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

By

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A DISSERTATION SUBMITTED TO THE SCHOOL OF POST GRADUATE STUDIES, AHMADU BELLO UNIVERSITY, ZARIA IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE AWARD OF MASTER OF SCIENCE DEGREE (M.Sc.) IN ACCOUNTING AND FINANCE

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DECLARATION

I hereby declare that this work titled "EFFECT OF CREDIT RISK MANAGEMENT ON MARKET PERFORMANCE OF LISTED DEPOSIT MONEY BANKS IN NIGERIA" has been done by me under the supervision of Dr. Luka Mailafia and Mr. C. V. Chandra of the Department of Accounting, Ahmadu Bello University Zaria. The information gathered from literatures has been duly acknowledged in the text and a list of references provided. No part of this dissertation was presented elsewhere for award of any certificate. I take the sole responsibility of all errors therein.

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CERTIFICATION

This is to certify that the dissertation titled "EFFECT OF CREDIT RISK MANAGEMENT ON MARKET PERFORMANCE OF LISTED DEPOSIT MONEY BANKS IN NIGERIA" by Ahmad Muhammed LAWAL (P13ADAC8157) meets the regulations governing the award of the degree of Masters of Science (M.Sc.) Degree in Accounting and Finance in Ahmadu Bello University, Zaria and is approved for its contribution to knowledge and literary presentation.

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DEDICATION

This dissertation is dedicated to my Family (MUHAMMED LAWAL FAMILY).

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All praise is due to Allah, the lord of the world. He begets not, nor was He begotten; and there is none co-equal or comparable to Him. Indeed, there is none that provides answer for every need except Allah, I remain grateful.

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ABSTRACT

The importance of strong credit risk management for building quality loan portfolio is of paramount importance to performance of deposit money banks in Nigeria as well as overall economy. This study examined the effect of credit risk management on the market performance of listed deposit money banks in Nigeria. Panel data was used from a sample of fourteen listed deposit money banks in Nigeria for a period of nine years (2007-2015). Multiple Regression was used as technique of data analysis collected through secondary source. The findings revealed a positive and significant effect of loan loss provision on market performance of listed deposit money banks in Nigeria while capital adequacy was not positively significant. In addition, non-performing loans, secured and unsecured loans and loans & advances had a negative and insignificant effect on market performance of listed deposit money banks in Nigeria. The study concludes that loan loss provision has a significant effect on the market performance of sampled listed deposit money banks in Nigeria, while other variables were not. Therefore, it is recommended that deposit money banks in Nigeria should enhance their capacity in credit analysis and loan administration with a view to strengthening its management, as loan loss provision is found to affect market performance of sampled listed deposit money banks in Nigeria.

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CHAPTER ONE
INTRODUCTION

1.1 Background to the study

Banks and banking activities have evolved significantly through time and with the introduction of money. Financial services like deposit taking, lending money, currency exchange and money transfers became important due to the role being played by money, as no good financial system can do without well-structured and efficient financial institutions, specifically the banking industry. Banks had and still have an important role in the economy, by mediating between supply and demand of securities, and transforming short-term deposits into medium-term and long-term credits through credit creation. Through credit creation, deposit money banks are able to create new money through deposit multiplier effect and formed part of the main income generating activity of banks, though exposing them to credit risk (Kargi, 2011).

The Basel Committee on Banking Supervision (2001) defined credit risk as the possibility of losing the outstanding loan partially or totally, due to credit events (default risk) or the likelihood of losses when a borrower fails to repay a debt of any kind. Credit risk is an internal determinant of bank performance and the efficiency of the bank's performance is a function of how they are able to satisfy their customers at a minimum risk level and maximum profitability level. The higher the exposure of a bank to credit risk, the higher the tendency of the bank to experience financial crisis and vice-versa, thus necessitate its management.

According to Statement of Accounting Standards, credit risk management is the process of managing capital assets of banks and loss of loan reserves. These necessitate the appropriate management of the risks and serves as a key issue in reducing the earnings risk of banks and

improving its value in the capital market. Nigeria deposit money banks has experienced high non-performing loans, low reserve for loan loss provisions, inadequate secured loans, loans and advances and low capital adequacy.

Credit risk is a serious threat to the performance of banks, as some of the reviewed studies showing a negative effect; therefore necessitate its management. Credit risk management provides a leading indicator of the quality of banks credit portfolio which is because it greatly influences or prevents the failure of a bank, as the failure of a bank is influenced to a large extent by the quality of credit decisions and thus the quality of the risk assets, which can be deterred as a result of poor corporate governance such as CEO duality etc. The importance of strong credit risk management for building quality loan portfolio is of paramount important to firm performance of deposit money banks as well as overall economy (Charles & Kenneth, 2013).

