. New York, USA: McGraw.
- Greuning, H. V. & Bratanovic, S. B. (2009). *Analysing and managing banking risk: A framework for assessing corporate governance and financial risk*. 3rd Edition Washington, D.C, The World Bank
- Gujarafi, D.N. (2003). *Basic Econometrics*. 4th Edition, McGraw-Hill, New York.
- Gupta, P.K., (2011). Risk management in Indian companies: EWRM concerns and issues. *The Journal of Risk Finance*, 12(2).121-139
- Hailu, A. (2015). *The impact of capital structure on profitability of commercial banks in Ethiopia*. A Thesis Presented in Partial Fulfilment of the Requirements for the Degree of Master of Science (Accounting and Finance), Addis Ababa University, Addis Ababa.

- Hannan L. & Hanweck, J. (1981). The efficiency cost of market power in the banking industry: A test of the "quiet life" and related hypotheses. *Review of Economics and Statistics*, 80 (95), 454-465.
- Haroon, J. (2014). Determinants of banks profitability. *IOSR Journal of Business and Management*. 16(1), 109-113.
- Hausman, J.A. (1978). Specification Test in Econometrics. *Econometrica*, 46:1251-1271.
- Heffernan S. (1996). *Modern banking in theory and Practice*", 5th ed., John Wiley and Sons Ltd, England.
- Hill Giulio, R. (2014). How to calculate a Loan Loss Provision coverage ratio. Demand Media.
- Horobet, A., Radulescu, M., Belascu, L., & Dita, S.M. (2021). Determinants of Bank Profitability in CEE Countries: Evidence from GMM Panel Data Estimates. *Journal of Risk and Financial Management* 14: 307.
- Hoyt, R. E. & Liebenberg, A. P. (2011). The value of enterprise risk management. *Journal of Risk and Insurance*, 78,795-822.
- Huang, L. & Dosterlee, L. (2010). Does bank performance benefit from non-traditional activities? A case of Non-interest incomes in Taiwan commercial banks. *Asian Journal of Management and Humanity Sciences*, 1(3), 359-378.
- Hubbard, R.G. & O'Brien, A.P., (2011). *Money, Banking, and the Financial System*, Prentice Hall.
- Hudin, N. S. & Hamid, A. B. A. (2014). Drivers to the implementation of risk management practices: A Conceptual Framework. *Journal of Advanced Management Science*, 2(3), 163-169.
- Ibe, S. O. (2013). The impact of liquidity management on the profitability of banks in Nigeria. *Journal of Finance and Banking Management*, 1(1), 37–48.
- Idowu, A. (2014). The impact of credit risk management on the commercial banks performance in Nigeria. *International Journal of Management and Sustainability*, 3(5), 295-306.
- Ikpefan, O. A. (2013). Capital adequacy, management and performance in the Nigerian commercial bank (1986 - 2006). *African Journal of Business Management*, 7(30), 2938-2950.
- Imbierowicz, B., Rauch, Ch. (2014). The relationship between liquidity risk and credit risk in Banks. *Journal of Baking & Finance*, 40 (1), 242- 246.
- Isa, M.Y.M., Choong, Y.V., Fie, D.Y.G., & Rashid, Md. J.H.A. (2018). Determinants of loan loss provisions of commercial banks in Malaysia. *Journal of Financial Reporting and Accounting*. 16 (1), 24-48.
- Ishfaq, M. (2006). Managing risk in financial sector in M.S. Umer Eds.2006. *Managing risk in financial sector*. Karachi: The Institute of Bankers Pakistan, 1(1)15-28.

- Jabbar, H. (2015). Determinants of banks profitability. *IOSR Journal of Business and Management*, 16 (1), 109-113.
- Jegade, C. (2014). Banking sector reform in Nigeria implication and challenges. *Journal of Policy and Development Studies*, 9(1), 248-257.
- Jensen, M.C. & Meckling, W.H., (1976). Theory of the firm: Managerial behaviour, agency costs and ownership structure. *Journal of Financial Economics*, 3(4), 305-60.
- John, E.E., & Oke, M.O., (2013). Capital adequacy standard, basle accord and bank performance: The Nigerian experience (A case study of selected banks in Nigeria), *Asian Economic and Financial Review*, 3 (2), 146-159.
- John, R., Simamora, M. & Oswari, T. (2019) The effects of credit risk, operational risk and liquidity risk on the financial performance of Banks listed in Indonesian stock exchange. *International Journal of Economics, Commerce and Management, United Kingdom*. 7, (5),182-193.
- Johnson, S., (1997). The effect of bank reputation on the value of bank loan agreement, *Journal of Accounting, Auditing and Finance*, 24, 83-100.
- Julius, B. A., Barine, M. N. & Oluwatosin, O. A. (2015). Capital Structure and Financial Performance in Nigeria. *International Journal of Business and Social Research*, 05(02), 21-31.
- Kagoyire A. & Shukla, J. (2016). Effect of credit management on performance of commercial banks in Rwanda. *International Journal of Business and Management Review* 4(4)1-12.
- Kanchu, T. & Kumar, M. M. (2013). Risk management in banking sector- an empirical study. *International Journal of Marketing, Financial Services & Management Research*, 2(2), 145-153.
- Kannan, N., & Thangavel, N., (2008). Risk management in the financial services industry. *Academic Open Internet Journal*, 22(7).
- Karimiyan, A., Nasserinia, A., & Shafiee, H. M. (2013). Relationship between loan loss provision and future earning, return and cash flow in Commercial Banks of Malaysia. *Proceedings of 4th Asia-Pacific Business Research Conference* 30 September – 1 October 2013, Bayview Hotel, Singapore.
- Kenny, A. S., Jumoke, O. O. & Faderera, O. A. (2014). Risk management practices and financial performance: evidence from the Nigerian Deposit Money Banks(DMBs). *International Conference on Business and Economic Development (ICBED), The Business & Management Review*, 4(4), 345-354.
- Kim, C.L. (2015). Liquidity risk, regulation and bank performance: Evidence from European Banks. *Global Economy and Finance Journal*, 8(1), 11-33.
- Klimczak, D., (2000). *The use of asset management companies in the resolution of banking crises: Cross-country experiences*, The World Bank Financial Sector Strategy and Policy Group February 2000. Policy Research Working Paper.