The growing stock of studies in accounting, finance and economics, underscores the failure in credit risk management as one of the main source of banking sector crises which possibly led to economic failure experienced in the past, including 2001 global financial crises (Fofack, 2005). Due to increasing spate of non-performing loans and its attendant consequences, the Central Bank authorities through its accords (Basel I and II) emphasized on the importance of capital adequacy for mitigating credit risk. Capital adequacy in banking business provides protection against sudden financial losses and serves as a distress prevention strategy (Greuning, 2003). The level of capital, a cushion to absorb credit and other losses, is matched to the portfolio risk depending on the risk characteristics of individual transactions, their concentration and correlation. All organizations, including banks, need to optimally allocate capital in relation to

the selective investments made. Hence, efficient tools and techniques for risk measurement are a key cornerstone of a good credit risk management.

Other measures put in place in managing the risk associated with lending include making provisions to loans in case of loss or default in repayment, which could turn out to improve the firm performance of deposit money banks, most especially when specific assets are set aside for claims in terms of secured loans. In addition, when banks have adequate capital, it not only solves insolvency but also avoid the failure of the financial system.

The Nigerian banking industry has been strained by the deteriorating quality of its credit assets as a result of the fall in global oil prices and sudden depreciation and devaluation of the naira against global currencies (BGL Banking Report, 2010).The poor quality of the banks' loan assets hindered banks to extend more credit to the domestic economy, thereby adversely affecting the performance of financial institutions. This prompted the Federal Government of Nigeria through the instrumentality of an Act of the National Assembly to establish the Asset Management Corporation of Nigeria (AMCON) in July, 2010 to provide a lasting solution to the recurring problems of credit risk mismanagement that bedeviled Nigerian banks. In 2017, it is said that about 1.5 per cent of the Nigeria population are said to owe banks the sum of N5trilion and that it had been difficult to recover the debts as a result of legal technicalities deployed by debtors' layers (AMCON, 2017). This has motivated for this study to be carried out in order to assess the effect of credit risk management on the market performance of deposit money banks in Nigeria.

1.2 Statement of the Problem

Empirical studies that examine the effect of credit risk management on bank's performance in Nigeria centered on traditional measures of performance such as return on equity, return on asset, earnings per share etc. with none to the best of the researchers knowledge on market (value-based) measures of performance, as the traditional measures of performance do not take into consideration the cost of capital and moreover, they are influenced by accrual based accounting conventions, in addition to overemphasis to achieve and maintain short-term financial results. While market measures of performance are promoted as the measures of a company's real profitability, in terms of performance. Since value creation has become of primary concern to investors and proponents of value based measures claim that those measures are the only performance measures tied directly to stock's intrinsic value (Stewart, 1991; 1999; Grant, 2003).

In addition, to examined how credit risk affects the performance of the banks under study as it has caused the liquidation and takeover of many banks that include Intercontinental bank, Oceanic bank, Bank PhB and Afri-Bank just to mention but a few. When loan are not repaid as at when due (Non-performing) could affect the performance of banks, as loan interest (profit) payment are delayed. Inadequate provisions for loans or collateral (secured loan) can also affect the performance of banks but generally, banks are expected to absorb the losses from the normal earnings. But there may be some unanticipated losses which cannot be absorbed by normal earnings. Capital comes in handy on such abnormal loss situations to cushion off the losses.

Above all, combining the above variables in this study differentiated it from previous studies, as they account for few of the variables used. In addition, sample size and period of study are not

wide which could possibly be one of the reason of having different findings and as such, this study covered nine (9) years, five (5) credit risk variables and sample size of sixteen (16) firms. However, in Nigeria, literature on this subject is very limited or the issues have not been localized or well treated, like the inclusion of capital adequacy. Little or no attention is paid to this area by academics, financial economist or corporate directors and regulators as evidenced by little of literature and contribution to this discourse.

1.3 Research Questions

The following research questions are raised to guide the study;

i. What is the influence of non-performing loans on the market performance of listed deposit money banks in Nigeria?
ii. What is the effect of loan loss provisions on the market performance of listed deposit money banks in Nigeria?
iii. What is the effect of secured loans on the market performance of listed deposit money banks in Nigeria?
iv. To what extent do loans and advances influence the market performance of listed deposit money banks in Nigeria?
v. What effect does capital adequacy have on the market performance of listed deposit money banks in Nigeria?

1.4 Objectives of the Study

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

i. Influence of non-performing loans on the market performance of listed deposit money banks in Nigeria.
ii. Effect of loan loss provisions on the market performance of listed deposit money banks in Nigeria.
iii. Effect of secured and unsecured loans on the market performance of listed deposit money banks in Nigeria.
iv. Effect of loans and advances on the market performance of listed deposit money banks in Nigeria.
v. Effect of capital adequacy on the market performance of listed deposit money banks in Nigeria.

1.5 Statement of Hypotheses

In line with the objectives of the study, the following hypotheses have been formulated in null form:

$H0_{1:}$ Non-performing loans have no significant influence on the market performance of listed deposit money banks in Nigeria.

$H0_2$: Loan loss provisions have no significant effect on the market performance of listed deposit money banks in Nigeria.

$H0_{3:}$ Secured loans have no significant effect on the market performance of listed deposit money banks in Nigeria.

$H0_{4:}$ Loans and advances have no significant influence on the market performance of listed deposit money banks in Nigeria.

$H0_{5:}$ Capital adequacy has no significant effect on the market performance of listed deposit money banks in Nigeria.

1.6 Scope of the Study

The study was limited to the listed deposit money banks in the Nigerian stock exchange as at 31st December, 2015 as the needed data are readily available and are involve in deposit taking and money lending. The study covered a period of nine years (2007-2015). The period was considered because the deposit money banks were strengthening their corporate governance mechanisms and capital base. Market performance of listed deposit money banks was the dependent variable of the study, while non-performing loans, loan loss provisions, secured and unsecured loans, loans and advances and capital adequacy served as the independent variable for the study and provision was made to control for firm specific variable (firm size).

1.7 Significance of the Study

The research will be relevant to several groups of individuals and organizations. First of all, the result or empirical evidence of the study will enable the management of the listed deposit money banks in Nigeria, on how to assess the viability of loan collector in terms of repayment, in order to avoid default. Also, a standard needs to be set on the minimum value of collateral in relation to the amount of money being loaned to a customer.

Secondly, regulatory authorities like Central Bank of Nigeria (CBN) and Securities and Exchange Commission (SEC) to examine whether the listed deposit money banks in Nigeria are complying to relevant provisions, as in the Bank and other Financial Institutions Act (1999) and Prudential Guidelines in terms of capital adequacy, provisions against loan loss etc. with a view to recognizing any deterioration in credit quality.

CHAPTER TWO
LITERATURE REVIEW

2.1 Introduction

This chapter places the study in the context of prior studies. It conceptualized and reviewed the research undertaken on credit risk management and market performance of listed deposit money banks in Nigeria, as well as survey of the theoretical and empirical studies concerning the variables were extensively reviewed.

2.2 The Concept of Firm Performance

Firm Performance can be defined as the fulfillment of an obligation in a manner that releases the performer from all liabilities under the contract. Cheng, Wang, Lee & Teng (2012) defined firm performance as the degree of measure organization put in to achieve their goals and advocated that performance goal should be synonyms. Firm Performance should include efficiency and effectiveness. Efficiency means doing the thing right, quantitatively determined by the ratio of output to input. Effectiveness is “doing the right thing” a relatively vague, non-quantitative concept, mainly concerned with achieving objectives. The function of firm performance measurement is not just informing managers but providing a better way to examine the long-term competitive ability and enterprise value.

Firm Performance could also be referred to a subjective measure of how well a firm can use assets from its primary mode of business and generate revenues. This term is also used as a general measure of a firm's overall financial health over a given period of time, and can be used to compare similar firms across the same industry or to compare industries or sectors in aggregation.

2.2.1 Measurement of Firm Performance

Firm performance is a determinant of an organization's income, profits, increase in value as supported by the appreciation in the entity's worthiness (Asimakopoulos, Samitas & Papadogonas, 2009). Measures of firm performance fall into two broad categories: investor returns and accounting returns. The basic idea of investor returns is that, the return should be measured from the perspective of shareholders e.g. share price and dividend yield. Accounting returns focus on how firm earnings respond to different managerial policies, which can be measured using different accounting ratios (Alan, 2008).

However, Fulbier, Silva & Pferdehirt (2008) maintained that financial ratios can be divided into three broad categories that will provide a review of the overall financial position of a company. These categories include; ratios that indicate the structural change within a company; ratios that indicate the profitability of a company, and ratios that have an effect on the valuation of companies from a market perspective.

The actual usefulness of any particular ratio, however, is strictly governed by the specific objectives of the analysis, different techniques are appropriate for different purposes. Many different individuals and groups are interested in the success or failure of a given business. The most important are owners (investors), management, lenders or creditors, employees, labour organisations, government agencies, and society in general (Helfert, 2011).

Managers are responsible and accountable for operating efficiency, current and long-term profitability, and the effective deployment of capital, human effort, and other resources. Next are

the various owners of the business, who are especially interested in the current and long-term profitability of their equity investment. They expect growing earnings and dividends. Then there are providers of other people's money, lenders and creditors who extend funds to the business for different length of time. They mainly concerned about the ability ofthe business to repay and the availability of specific residual asset values that give them a margin of protection against their risk. Other groups such as government, labour, and society, have specific objectives of their own, such as the ability of the business to pay tax, the wherewithal to meet various social and environmental obligations (Helfert, 2011).

Market performance has been measured differently by different researchers, but in a wider perspective three (3) major groups of accounting ratios were used to measure market performance. According to Radut (2008), the most argued indicators that offer an important view and complex understanding of the market performance of a company are the following ratios: Profitability, Liquidity, leverage and Efficiency.

Profitability ratios measure a company's performance and provide an indication of its ability to generate profits. As profits are used to fund business development and pay dividends to shareholders, a company's profitability and how efficient it is at generating profits isan important consideration for shareholders. Example of profitability ratio that is commonly used is Return on assets, commonly referred to as ROA, which measure management performance. ROA tells the investor how well a company uses its assets to generate income. A higher ROA denotes a higher level of management performance (D'Amato, 2010).