- Kolapo, T. F., Ayeni, R. K. & Oke, M. O. (2012). Credit risk and commercial banks' performance in Nigeria: A panel model approach. *Australian Journal of Business and Management Research*, 2(2), 31-38.
- Krakah, A. F. & Ameyam, A. (2010). *The determinants of bank's profitability in Ghana. The case of Merchant Bank (MBG) and Ghana Commercial Bank (GCB)*. Unpublished Thesis, MBA Programme, Department of Business Administration, University of Legon, Ghana.
- Kumari, D. (2015). *Effect of capital structure on profitability: evidences from Portugal and Spain*. Masters dissertation in Finance at the University of Porto.
- Kupiec, P. & Brien L. (1997), What factors explain differences in return on assets among community banks? Federal Deposit Insurance Corporation.
- Lartey, V., Antwi, S. & Boadi, E. (2013). The relationship between liquidity and profitability of listed banks in Ghana. *International Journal of Business and Social Science*, 4(3), 48–56.
- Le, T. P. V., & Phan, T. B. N. (2017). Capital structure and firm performance: Empirical evidence from a small transition country. *Research in International Business and Finance*, 42, 710-726.
- Lenee, T. L. & Sulaiman, Z. A. (2016). Capital adequacy measures and bank financial performance in Nigeria: A Cointegration Analysis. *Journal of Finance and Economic Research*, 3(1), 15-34.
- Locksley, (2011). Insolvency Risk in the Jamaican Banking Sector and its implications for Financial Stability. Financial Stability Department Bank of Jamaica.
- Ly, K.C., (2015) Liquidity Risk, Regulation and Bank Performance: Evidence from European Banks. *Global Economy and Finance Journal*, 8(1), 11-33.
- Lyambiko, M.R., (2015). *The effect of operational risk management practices on the financial performance in commercial banks in Tanzania*. A research proposal submitted in partial fulfilment of the requirement for the award of the degree of master of business administration to the school of business, university of Nairobi.
- Maaka Z.A., (2013). *The relationship between liquidity risk and financial performance of commercial banks in Kenya*. A research submitted to school of business, University of Nairobi.
- Macha, J. (2010), Operational Risk Management in the Financial Sectors in Tanzania Unpublished Paper, University of Dar Es Salam.
- Machuki, V. N.; Aosa, E. O. & Letting, K. (2012). Firm-level institutions and performance of publicly quoted companies in Kenya. *International Journal of Humanities and Social Science*, 2(21), 298-312.
- Maigua, C., & Mouni, G., (2016). Influence of interest rates determinants on the performance of commercial banks in Kenya. *International Journal of Academic Research in Accounting, Finance and Management Sciences*, 6(2), 121–133.

- Ndubuaku, V.C., Ozioma, I., Chiaka, N., & Samuel, O., (2017). Impact of Monetary Policy (Interest Rate) Regimes on the Performance of the Banking Sector in Nigeria. *IOSR Journal of Economics and Finance*. 8 (4), 16-32.
- Nelson, C., (2013). Sanusi's Four Years at CBN: *Development Agenda Versus Reality*' www.ngrguardiannews.com (retrieve on 9 June, 2017).
- Neter, J., Kutner, M.H., Nachtsheim, C.J., & Wasserman, W., (1996) *Applied Linear Statistical Models*. 4th Edition, WCB McGraw-Hill New York. NG%20LICENSING%2
- Nguyen, T.H., & Nguyen, H.A., (2020). Capital structure and firm performance of non-financial listed companies: Cross-sector empirical evidences from Vietnam. *Accounting Homepage*, 6, 137-150.
- Nigeria Galleria (2015). *Banks in Nigeria*. Retrieved on May 23, 2016 from http://www.nigeriagalleria.com/Banking_and_Finance/Banks.html.
- Nigeria Galleries (2015), Banks in Nigeria. Retrieved on May 23, 2016. Nigerian Security Exchange Fact books 2010, 2014 and 2019.
- Nikolaidou, E. & Vogiazas, S.D., (2014). Credit Risk Determinants for the Bulgarian Banking System. *International Advances in Economic Research*, 20(1), 87-104.
- Njogo, B.O. (2012). Risk management in the Nigerian Banking industry. *Kuwait Chapter of Arabian Journal of Business and Management Review*, 1(10), 100-109.
- Nora, A. A. & Maytham, H. S. (2015). An empirical analysis of liquidity risk and performance in Malaysia Banks. *Austrian Journal Basic & Applied Science*, 9(28), 80-84.
- Nou (2012). National Open University of Nigeria-Banking Methods Process – 308. Retrieved on August 29 2015.
- Nur, Omar & Fatema, (2017). *Financial performance and customer satisfaction of Islamic and Conventional banks in Bangladesh: A Comparative Study*, 45(1), 45-55.
- Nzioki, S.J., (2011). *The impact of capital adequacy on the financial performance of commercial banks quoted at the Nairobi stock exchange*. A Research Project submitted in partial fulfilment of the requirements for the degree of Masters of Business Administration-School of Business, University of Nairobi.
- Obadeyi, J., (2013). The impact of interest rates on the development of an emerging market: Empirical evidence of Nigeria. *Journal of Economic and Sustainable Development*, 4(10), 44– 58.
- Obidike, P.C., Ejeh, G.C., Ugochukwu, U.S., (2014). The impact of interest rate spread on the performance of Nigerian banking industry. *Journal of Economics and Sustainable Development*, 6 (12), 131-139.
- Odeke, S., & Odongo, J., (2014). Interest Rate Risk Exposure and Financial Performance of Commercial Banks in Uganda. *Research Journal of Finance and Accounting*, 5(2).

- Odunayo, M.O., & Oluwafeyisayo, K.A., (2015). Causal relationship between liquidity and profitability of Nigerian deposit money banks. *International Journal of Academic Research in Accounting, Finance and Management Sciences*, 5(2), 165–171.
- Office of the Comptroller of the Currency (2013). Bank supervision process: Comptroller's Handbook." [http://www.occ.gov/publications/publications-by-type/comptrollers-handbook/_pdf/banksupervisionprocess.pdf](http://www OCC.gov/publications/publications-by-type/comptrollers-handbook/_pdf/banksupervisionprocess.pdf).
- Ogboi, C., & Unuafe, O.K., (2013). Impact of credit risk management and capital adequacy on the financial performance of commercial banks in Nigeria. *Journal of Emerging Issues in Economics, Finance and Banking (JEIEFB)*, 2(3), 703-717.
- Ojong, C.M., Ekpuk, A., Ogar, A., & Emori, E.G., (2014). Banking sector reform in Nigeria: a regulatory imperative for a sustainable banking industry. *Research Journal of Finance and Accounting*, 5 (13), 166-189.
- Okafor E.E., (2013). Post-consolidation challenges and strategies for managing employees' resistance to change in the banking sector in Nigeria. *Journal of Social Sciences*, 19(2), 129-139.
- Okafor, E.E., (2013). Reforms in the Nigerian banking sector and strategies for managing human resource challenges. *European Journal of Business and Management*, 5(18), 127-137.
- Okoye, V., & Richard, E.O., (2013). Effect of Bank Lending on The Performance of the Nigerian Deposit Money Banks: *International Journal of Business and Management Review*, 1(1), 34-43.
- Olarewaju, O.M., & Adeyemi, O.K., (2015). Causal relationship between liquidity and profitability of Nigerian Deposit Money Banks. *International Journal of Academic Research in Accounting, Finance and Management Sciences*, 5(2), 165–171.
- Olweny, T. & Shipho, T. M. (2011). Effects of banking sectorial factors on the profitability of commercial banks in Kenya. *Economics and Finance Review*, 1(5), 1-30.
- Onwe, B. U. (2013). *The Nigerian Financial Market and the Challenges of Information Technology-based Operational*. Kuwait Chapter of *Arabian Journal of Business and Management Review*, 2(6).
- Otieno, S., Nyagol, M., & Onditi, A., (2016). Relationship between Credit Risk Management and Financial Performance: Empirical Evidence from Microfinance Banks in Kenya. *Research Journal of Finance and Accounting*, 7(6).
- Pamela, A.M., (2015). *The Effect of Research and Development on the Financial Performance of Manufacturing Companies Listed at the Nairobi Securities Exchange*. A PhD Thesis University of Nairobi.
- Panda, B., & Leepsa, N.M., (2017). Agency theory: Review of theory and evidence on problems and perspectives. *Indian Journal of Corporate Governance*, 10(1), 74–95.
- Pandey, I.M., (2010). *Financial management*, Tenth Edition, Vikas Publishing House PVT LTD, New Delhi, India.