Liquidity ratios indicate whether a company has the ability to pay off short-term debt obligations (debts due to be paid within one year) as they fall due. Generally, a higher value is desired as this indicates greater capacity to meet debt obligations. Widely used liquidity ratio is Current ratio which measures a company's ability to repay short-term liabilities such as accounts payable and current debt using short-term assets such as cash, inventory and receivables (D'Amato, 2010).

Efficiency ratios measure the efficiency or effectiveness with which a firm manages its resources. These ratios indicate the speed at which assets are converted or turned over in sales. These ratios are expressed as 'times', some of the important efficiency ratios are: Stock turnover ratio, Debtors turnover ratio, Creditors turnover ratio, and Working capital turnover ratio (Radut, 2008).

For the purpose of this study, Tobin's Q was used as measure for bank performance as it was measured with elements of financial and market ratio (market value of equity plus liquidity value of firm's preference stock plus net current asset to book value of total assets) and shows success in the a way that the firm has leveraged its investment to develop the company that is valued more in terms of its market-value compared to its book-value.

2.3 The Concept of Credit Risk

According to Onyeagocha (2001), the term credit is used specifically to refer to the faith placed by a creditor (lender) in a debtor (borrower) by extending a loan usually in the form of money, goods or securities to debtors. Essentially, when a loan is made, the lender is said to have extended credit to the borrower and he automatically accepts the credit of the borrower. Credit

can therefore be defined as a transaction between two parties in which the creditor or lender supplies money, goods and services or securities in return for promised future payments by the debtor or borrower.

While, Pandy (2006) is of the view that credit risk arises because we cannot anticipate the occurrence of possible future events with certainty and consequently cannot make any correct prediction about the cash flow sequence. There is risk associated with life itself as well as in business. Despite the important role played by credit in the economy, it is associated with a catalogue of risks. Good for the bank if it is able to grant loans to debtors who are extremely religious in making payments. But in today's world where virtually everyone is suffering numerous hits of the economic downturn, you can never be too sure about the sincerity of your debtors. This is that type of risk that can very well lead to instability for any financial company; worse, it can even lead to insolvency.

According to Chen & Pan (2012), credit risk is the degree of value fluctuations in debt instruments and derivatives due to changes in the underlying credit quality of borrowers and counterparties. Coyle (2000) defines credit risk as losses from the refusal or inability of credit customers to pay what is owed in full and on time. Credit risk is the exposure faced by banks when a borrower (customer) defaults in honouring debt obligations on due date or at maturity. This risk interchangeably called 'counterparty risk' is capable of putting the bank in distress if not adequately managed. While Kargi (2011) is of the view that credit risk is the current and prospective risk to earnings or capital arising from an obligor's failure to meet the terms of any contract with the bank or otherwise to perform as agreed.

For most banks, loans are the largest and most obvious source of credit risk; however, other sources of credit risk exist throughout the activities of a bank, including in the banking book and in the trading book, and both on and off the balance sheet. Banks are increasingly facing credit risk (or counterparty risk) in various financial instruments other than loans, including acceptances, interbank transactions, trade financing, foreign exchange transactions, financial futures, swaps, bonds, equities, options, and in the extension of commitments and guarantees, and the settlement of transactions. For the purpose of this study, credit risk is assumed to be the exposure faced by banks when a borrower (customer) defaults in honouring debt obligations on due date or at maturity.

2.3.1Credit Risk Management

The goal of credit risk management is to maximize bank's risk-adjusted rate of return by maintaining credit risk exposure within acceptable parameters. Banks need to manage the credit risk inherent in the entire portfolio as well as the risk in individual credits or transactions. The effective management of credit risk is a critical component of a comprehensive approach to risk management and essential to the long-term success of any banking organization.

Credit risk management maximizes bank's risk adjusted rate of return by maintaining credit risk exposure within acceptable limit in order to provide framework for understanding the effect of credit risk management on banks' profitability (Kargi, 2011). Demirguc-Kunt & Huzinga (1999) opined that credit risk management is in two-fold which includes, the realization that after losses have occurred, the losses becomes unbearable and the developments in the field of financing

commercial paper, securitization, and other non-bank competition which pushed banks to find viable loan borrowers. The effective management of credit risk is a critical component of a comprehensive approach to risk management and essential to the long-term success of any banking organization.

The active management of credit risk has risen to the top of the agenda of most financial institutions in the last couple of years - and for good reason. Despite high-profile fears about the risks of electronic banking, or losses from derivative positions, inadequate credit risk management is still the biggest source of serious banking problems according to the Based Committee - the international banking supervisory body.

The worst problems are caused by insufficiently stringent credit standards for borrowers and counterparties, poor credit risk management of the entire portfolio (as opposed to the individual credits or transactions) and a lack of attention to changes in economic or other circumstances that affect a counterparty's credit standing (Helfert, 2011).

For the regulators, some of the most alarming credit events are those that affect whole classes of credit risky transactions. Recent international credit events such as the economic crisis in Asia, which began in 1997, and the Russian debt default in 1998, caused billions of dollars of bank losses. Within the US, the fallout from the savings and loans industry scandals in the 1980s, estimated to have cost at least $125 billion, continued well into the 1990s.