- Pânzaru, S., (2011). Strategic management in commercial banks, *Review of General Management*, 14(2), 122-129.
- Pervan & Visic (2012). Influence of Firm Size on its Business Success. *Croatian Operational Research Review*, 3, 235-248. *practices: Panel evidence from the UK in the period 1999 – 2006*. Unpublished Dissertation, University of Nottingham, UK. Retrieved June 22, 2011, from e-dissertation. nottingham.ac.uk/137.
- Purnamawati, I.G.A., & MSi, A., (2014). The Effect of Capital and Liquidity Risk to Profitability on Conventional Rural Bank in Indonesia, *South East Asia Journal of Contemporary Business, Economics and Law*, 5 (1), 44-50.
- Raghavan, R.S., (2003). Risk Management in Banks. The Chartered Accountant.
- Raja A., Sami, B.N., & Alessandro, D.S., (2015). How does bank competition affect solvency, liquidity and credit risk? Evidence from the MENA countries. *IMF Working Papers* describe research in progress by the author(s) and published to elicit comments and to encourage debate 2015 International Monetary Fund WP/15/210 Retrieved from <https://www.imf.org/external/pubs/ft/wp/2015/wp15210.pdf>
- Romar & Swati, (2008) *Operational risk measurement for the Indian banking sector: Alternative measures*. Published by University of Mumbai (Department of Economics)
- Sadiq, A.I., Kachollom, P.W., Dasuki, S.I., & Yusuf, M., (2017). Effect of capital structure on the performance of deposit money banks. *International Journal of Accounting & Finance Review*, 1(1), 12-23.
- Samuel, H.B., Julius, D., & Samuel, K.A., (2012). Credit risk and profitability of selected banks in Ghana. *Research Journal of Finance and Accounting* 3(7), 6-14.
- Samuel, S., (2013). *Liquidity risk and bank profitability in Ghana*. Unpublished thesis submitted to the University of Ghana, Legon in partial fulfilment of the requirement for the award of Mphil finance degree.
- Sangare, K., (2017). Credit Risk and financial performance: Evidence from WAEMU Countries. *IOSR Journal of Economics and Finance (IOSR-JEF)*, 8(1), 5-11.
- Sanusi L.S., (2012). Banking reform and its impact on the Nigerian Economy. Lecture by Mr Sanusi Lamido Sanusi, Governor of the Central Bank of Nigeria, at the University of Warwick's Economic Summit, Warwick, 17 February 2012.
- Sanusi, L.S., (2010). *Banking Reform – What Went Wrong*. Vanguard Newspaper, March 1, 2010.
- Sattar, A., (2014). Impact of interest rate changes on the profitability of four major commercial banks in Pakistan. *International Journal of Accounting and Financial Reporting*, 4(1), 142-154.
- Saunders, S., & Cornett, T., (2007). *Financial markets and institutions: An introduction to the risk management approach*. McGraw Hill Pub.2007.

- Sayed, S.N., (2017). Financial factors and economic performance: The roles of Deposit Money Banks in Nigeria. A thesis submitted to the school of postgraduate studies, Ahmadu Bello University, Zaria in partial fulfilment of the requirements for the award of Doctorate Degree in Business Administration.
- Scott, W.R., (1995). *Institutions and Organizations*, Thousand Oaks, USA: Sage Publications, Inc.
- Senan, N.A.M., Anagreh, S., Al-Dalaen, B.O.A., Almugari, F., Khaled, A.S., & Al-Homaidi, E.A., (2021a). Working capital management and banks' performance: evidence from India. *The Journal of Asian Finance, Economics and Business*, 8(6), 747-758.
- Senan, N. A. M., Noaman, A. A. A., Al-dalaen, B. O. A., & Al-Homaidi, E. A. (2021b). Corporate social responsibility disclosure and profitability: Evidence from Islamic banks working in Yemen.
- Shaba, Y., Yaaba, B. N. & Abubakar, I. (2015). Capital structure and profitability of deposit money banks: empirical evidence from Nigeria. *European Journal of Business and Management*, 8 (23), 110-121
- Shar, A., Ali, M., Jamali, H., (2010). Performance evaluation of pre-post nationalization of banking sector in Pakistan: An application of cisa-stress test. *International Journal of Business and Management* 5(11), 112-128.
- Siaw, S. (2013). *Liquidity risk and bank profitability in Ghana*. Thesis submitted to the university of Ghana, Legon in partial fulfilment of the requirement for the Award of Mphil Finance Degree.
- Siddik, N. S., Kabiraj, S. & Joghee, S. (2017). Impacts of capital structure on performance of banks in a developing economy: Evidence from Bangladesh. *International Journal of Finance Studies*, 5(13), 1-18.
- Smith, C. and Stulz, R., (1985). The determinants of firms' hedging policies. *Journal of Financial and Quantitative Analysis*, 20(4),391- 405.
- Soludo, C. (2004). *Briefing on current reforms in the Nigerian banking sector*. A Brief Held with Foreign Diplomats and Other Nationals in the Country at the Wake of the Recent Banking Industry Reforms.
- Somoye, R. O. C. (2008). The performance of commercial banks in post-consolidation period in Nigeria: An empirical review, *European Journal of Economics, Finance and Administrative, Issue*, (14), 63-74.
- Soyemi, K. A., Akinpelu, L. & Ogunleye, J. O. (2000). The Determinants of profitability among Deposit Money Banks (DMBs) in Nigeria post consolidation', *Global Advanced Research Journal of Economics, Accounting and Finance*, 2(5), 93-103.
- Sufian, F., (2011). Profitability of the Korean banking sector: panel evidence on bank specific and macroeconomic determinants. *Journal of Economics and Management*, 7(1), 43-72.

- Sushil, S., & Bivab, N., (2013). *Determinants of banks liquidity and their impact on financial performance in Nepalese Commercial banks*. Unpublished thesis submitted to Ace Institute of Management, Pokhara University.
- Tabachnick, B.G., & Fidell, L.S., (1996). *Using Multivariate Statistics* (3rd ed.). New York: Harper Collins.
- Tufano, P., (1998). Agency costs of corporate risk management. *Financial Management*, 27(1), 67-77.
- Ullah, A., Pinglu, C., Ullah, S., Zaman, M., & Hashmi, S. (2020). The nexus between capital structure, firm-specific factors, macroeconomic factors and financial performance in the textile sector of Pakistan. *Heliyon*, 6(8), 41-47.
- Uwalomwa U., Uwuigbe O., and Oyewo B., (2015). Credit management and financial performance of listed banks in Nigeria. *Journal of Economics and Sustainable Development*, 6(2), 27-32.
- Vargha, A., Bergman L.R. & Delaney, H.D. (2013). International Problems of the Partial Correlation with normally distributed variables. *Quality and Quantity*, 47 (6), 3391-3402.
- Virginie, T. (2013). *The effect of bank size on risk ratios: Implications of banks' performance*. Centre for Research in Economics and Management (CREA) University of Luxembourg.
- Wambari, K. D. & Mwangi, M. (2017). Effect of interest rates on the financial performance of commercial banks in Kenya. *International Journal of Finance and Accounting*, 2(4), 19- 35.
- Wambu, T. M. (2013). *The relationship between profitability and liquidity of Commercial Banks in Kenya* (Doctoral dissertation, University of Nairobi).
- Worzak, E. (1995). Currency risk and International property valuation and investments. *Journal of Property valuation and investment*, 13(5), 23-38.
- Yuqi, L. (2008). *Determinants of banks' profitability and its implication on risk management*.
- Zahangir, A., and Masukujj, A., (2011). Risk management practices: A critical diagnosis of some selected Commercial Banks in Bangladesh. *Journal of Business and Technology*, 6(01):15-35.
- Zaphaniah A.M., (2013). *The relationship between liquidity risk and financial performance of Commercial Banks in Kenya*. A Research Project Submitted in Partial Fulfilment of the Requirements for the Award of the Degree of Master of Business Administration (MBA), School of Business, University of Nairobi.

APPENDIX I

RESEARCH OUTPUT

Descriptive Statistics

variable	min	max	mean	sd	skewness	kurtosis
ROA	-.5312842	.0701227	.0125363	.0586664	-6.919898	58.94215
ROE	-3.866189	2.099736	.1326773	.4360421	-4.130545	55.74747
CAR	-5.862929	192.2096	8.462855	16.23768	10.28899	115.7943
CR	-1.483819	57.68974	3.468481	4.989643	9.24755	99.10592
LR	.2728267	1.159599	.6505141	.1912233	.2315356	2.426188
SR	-.7891492	1.318653	.7378693	.3972831	-2.769394	9.543278
MR	2.717065	2.943956	2.826503	.0520336	.1656973	3.996576
OR	-4.625535	820.6363	22.93707	95.48929	5.588727	39.78102
CLLP	-6.667333	4.998616	.0295032	1.384068	-2.349109	14.27494

Correlation Matrix

	ROA	ROE	CAR	CR	LR	SR	MR	OR	CLLP
ROA	1.0000								
ROE	-0.2473	1.0000							
CAR	0.0281	-0.7050	1.0000						
CR	0.0509	-0.6929	0.9822	1.0000					
LR	0.1911	0.0007	-0.1164	-0.0029	1.0000				
SR	-0.1791	0.0061	-0.0471	-0.0791	-0.0326	1.0000			
MR	-0.0203	-0.0891	-0.0393	-0.0086	0.1775	0.0078	1.0000		
OR	0.0314	-0.0190	-0.0410	-0.0409	0.0313	0.0429	-0.1079	1.0000	
CLLP	-0.0445	0.0558	-0.0935	-0.0516	0.1544	0.1047	0.0827	-0.0408	1.0000

Multicollinearity VIF

Variable	VIF	1/VIF
CAR	48.42	0.020653
CR	47.77	0.020933
LR	1.61	0.622194
CLLP	1.08	0.921842
SR	1.07	0.937970
MR	1.05	0.948393
OR	1.02	0.979955
Mean VIF	14.57	

Fixed Effect Result on ROA Model

Fixed-effects (within) regression	Number of obs	=	144
Group variable: ID	Number of groups	=	12
R-sq: within = 0.1080	Obs per group: min =		12
between = 0.0686	avg =		12.0
overall = 0.1008	max =		12
	F(11,121)	=	1.33
corr(u_i, Xb) = -0.0216	Prob > F	=	0.2147

ROA	Coef.	Std. Err.	t	P> t	[95% Conf. Interval]	
CAR	.002309	.000954	2.42	0.017	.0004203	.0041976
LR	.0341112	.0307221	1.11	0.269	-.0267114	.0949338
SR	-.0122362	.0133147	-0.92	0.360	-.0385961	.0141238
OR	.0000584	.0001221	0.48	0.633	-.0001833	.0003
MR	-.0009639	.0950479	-0.01	0.992	-.1891364	.1872085
CLLP	.1163717	.1934581	0.60	0.549	-.2666297	.4993731
CARCLLP	.0015985	.0007659	2.09	0.039	.0000822	.0031149
LRCLLP	.0157703	.0254878	0.62	0.537	-.0346896	.0662301
SRCLLP	.001676	.010036	0.17	0.868	-.0181929	.0215449
ORCLLP	5.51e-06	.0000654	0.08	0.933	-.0001239	.0001349
MRCLLP	-.0483736	.0695563	-0.70	0.488	-.1860787	.0893314
_cons	-.0160056	.2665347	-0.06	0.952	-.5436814	.5116702

Random Effect Result on ROA Model

Random-effects GLS regression	Number of obs	=	144
Group variable: ID	Number of groups	=	12
R-sq: within = 0.0923	Obs per group: min =		12
between = 0.2820	avg =		12.0
overall = 0.1196	max =		12
	Wald chi2(11)	=	17.92
corrstru_1, X) = 0 (assumed)	Prob > chi2	=	0.0834

ROA	Coef.	Std. Err.	z	P> z	(95% Conf. Interval)	
CAR	.0019941	.0009062	2.20	0.028	.0002181	.0037702
LS	.0589872	.0245455	2.22	0.026	.0069589	.1110155
SB	-.0100303	.0134514	-1.12	0.264	-.0413944	.0113339
OR	.0000212	.0000619	0.35	0.730	-.0000994	.0001419
MR	-.0179409	.0989588	-0.18	0.886	-.2118945	.1740147
CLD	.1399397	.1973894	0.71	0.478	-.2469364	.5268158
CARCLLP	.0016048	.0007291	2.20	0.028	.0001757	.0030339
LRCLLP	.0149852	.025738	0.58	0.560	-.0354604	.0634309
SPCLLP	.0038686	.0098417	0.39	0.694	-.0154208	.023158
ORCLLP	-9.10e-06	.0000536	-0.17	0.868	-.0001142	.0000936
MRCLLP	-.0572357	.0709871	-0.81	0.420	-.1963678	.0818964
_cons	.0212885	.2781649	0.08	0.939	-.5239046	.5664816