But the present wave of change in credit risk management is being driven by more than the fear of a credit crisis. Regulators of the banking industry are making capital charges more responsive to a bank's actual credit exposure by setting new rules for how much capital banks must set aside to cover potential losses. The Capital Accord will give larger institutions major incentives to reduce their regulatory capital - and save money - by improving their credit management practices (Kargi, 2011).

Meanwhile, greater industry competition, industry consolidation, and new technology are adding to the pressure to improve credit risk management throughout the financial industry. The current emphasis on shareholder value and risk-adjusted return on capital is directing investment towards business lines that manage their risks more effectively - including all types of credit risk. The advances in measuring and managing credit risk mean that a passive absorption of credit risk by these companies is the way of the past. Leading institutions now regularly isolate and package portions of their credit risk by means of new tools - credit derivatives and securitizations - and pass it to the financial markets.

These transactions, often hybrids of the "first generation" credit default or total return swaps that appeared in the mid-1990s, are thawing out the credit risk that lies frozen in bank portfolios and channeling it to investors. And while banks improve the way they identify measure, monitor and control their credit risk, they are also developing techniques and systems that track the relationship between credit risk and other risks, such as market risk, to enable full enterprise-wide risk management.

According to Nelson & Schwedt (2006) the banking industry has also made strides in managing credit risk. Until the early 1990s, the analysis of credit risk was generally limited to reviews of individual loans, and banks kept most loans on their books to maturity. Today, credit risk management encompasses both loans reviews and portfolio analysis. Moreover, the development of new technologies for buying and selling risks has allowed many banks to move away from the traditional book and hold lending practice in favor of a more active strategy that seeks the best mix of assets in light of the prevailing credit environment, market conditions, and business opportunities.

The main source of credit risk include, limited institutional capacity, inappropriate credit policies, volatile interest rates, poor management, inappropriate laws, low capital and liquidity levels, direct lending, massive licensing of banks, poor loan underwriting, laxity in credit assessment, poor lending practices, government interference and inadequate supervision by the central bank (Kithinji, 2010).An increase in bank credit risk gradually leads to liquidity and solvency problems. Credit risk may increase if the bank lends to borrowers it does not have adequate knowledge about.

The CBN Credit Risk Management System [CRMS] or Credit Bureau was established in 1991.The enabling legislation empowered the CBN to obtain from all banks, returns on all credits with a minimum outstanding balance of N100, 000.00 (now N1.m and above of principal and interest), for compilation and dissemination by way of status report to any interested party (i.e. operators or regulators). The Act made it mandatory for all financial institutions to render returns to the CRMS in respect of all their customers with aggregate outstanding debit balance of

N=1,000,000.00 (One million naira) and above. It also required banks to update these credits on monthly basis as well as make status enquiry on any intending borrower to determine their eligibility or otherwise. Banks are penalized for non-compliance with the provisions of the Act. (www.cenbank.org).

Currently the CRMS is web-enabled, thus allowing banks and other stakeholders to dial directly into the CRMS database for the purpose of rendering the statutory returns or conducting status enquiry on borrowers. Also, the CBN is in the process of integrating the CRMS with other systems operating in the bank to make it more efficient.

The primary objectives for the setting-up of the CRMS included,

i. Strengthening the credit appraisal procedures of banks by generating accurate and reliable credit information on bank borrowers from a central database. Banks are now in a position to review the credit history of customers seeking new or additional credit facilities with the available information, thereby eliminating the granting of loans to customers who already had no capacity to repay and/or had loans in the non-performing category and in some cases, abandoned loans (Marsh, 2008).

ii. Storage and dissemination of Credit Data: The Credit Bureau captures all credits of N1 million (principal and interest) and above from banks' monthly returns on all their customers. Banks are also required to provide all other relevant data on the facilities such as names of borrowers, directors of borrower companies, credit limit, outstanding amount, status of credit, securities pledged etc. These data are collated in the CRMS database, which are made available to banks through credit status enquiry/report. The CBN Credit Bureau provides objective responses to status enquiries to promote a

responsive borrowing culture. The customers who meet their obligations as contracted will consequently continue to have access to credit facilities, while delinquent customers are denied access to new facilities from other banks until they make good their outstanding delinquent credits.

iii. Monitoring of Over-Exposure to Borrowers: The consolidated credit information generated by the Credit Bureau enables banks identifies borrowers who have already obtained loans in excess of their repayment capabilities. Consequently banks are better able to access the potential benefits or otherwise of granting facilities to different companies or sectors. It will also aid banks in the assessment of the feasibility or otherwise of proposals from individual customers.

iv. Facilitating Consistent Classification of Credits: The Credit Bureau will facilitate regulators' consistent classification of credits granted to the same borrower(s) by different banks. Regulators will be provided with first-hand information on a customer's global debt profile thereby eradicating the erroneous classification of loan's as performing in one bank, whilst same are doubtful or lost in another.(www.cenbank.org).