Hausman Test for Fixed Effect and Random Effect Selection of the ROA Model

hausman fixed

	Coefficients		(b-B) Difference	sqrt(diag(V_b-V_B)) S.E.
	(b) fixed	(B) random		
CAR	.002309	.0019941	.0003148	.0002983
LR	.0341112	.0589872	-.024876	.0154656
SR	-.0122362	-.0150303	.0027942	.
OR	.0000584	.0000212	.0000371	.0001054
MR	-.0009639	-.0179409	.016977	.
CLLP	.1163717	.1399397	-.023568	.
CARCLLP	.0015985	.0016048	-6.30e-06	.0002345
LRCLLP	.0157703	.0149852	.000785	.
SRCLLP	.001676	.0038686	-.0021926	.0019652
ORCLLP	5.51e-06	-9.10e-06	.0000146	.0000374
MRCLLP	-.0483736	-.0572357	.0088621	.

b = consistent under Ho and Ha; obtained from xtreg

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

Test: Ho: difference in coefficients not systematic

chi2(11) = (b-B)'[(V_b-V_B)^(-1)](b-B)

= 18.47

Prob>chi2 = 0.0712

(V_b-V_B is not positive definite)

Fixed Effect Result on ROE Model

Fixed-effects (within) regression	Number of obs	=	144
Group variable: ID	Number of groups	=	12
R-sq: within	=	0.5938	
between	=	0.0587	
overall	=	0.5424	
	Obs per group: min	=	12
	avg	=	12.0
	max	=	12
	F(11,121)	=	16.08
corr(u_i, Xb)	=	-0.2515	
	Prob > F	=	0.0000

ROE	Coef.	Std. Err.	t	P> t	[55% Conf. Interval]	
CAR	-.0075186	.0052059	-1.44	0.151	-.017825	.0027878
LR	-.1504704	.1676503	-0.90	0.371	-.4823784	.1814377
SR	.0333465	.0726581	0.46	0.647	-.1104993	.1771923
OR	-.0000243	.0006661	-0.04	0.971	-.0013429	.0012944
MR	-.9956423	.5186752	-1.92	0.057	-2.022497	.031212
CLLP	-1.561727	1.055698	-1.48	0.142	-3.65176	.5283067
CARCLLP	.0113657	.0041796	2.72	0.008	.003091	.0196404
LRCLLP	-.1622372	.1390867	-1.17	0.246	-.4375959	.1131215
SRCLLP	.0858033	.0547663	1.57	0.120	-.0226212	.1942277
ORCLLP	.0002056	.0003567	0.58	0.565	-.0005005	.0009118
MRCLLP	.5368104	.3795677	1.41	0.160	-.214644	1.289265
_cons	3.107225	1.454476	2.14	0.035	.2277055	5.986744

Random Effect Result on ROE Model

Random-effects GLS regression	Number of obs	=	144
Group variable: ID	Number of groups	=	12
R-sq: within = 0.5921	Obs per group: min	=	12
between = 0.0865	avg	=	12.0
overall = 0.5450	max	=	12
	Wald chi2(11)	=	158.12
corr(u_i, X) = 0 (assumed)	Prob > chi2	=	0.0000

ROE	Coef.	Std. Err.	z	P> z	[95% Conf. Interval]	
CAR	-.0084539	.0048415	-1.75	0.081	-.0179431	.0010353
LR	-.0972738	.1418312	-0.69	0.493	-.3752578	.1807102
SR	.0368307	.07187	0.51	0.608	-.1040319	.1776933
OR	-.0002422	.0003288	-0.74	0.461	-.0008867	.0004023
MR	-1.004409	.5287303	-1.90	0.057	-2.040702	.0318831
CLLP	-1.393013	1.054639	-1.32	0.187	-3.460068	.6740413
CARCLLP	.0091791	.0038957	2.36	0.018	.0015437	.0168146
LRCLLP	-.1852673	.1375167	-1.35	0.178	-.4547951	.0842605
SRCLLP	.0723203	.0525836	1.38	0.169	-.0307418	.1753823
ORCLLP	.0001133	.0002864	0.40	0.692	-.000448	.0006746
MRCLLP	.4904909	.3792793	1.29	0.196	-.2528829	1.233865
_cons	3.104894	1.486217	2.09	0.037	.1919621	6.017826

Hauman Test for Fixed Effect and Random Effect Selection of the ROE Model

hausman fixed

	Coefficients		(b-B) Difference	sqrt(diag(V_b-V_B)) S.E.
	(b) fixed	(B) random		
CAR	- .0075186	- .0084539	.0009353	.0019133
LR	- .1504704	- .0972738	-.0531966	.0893899
SR	.0333465	.0368307	-.0034842	.0106724
OR	- .0000243	- .0002422	.0002179	.0005792
MR	- .9956423	- 1.004409	.0087669	
CLLP	-1.561727	-1.393013	-.1687134	.0472815
CARCLLP	.0113657	.0091791	.0021866	.0015142
LRCLLP	- .1622372	- .1852673	.0230301	.0208387
SRCLLP	.0058033	.0723203	.013483	.0153073
ORCLLP	.0002056	.0001139	.0000923	.0002127
MRCLLP	.5368104	.4904909	.0463195	.0147931

b = consistent under H₀ and H_a; obtained from xtreg
B = inconsistent under H_a, efficient under H₀; obtained from xtreg

Test: H₀: difference in coefficients not systematic

chi2(11) = (b-B)'(IV_b-V_B)^(-1)(b-B)
= 1902.43 chi2<0 ==> model fitted on these
data fails to meet the asymptotic
assumptions of the Hausman test.

Panel Heteroskedasticity Test for ROA Model

```
. xttest3
```

Modified Wald test for groupwise heteroskedasticity
in fixed effect regression model

H0: $\sigma_i^2 = \sigma^2$ for all i

```
chi2 (12) = 39023.26  
Prob>chi2 = 0.0000
```

Panel Heteroskedasticity Test for ROE Model

```
. xttest3
```

```
Modified Wald test for groupwise heteroskedasticity  
in fixed effect regression model
```

```
H0:  $\sigma(i)^2 = \sigma^2$  for all i
```

```
chi2 (12) = 25599.10  
Prob>chi2 = 0.0000
```

Panel Corrected Standard Error PCSE Regression for ROA Model

Linear regression, correlated panels corrected standard errors (PCSEs)

Group variable:	ID	Number of obs	=	144	
Time variable:	YEAR	Number of groups	=	12	
Panels:	correlated (balanced)	Obs per group: min	=	12	
Autocorrelation:	no autocorrelation	avg	=	12	
		max	=	12	
Estimated covariances	=	78	R-squared	=	0.1195
Estimated autocorrelations	=	0	Wald chi2(11)	=	21.01
Estimated coefficients	=	12	Prob > chi2	=	0.0333