2.3.3 Credit Risk Management Strategies

The credit risk management strategies are measures employed by banks to avoid or minimize the adverse effect of credit risk. A sound credit risk management framework is crucial for banks so as to enhance profitability guarantee survival. According to Lindergren (1987), the key principles in credit risk management process are sequenced as follows; establishment of a clear structure, allocation of responsibility, processes have to be prioritized and disciplined, responsibilities

should be clearly communicated and accountability assigned. The strategies for hedging credit risk include but not limited to these;

i. Credit Derivatives: This provides banks with an approach which does not require them to adjust their loan portfolio. Credit derivatives provide banks with a new source of fee income and offer banks the opportunity to reduce their regulatory capital (Shao and Yeager, 2007). The commonest type of credit derivative is credit default swap whereby a seller agrees to shift the credit risk of a loan to the protection buyer. They further portrayed that "credit derivatives encourage banks to lend more than they would, at lower rates, to riskier borrowers". New innovations in credit derivatives markets have improved lenders' abilities to transfer credit risk to other institutions while maintaining relationship with borrowers (Marsh, 2008).

ii. Credit Securitization: It is the transfer of credit risk to a factor or insurance firm and this relieves the bank from monitoring the borrower and fear of the hazardous effect of classified assets. This approach insures the lending activity of banks. The growing popularity of credit risk securitization can be put down to the fact that banks typically use the instrument of securitization to diversify concentrated credit risk exposures and to explore an alternative source of funding by realizing regulatory arbitrage and liquidity improvements when selling securitization transactions (Michalak & Uhde, 2009). A cash collateralized loan obligation is a form of securitization in which assets (bank loans) are removed from a bank's balance sheet and packaged (tranche) into marketable securities that are sold on to investors via a special purpose vehicle (SPV) (Marsh,2008).

iii. Compliance to Basel Accord: The Basel Accord is international principles and regulations guiding the operations of banks to ensure soundness and stability. The Accord

was introduced in 1988 in Switzerland. Compliance with the Accord means being able to identify, generate, track and report on risk-related data in an integrated manner, with full auditability and transparency and creates the opportunity to improve the risk management processes of banks. The New Basel Capital Accord places explicitly the onus on banks to adopt sound internal credit risk management practices to assess their capital adequacy requirements (Chen & Pan, 2012).

iv. Adoption of a sound internal lending policy: The lending policy guides banks in disbursing loans to customers. Strict adherence to the lending policy is by far the cheapest and easiest method of credit risk management. The lending policy should be in line with the overall bank strategy and the factors considered in designing a lending policy should include; the existing credit policy, industry norms, general economic conditions of the country and the prevailing economic climate (Kithinji,2010).

v. Credit Bureau: This is an institution which compiles information and sells this information to banks as regards the lending profile of a borrower. The bureau awards credit score called statistical odd to the borrower which makes it easy for banks to make instantaneous lending decision. Example of a credit bureau is the Credit Risk Management System (CRMS) of the Central Bank of Nigeria (CBN).

2.3.4 Non-Performing Loans in Nigeria Deposit Money Banks

Caprio and Klingebiel (1996), suggest that non-performing loans are those loans that do not generate income for a relatively long period of time that is, the principal and or interest on these loans have been left unpaid after due date of repayment. The non-performing loans have been a subject of concern in the Nigerian financial system for about a decade now. The excessively high

level of non-performing loans in the banks can also be attributed to poor corporate governance practices, lax credit administration processes and the absence or non- adherence to credit risk management practices (Kargi 2011).

Most of the non-performing loans are caused by unprofessional ways the Nigerian bank managements disburse loans influence by personal affiliations with the customers. Rather than follow the standard procedure of granting loan as provided by the bank, they grant loans based on personal relationship with the customer who have not met the banks requirements for granting such loan. Most of these loans turnout to be non-performing loans in the future. There are also circumstances where banks grant additional loan facilities to defaulting borrower. As a proactive measure to avert the menace of resurgence of non-performing loan and to ensure safe and sound financial system the CBN in June 2014 directed that no financial institutions shall without the prior written approval of the CBN grant a credit facility to a potential borrower who is in default of the any existing credit facility to the tune of N500Million and above in the case of deposit banks and N250Million and above in the case of development banks and banks in liquidation.

2.3.5 Loan in the Banking Industry

One on the primary function of the banks is the provision of loan to its customers; as such it is almost impossible for any bank to operate without lending money to its customers. Banks are seen as major players in economic development of a nation since the control the flow of fund in the economy. For the banks to play their role in economic development they make funds available to investors who do not have enough resources to fund their business ideas. The loans are provided at a consideration called interest. To ensure that the customers stay faithful to their

obligation of repaying the loan along with the interest element the banks ask of collateral. The collateral is a sort of security on the loan to avoid loss of fund by the banks.