ROA	Panel-corrected					[95% Conf. Interval]
	Coef.	Std. Err.	z	P> z		
CAR	.0019941	.0008957	2.23	0.026	.0002386	.0037497
LQ	.0589872	.0230588	2.56	0.011	.0137927	.1041816
SR	-.0150303	.012983	-1.16	0.247	-.0404766	.010416
OR	.0000212	.0000227	0.94	0.350	-.0000233	.0000657
MR	-.0179409	.0922139	-0.19	0.846	-.1986769	.162795
CLLP	.1399397	.1664856	0.84	0.401	-.186366	.4662455
CARCLLP	.0016048	.0008132	1.97	0.048	.0000109	.0031987
LRCLLP	.0149852	.0296734	0.51	0.614	-.0431736	.0731441
SRCLLP	.0038686	.0075865	0.51	0.610	-.0110006	.0187378
ORCLLP	-9.10e-06	.0000232	-0.39	0.695	-.0000545	.0000363
MRCLLP	-.0572357	.0587501	-0.97	0.330	-.1723838	.0579124
_cons	.0212885	.257779	0.08	0.934	-.483949	.5265259

Panel Corrected Standard Error PCSE Regression for ROE Model

Linear regression, correlated panels corrected standard errors (PCSEs)

Group variable:	ID	Number of obs	=	144	
Time variable:	YEAR	Number of groups	=	12	
Panel:	correlated (balanced)	Obs per group: min	=	12	
Autocorrelation:	no autocorrelation	avg	=	12	
		max	=	12	
Estimated covariances	=	78	R-squared	=	0.5450
Estimated autocorrelations	=	0	Wald chi2(11)	=	49.72
Estimated coefficients	=	12	Prob > chi2	=	0.0000

ROE	Panel-corrected					
	Coef.	Std. Err.	z	P> z	[95% Conf. Interval]	
CAR	-.0004539	.0049610	-1.70	0.088	-.0101789	.0012711
LR	-.0972738	.109285	-0.89	0.373	-.3114685	.1169208
SR	.0368307	.0480179	0.77	0.443	-.0572825	.130944
OR	-.0002422	.0000846	-2.86	0.004	-.0004079	-.0000764
MR	-1.004409	.2910427	-3.45	0.001	-1.574842	-.4339761
CLLP	-1.393013	.7697689	-1.81	0.070	-2.901732	.1157062
CARCLLP	.0091791	.0046143	1.99	0.047	.0001354	.0182229
LRCLLP	-.1852673	.142196	-1.30	0.193	-.4639663	.0934318
SRCLLP	.0723203	.0415388	1.74	0.082	-.0090942	.1537347
ORCLLP	.0001133	.0001033	1.10	0.273	-.0000892	.0003158
MRCLLP	.4904909	.2714655	1.81	0.071	-.0415717	1.022554
_cons	3.104894	.8143307	3.81	0.000	1.508835	4.700953

**Akaike's Information Criterion (AIC) and Bayesian Information Criterion(BIC) for
ROA Model**

Akaike's information criterion and Bayesian information criterion

Model	Obs	ll(null)	ll(model)	df	AIC	BIC
.	144	218.2982	226.531	12	-429.0619	-393.4242

Note: N=Obs used in calculating BIC; see [R] BIC note

Akaike's Information Criterion (AIC) and Bayesian Information Criterion(BIC) for

ROE Model

Akaike's information criterion and Bayesian information criterion

Model	Obs	ll(null)	ll(model)	df	AIC	BIC
.	144	-82.68337	-17.82214	12	59.64428	95.28204

Note: N=Obs used in calculating BIC; see [R] BIC note

APPENDIX II

POPULATION OF THE STUDY

S/No	BANK
1	Access Bank Plc.
2	EcoBank Nigeria Ltd.
3	Fidelity Bank Plc.
4	First Bank of Nigeria Plc
5	First City Monument Bank Plc.
6	Guaranty Trust Bank Plc.
7	Stanbic IBTC Bank Plc.
8	Sterling Bank Plc.
9	Union Bank of Nigeria Plc.
10	United Bank for Africa Plc.
11	Wema Bank Plc.
12	Zenith Bank Plc
13	Heritage Bank Plc
14	Jaiz Bank Plc.
15	Unity Bank Plc.

Source: CBN Website, 2018

APPENDIX III:
DATA

ACCESS	YEAR	ROA	ROE	CAR	CR	LR	SR	OR	MR	LLP
DIAMOND	2007	0.0245	0.2834	11.5771	3.7961	0.5250	0.9136	0.4640	2.83	0.4337
	2008	0.0182	0.1114	6.1021	1.4304	0.6953	0.8361	0.7983	2.72	0.0718
	2009	0.0416	0.1521	3.6513	2.1192	0.8980	0.7261	0.6372	2.94	0.1891
	2010	0.0243	0.0968	3.9832	2.2091	0.8483	0.7489	0.3333	2.87	0.8637
	2011	0.0169	0.0862	5.0903	2.4921	0.7196	0.8035	0.3506	2.77	-0.4224
	2012	0.0239	0.1526	6.3788	2.3468	0.5023	0.8432	0.5505	2.82	0.5588
	2013	0.0184	0.1279	6.9503	3.0522	0.5853	0.8561	0.3841	2.82	-0.4070
	2014	0.0233	0.1683	7.2293	3.9236	0.7371	0.8617	0.5194	2.81	0.3129
	2015	0.0270	0.1808	6.6919	3.6169	0.8191	0.8506	0.5753	2.82	0.6436
	2016	0.0260	0.1911	7.3396	4.0281	0.8902	0.8638	0.5921	2.83	0.0095
	2017	0.0192	0.1428	7.4542	3.9888	0.8563	0.8658	0.3720	2.87	0.3353
	2018	0.0190	0.1707	9.0021	4.0444	0.6664	-0.5631	0.4723	2.83	-0.0511
	2007	0.0282	0.1632	5.7940	1.7885	0.4554	0.8274	0.3713	2.83	0.4052
	2008	0.0250	0.1287	5.1574	1.9785	0.5733	0.8061	0.4812	2.72	0.2915
	2009	-0.0140	-0.0777	5.5562	3.8037	0.9889	0.8200	-0.1785	2.94	1.8268

2010	0.0175	0.0851	4.8722	3.2459	0.9419	0.7948	0.1513	2.87	-0.4279
2011	-0.0382	-0.3244	8.4870	4.9502	0.7585	0.8822	-0.4407	2.77	-0.4120
2012	0.0268	0.2643	9.8693	5.9335	0.7660	0.8987	0.3619	2.82	0.7633
2013	0.0245	0.2404	9.7968	4.9951	0.6283	0.8979	0.3897	2.82	-0.0322
2014	0.0139	0.1187	8.5105	4.5055	0.6791	0.8825	0.2434	2.81	0.2487
2015	0.0033	0.0249	7.4741	3.4400	0.6319	0.8662	0.0436	2.82	0.8764
2016	0.0020	0.0156	7.8666	4.2264	0.7779	0.8729	0.0203	2.83	0.1699
2017	0.0013	0.0103	7.9393	3.5375	0.6346	0.8740	0.0098	2.87	0.0902
2018	0.0044	0.2153	48.3912	19.9961	0.5103	-0.7891	0.0757	2.83	0.5555
GTB 2007	0.0321	0.3236	10.0850	2.3972	0.3910	0.9008	0.7357	2.83	-0.2402
2008	0.0377	0.2149	5.7017	2.5705	1.1596	0.8246	0.7903	2.72	1.1641
2009	0.0350	0.1805	5.1634	2.7514	0.8297	0.8063	0.6332	2.94	3.4380
2010	0.0420	0.2103	5.0050	2.6540	0.8018	0.8002	0.7054	2.87	0.1870
2011	0.0425	0.2765	6.5058	2.9017	0.6905	0.8463	0.8509	2.77	0.1388
2012	0.0618	0.3495	5.6548	2.5917	0.6997	0.8232	1.2661	2.82	-0.2438