Caprio and Klingebiel (1996), further buttress the relevance of collateral, by relating them to types of loan and include;

1. *Secured Loan:* A secured loan is a promise to pay a debt, where the promise is "secured" by granting the creditor a right on a specific property (collateral) of the debtor as leverage for repayment in the event of default. Where the debtor fails to repay the loan, the creditor can recoup the loan by seizing and liquidating the specific property used for collateral on the debt. Collaterals are demanded mostly if the loans are long term loans. This is the common type of loan that the bank grants because banks are general risk-averse.
2. *Unsecured Loan:* These are loans granted to customers of the bank without any right on the property (collateral) of the borrower to ensure repayments. In this case the lender is relying upon the creditworthiness and reputation of the borrower to repay the debt. This is mostly in situation of short term debt like bank overdraft also where the amount involved is not much.
3. *Partly secured Loan*: this is a combination of both secured and unsecured features. A secured debt is a loan in which the borrower pledges some asset as collateral for the loan. However, a partially secured debt is a debt that is secured by collateral that is worth less than the debt.

The best form of loan is the secured loan, because it provides a back up to that allow the bank recoup his money if the customer defaults in paying back the fund. However, despite all this measures (requesting for collateral) to control the loss of fund/income by the bank we still have cases of non-performing loans.

2.3.6 CAPITAL ADEQUACY AND CREDIT RISK MANAGEMENT IN NIGERIAN BANKS

Traditionally, operators and supervisory authorities never gave much thought to the question of capital adequacy in banking. This has however changed in the 20th century. According to Adewumi (1997), since the early seventies, great concern has been expressed over the issue of adequate capital for banks.

Firstly, the industry has witnessed unprecedented competition in the last two decades. This has led bankers to engage in new unknown and riskier fields that the supervisory authorities in particular have expressed concerns over capital adequacy. In Nigeria, the concern of regulatory authorities has been reflected in the continual increase in the capital requirement for banks entering the industry (Kithinji, 2010).

Secondly, significantly, as a result of inflation, the volume of banking business reflected in the total assets liabilities of banks has increased phenomenally in recent years. As the asset will diminish in relation to liabilities if no addition are made to it. This trend has given concern to the regulatory authorities all over the world.

Thirdly, the international business environment sectors have become increasingly intertwined as a result of globalization. Consequently too, the bankers have become exposed to risks not directly inherent in the business of the economies in which they operate. The question as to whether existing levels of capital are considered adequate for the increasing levels of risks has risen consequently in debates between supervisory authorities.

Fourthly, although, capital in banking did not attract undue attention in the past, nevertheless capital were calculated and observed. With increase in the volume of banking not matched with corresponding increases in stock, the capital and deposits and total assets have declined. This development has given some concern to practitioners and the supervisory authorities.

According to Lewis and Stein (1997) structurally, in Nigeria the banking sector was highly concentrated as the largest banks account for about 50 Per cent of the industry's total assets and liabilities. Most banks in Nigeria have a capitalization of less than US$ 10 million; even the largest bank in Nigeria has a capital base of about US$240 million compared to US$526 million for the smallest bank in Malaysia. This is not healthy for the economy. It was this concern to save the Nigerian Banking Sector from systematic crisis that led to regular reform of the sector and the requirement for banks to raise their capital base to a minimum of N25 billion with compliance date of 31stDecember, 2005 in the recent reform (Kargi, 2011).

2.3.7 Regulatory and Legal Framework of Capital Adequacy

As a result of concern of monetary and regulatory authorities over capital adequacy of banks, legal and regulatory actions are being instituted or enforced to ensure that banks within their

jurisdiction operate continuously with adequate capital. According to Soludo (2004), the Nigerian Banking System faces enormous challenges which if not addressed urgently could snowball into crisis in the near future. Beck et al (2005) noted that since 1952 when the first banking legislation was enacted all the banking laws in Nigeria have specified minimum paid up capital. Up to 1969, the legislations, for this purpose distinguished between foreign banks and indigenous banks. The 1979 Decree section 6 states that; the minimum capital required by an indigenous bank to be granted license must be N600, 000.00. A bank directly or indirectly controlled from abroad should have paid-up capital of up to N1.5 million. In1979, different initial capital base requirement were stipulated for commercial land merchant banks. With the promulgation of Nigeria enterprises Promotion Decree and the advent of universal banking, specification differentiate between foreign, indigenous, NGO's, Commercial and merchant banking dimension was eliminated.

Lewis and Stein (1997) noted that while the statutory minimum capital requirement largely stabilized during the pre-SAP period, four upward reviews were put in place after SAP to adjust for the inflationary effect of the SAP induced policies. The increase in the number of operators between 1987 and1990 actual led to the ballooning of loans and advances of banks industry wide and a consequent deterioration in the quality of banks risk assets. The CBN introduced the new famous prudential guidelines, which made it mandatory for banks to recognize early and provide for not performing assets. The effort of those stringent but necessary measures was the erosion of the capital base of quite a sizable number of operators as their accumulated reserves were not sufficient to absorb the huge loses. The almost four time devaluation of Naira exchange rate to the dollar between March 1992 (N10:$1 to N18: $1) and February 1995 from (N22: $1), dealt a

final total blow on the capital base of the banks particularly those that have been pronounced terminally distresses by the CBN.