2013	0.0528	0.3098	5.8724	2.8585	0.7345	0.8297	1.1873	2.82	-1.6422
2014	0.0519	0.3067	5.9087	3.2853	0.8213	0.8308	0.9442	2.81	0.1667
2015	0.0496	0.2787	5.6153	3.1209	0.8898	0.8219	0.9785	2.82	1.2768
2016	0.0579	0.3174	5.4796	2.9717	0.8430	0.8175	1.0682	2.83	0.2910
2017	0.0650	0.3143	4.8344	2.1665	0.7458	0.7931	1.2616	2.87	0.1608
2018	0.0701	0.3716	5.2995	2.0866	0.5724	-0.4992	1.3130	2.83	-1.3400
FCMB 2007	0.0226	0.1913	8.4505	2.6871	0.4453	0.8817	0.5439	2.83	0.8197
2008	0.0323	0.1130	3.4967	1.3964	0.7429	0.7140	0.7080	2.72	0.7784
2009	0.0093	0.0368	3.9786	2.0849	0.8411	0.7487	0.1509	2.94	1.6933
2010	0.0168	0.0677	4.0298	2.4798	0.9854	0.7518	0.2521	2.87	-0.4370
2011	-0.0178	-0.0910	5.1248	2.7544	0.7874	0.8049	-0.1281	2.77	0.1511
2012	0.0179	0.1231	6.8821	2.7103	0.5536	0.8547	0.2678	2.82	0.4699
2013	0.0180	0.1261	7.0162	3.1351	0.6299	0.8575	0.2740	2.82	-0.1201
2014	0.0204	0.1489	7.2919	3.8536	0.8367	0.8629	0.2868	2.81	0.0047
2015	0.0067	0.0478	7.1404	3.6514	0.8403	0.8600	0.0580	2.82	0.4192
2016	0.0139	0.0909	6.5565	3.6894	0.9671	0.8475	0.1927	2.83	-0.2079

	2017	0.0097	0.0607	6.2772	3.4387	0.9419	0.8407	0.1409	2.87	0.3809
	2018	0.0129	0.1005	7.8031	3.4512	0.7704	-0.4460	0.2048	2.83	0.0841
FIDELITY	2007	0.0203	0.1480	7.2973	2.3604	0.3975	0.8630	460.1778	2.83	-0.1347
	2008	0.0296	0.1163	3.9239	1.6981	0.6076	0.7452	820.6363	2.72	-1.5705
	2009	0.0091	0.0353	3.8970	2.0135	0.7314	0.7434	88.3370	2.94	2.7145
	2010	0.0174	0.0619	3.5555	2.2827	0.9375	0.7187	199.3159	2.87	0.7985
	2011	0.0111	0.0603	5.4236	2.5937	0.6303	0.8156	155.2609	2.77	-1.4579
	2012	0.0233	0.1322	5.6632	2.7469	0.6188	0.8234	353.4748	2.82	0.5604
	2013	0.0083	0.0552	6.6148	2.6067	0.5284	0.8488	142.1784	2.82	0.1278
	2014	0.0131	0.0896	6.8570	3.1291	0.6606	0.8542	241.6154	2.81	-0.2245
	2015	0.0114	0.0764	6.7118	3.1507	0.7513	0.8510	209.0261	2.82	0.1739
	2016	0.0085	0.0597	7.0018	3.8748	0.9060	0.8572	309.4284	2.83	0.7462
	2017	0.0147	0.0999	6.7836	3.7810	0.9916	0.8526	282.4426	2.87	0.2848
	2018	0.0146	0.1290	8.8464	4.3715	0.8677	-0.4564	0.3179	2.83	0.0630
FIRST	2007	0.0498	0.1119	2.2448	0.6450	0.3313	0.5545	1.2437	2.83	0.7892

2008	0.0396	0.1313	3.3199	1.2470	0.4084	0.6988	0.8047	2.72	0.4356
2009	0.0138	0.0821	5.9570	4.7031	1.0467	0.8321	0.1394	2.94	1.0852
2010	0.0143	0.0841	5.8637	4.3222	1.0876	0.8295	0.2446	2.87	0.4360
2011	0.0125	0.0973	7.7600	4.6539	0.8035	0.8711	0.1276	2.77	0.3855
2012	0.0291	0.2128	7.3108	4.4894	0.7974	0.8632	0.3969	2.82	0.1177
2013	0.0236	0.1936	8.2009	4.6626	0.7305	0.8781	0.3812	2.82	0.1974
2014	0.0217	0.1795	8.2886	5.0374	0.8193	0.8794	0.3563	2.81	-0.0549
2015	0.0052	0.0373	7.1980	3.8062	0.7071	0.8611	0.0690	2.82	1.1868
2016	0.0048	0.0394	8.1308	4.3407	0.7183	0.8770	0.0560	2.83	0.7998
2017	0.0109	0.0831	7.6593	4.0138	0.7205	0.8694	0.1710	2.87	-0.1076
2018	0.0117	0.1230	10.4934	4.8003	0.6013	-0.6654	0.2304	2.83	0.3227
STERLING 2007	0.0043	0.0232	5.4467	1.7148	0.4298	0.8164	0.0609	2.83	-0.0241
2008	0.0329	0.2576	7.8212	2.1756	0.3561	0.8721	0.4671	2.72	-0.1796
2009	-0.0441	-0.4098	9.2874	3.5290	0.4865	0.8923	-0.3427	2.94	0.8501
2010	0.0142	0.1401	9.8623	3.5452	0.4683	0.8986	0.2647	2.87	-0.6020
2011	0.0112	0.1374	12.2767	3.9472	0.3955	0.9185	0.3371	2.77	-0.2102

2012	0.0129	0.1608	12.4399	4.9187	0.4914	0.9196	0.2176	2.82	0.1108
2013	0.0132	0.1481	11.2501	5.1184	0.5640	0.9111	0.2068	2.82	0.0606
2014	0.0130	0.1269	9.7331	4.3823	0.5660	0.8973	0.1779	2.81	0.0384
2015	0.0138	0.1153	8.3655	3.5444	0.5732	0.8805	0.2073	2.82	0.8386
2016	0.0072	0.0702	9.6967	5.4652	0.7695	0.8969	0.1024	2.83	-0.0847
2017	0.0080	0.0830	10.3875	5.8126	0.8594	0.9037	0.1611	2.87	0.5931
2018	0.0080	0.0892	11.0793	6.3363	0.8165	-0.6102	0.1414	2.83	0.1520
2007	0.0289	0.1215	4.2048	1.0996	1.0991	0.7622	0.3589	2.83	0.1806
2008	0.0305	0.1376	4.5130	1.2923	1.0010	0.7784	0.3710	2.72	-0.1071
2009	0.0239	0.0999	4.1779	1.3560	0.6531	0.7606	0.2284	2.94	-6.6673
2010	0.0246	0.1087	4.4211	1.8850	0.8793	0.7738	0.2553	2.87	0.0215
2011	0.0134	0.0910	6.7772	2.8211	0.7891	0.8524	0.1472	2.77	-0.7031
2012	0.0169	0.1332	7.9021	3.1705	0.7108	0.8735	0.1824	2.82	1.0138
2013	0.0351	0.2644	7.5236	3.7934	0.8203	0.8671	0.3799	2.82	-0.0678
2014	0.0462	0.3620	7.8334	3.3883	0.7353	0.8723	0.5638	2.81	0.3171
STANBIC									

2015	0.0252	0.1834	7.2698	2.9488	0.6457	0.8624	0.2453	2.82	0.6506
2016	0.0353	0.2643	7.4825	2.6153	0.5990	0.8664	0.3210	2.83	-0.5719
2017	0.0441	0.3302	7.4853	2.0609	0.4681	0.8664	0.4335	2.87	0.4595
2018	0.0530	0.3678	6.9416	1.8055	0.4470	-0.4378	0.8034	2.83	-0.0319
2007	0.0245	0.1637	6.6882	1.9429	0.3567	0.8505	0.4634	2.83	0.4080
2008	0.0359	0.2904	8.0789	2.2415	0.3352	0.8762	0.6884	2.72	-0.0853
2009	0.0164	0.1225	7.4626	2.8942	0.4679	0.8660	0.1154	2.94	1.0457
2010	0.0114	0.0871	7.6313	3.0326	0.5087	0.8690	0.0263	2.87	-0.1989
2011	-0.0003	-0.0026	9.7347	3.5074	0.4817	0.8973	-0.1975	2.77	-0.9297
2012	0.0239	0.2096	8.7740	2.7170	0.4034	0.8860	0.6284	2.82	-0.3478
2013	0.0234	0.1997	8.5437	3.1718	0.4580	0.8830	0.5410	2.82	-0.0393
2014	0.0181	0.1503	8.2958	3.3113	0.5147	0.8795	0.4040	2.81	0.2339
2015	0.0229	0.1500	6.5527	2.4755	0.5145	0.8474	0.4614	2.82	0.2055
2016	0.0227	0.1475	6.4968	2.8504	0.6443	0.8461	0.4441	2.83	0.8310
2017	0.0184	0.1337	7.2836	2.9643	0.6303	0.8627	0.3395	2.87	-0.0464
2018	0.0114	0.1518	13.3565	3.3717	0.5008	-0.4292	0.3121	2.83	-5.8724

UBN	2007	0.0247	0.1585	6.4142	1.5459	0.3579	0.8441	0.3423	2.83	0.2612
	2008	0.0328	0.2673	8.1519	2.2004	0.3771	0.8773	0.5241	2.72	0.5872
	2009	-0.3098	1.1239	-3.6282	-1.3385	0.4228	1.2756	-4.6255	2.94	1.1294
	2010	0.0566	-0.3317	-5.8629	-1.2035	0.2728	1.1706	1.8380	2.87	-0.3342
	2011	-0.1241	-0.5737	4.6235	0.8069	0.3597	0.7837	-1.0478	2.77	-0.2988
	2012	0.0039	0.0200	5.1638	0.7979	0.2821	0.8063	0.0447	2.82	-5.2100
	2013	0.0048	0.0225	4.7114	1.1232	0.4349	0.7877	0.0903	2.82	0.1110
	2014	0.0224	0.0996	4.4407	1.4552	0.5754	0.7748	0.3580	2.81	4.9986
	2015	0.0184	0.0790	4.2867	1.4945	0.6007	0.7667	0.3242	2.82	-6.3071
	2016	0.0143	0.0639	4.4698	1.9490	0.7676	0.7763	0.2703	2.83	0.3324
	2017	0.0099	0.0409	4.1411	1.5156	0.5413	0.7585	0.1971	2.87	0.4492
	2018	0.0141	0.0933	6.6186	2.1393	0.5069	-0.4865	0.2595	2.83	-1.1093
	2007	0.0114	0.0746	6.5554	2.7319	0.5483	0.8475	0.2319	2.83	1.2506
	2008	-0.5313	2.0997	-3.9524	-1.4838	0.3555	1.2530	-3.4380	2.72	0.1257
	2009	-0.1361	0.4272	-3.1382	-1.0147	0.4239	1.3187	-0.1456	2.94	0.7082
WEMA										

2010	-0.0166	-0.3148	18.9625	4.2805	0.4724	0.9473	0.7785	2.87	-0.9990
2011	0.0586	2.0683	35.2828	10.7267	0.5368	0.9717	-0.1985	2.77	-0.9117
2012	-0.0201	-3.8662	192.2096	57.6897	0.4213	0.9948	-0.2217	2.82	-1.2617
2013	0.0059	0.0470	7.9930	2.3827	0.4460	0.8749	0.0800	2.82	0.4289
2014	0.0081	0.0707	8.7406	3.4110	0.5694	0.8856	0.1073	2.81	-0.1146
2015	0.0075	0.0649	8.6129	4.0291	0.6513	0.8839	0.0994	2.82	-0.2116
2016	0.0077	0.0676	8.7428	4.6804	0.7077	0.8856	0.1045	2.83	0.1925
2017	0.0079	0.0615	7.7555	4.3435	0.7679	0.8711	0.0700	2.87	0.1614
2018	0.0101	0.0819	8.1004	4.2745	0.6829	-0.6493	0.1005	2.83	0.2245
ZENITH 2007	0.0263	0.2064	7.8341	1.9764	0.3926	0.8724	0.5163	2.83	0.3286
2008	0.0291	0.1446	4.9634	1.2493	0.3632	0.7985	0.6018	2.72	0.7972
2009	0.0234	0.1098	4.7025	2.0186	0.6083	0.7873	0.2122	2.94	1.2536
2010	0.0231	0.1162	5.0396	1.9825	0.5485	0.8016	0.3625	2.87	-0.4745
2011	0.0263	0.1536	5.8306	2.2231	0.5243	0.8285	0.3806	2.77	-0.2019
2012	0.0386	0.2147	5.5636	2.0442	0.4969	0.8203	0.8581	2.82	-0.1080

2013	0.0327	0.1991	6.0909	2.3836	0.5417	0.8358	0.6010	2.82	0.0177
2014	0.0315	0.2104	6.6779	3.0822	0.6976	0.8503	0.6071	2.81	0.1492
2015	0.0307	0.2107	6.8569	3.3810	0.7926	0.8542	0.6357	2.82	0.3436
2016	0.0314	0.2202	7.0116	3.4997	0.8375	0.8561	0.7269	2.83	-0.6912
2017	0.0351	0.2427	6.9252	2.8374	0.7216	0.8536	0.7494	2.87	-5.5661
2018	0.0388	0.2846	7.3411	2.5718	0.6154	-0.4331	1.3283	2.83	0.9943