According to Lewis and Stein (1997) the new globally embraced capital adequacy measurement places considerable emphasis on the risk element in the assets of banks. This is to ensure that each bank carries funds that are not only commensurate with its total assets but also cater adequately for the riskless of its operation, nationally and internationally. The joint special examination of the 24 deposit money banks conducted by the CBN and NDIC in 2009 to ascertain their true financial condition revealed serious weaknesses in corporate governance which manifested in, poor risk management; weak board and management oversight; inaccurate financial reporting; abuse and fraudulent use of subsidiaries; poor book keeping practices; non-compliance with banking laws, rules and regulations; and nonperforming insider-related credits, among others. All the observed weaknesses culminated in huge non-performing loans and insolvency of varying degrees in many of the banks. The development led to the removal of the executive managements of 8 out of the existing 24 banks(Oceanic bank, Intercontinental bank, Union bank, Fin bank, Afribank, Bank PHB, Equatorial Trust Bank, and Spring Bank) and the injection of a bail-out sum of N620 billion by the CBN as liquidity support to the problem banks(NDIC, 2009). In August, 2011, The Federal Government through the NDIC assumed ownership of three of the problem banks: Afribank, Bank PHB and Spring Bank via the "Bridge Bank" mechanism following the revocation of their licenses by the Central Bank of Nigeria (Komolafe & Kolawole, 2011).

According to Sanusi (2010), the reports further revealed that non-performing loans in ten banks totalled N1, 696 billion, representing 44.38% of total loans while the Capital Adequacy Ratio in

the ten banks ranged between 1.01% and 7.41%, which were below the minimum ratio of 10%. This statistics portrays fragile banking system. The weakness of the Nigerian banking system in Nigeria appears to call to question the effectiveness of the pre-operation regulations of the system, particularly those relating to licensing requirements. Among this is ensuring that board and management are made up of "fit and proper" persons (i.e., no bankrupts, persons of criminal records or fraudulent people).

The way the capital of most Nigerian banks were eroded in 2008/2009 in the aftermath of the global economic meltdown despite the 2004/2005 N25 billion recapitalization exercise led credence to the feelings in the industry that many promoters of new banks exploited the loopholes in bank regulation in the way they contributed bank capital. A lot of them were believed to have financed their contributions using commercial papers and other similar money market instruments, which were paid back using depositors' funds once the banks opened. This made the actual bank capital rather fragile. It is no wonder that in 1990, nine distressed banks required as much as 2.0 billion in additionalcapital to be able to operate in a safe and sound manner. This amount ballooned by a factor of 15, to 30.5 billion for 60 distressed banks by the end of 1995 (NDIC, 1997), and then in 2009, N620 billion had to be injected into the banking system by the CBN to bail out nine (9) "troubled" banks (NDIC, 2009).

Besides, the issue of ensuring that only "fit and proper" persons constitute the board and management appears to be seriously in doubt. For example, Uchendu (1995) reported that the CBN had to delete the name of a chief executive of a merchant bank from its register of fellows in connection with fraudulent practices, among which were false claims of qualification and

experience prior to being appointed. Similarly, current regulation does not deter people from owning a greater share than allowed by law through the use of fronts. Neither does it ensure that "strange bedfellows" do not populate boardrooms of banks. Boardroom squabbles and the resulting litigation can lead to defective management as well as poor credit administration policy. These are some of the major factors adduced by financial institutions as causing distress (CBN/NDIC, 1995).

To be effective in its post-operation regulation, the supervisory and regulatory authorities in Nigeria require adequate human and information capital. However, the human capital capacity of the regulatory authority appeared spread to its elastic limit with the liberalization of entry of financial institutions and the broadened span of supervisory control of the CBN by BOFID. In particular, financial institutions identified the lack of adequate supervision and in adequacy of professionally trained personnel as some of the major causes of distress (CBN/NDIC, 1995). To gain maximum benefit from the information capital of the banking system, both regulatory agencies and banks must have experienced electronic data processing (EDP) staff. In Nigeria, not only is these categories of staff in the banking industry in short supply, the few that exist are highly inexperienced.

2.4 Review of Empirical Studies on Risk Management and Bank's Market performance

Below are some of the studies that the researcher came across and reviewed but almost all the studies used traditional measures for performance, which includes return on asset and return on equity in measuring the performances of their sampled firm, as they only indicate what return a company is generating on its investments/assets and are mostly used as a performance measure

for autonomous strategic business units (SBU's), not for the whole company. Although, the reviewed studies wasn't done in line with the variables under study, as the previous studies combined some of the variables in their respective work. In order to report a comprehensive study reviewed, a combined variable method was adopted.

Ahmed, Takeda & Shawn (1998) in their study found that loan loss provision has a significant positive influence on non-performing loans. Therefore, an increase in loan loss provision indicates an increase in credit risk and deterioration in the quality of loans consequently affecting bank performance adversely.

According to Umoh (2002) and Ferguson (2003) few banks are able to withstand a persistent run, even in the presence of a good lender of last resort. As depositors take out their funds, the bank hemorrhages and in the absence of liquidity support, the bank is forced eventually to close its doors. Thus, the risks faced by banks are endogenous, associated with the nature of banking business itself, whilst others are exogenous to the banking system.

Altunbas, (2005) assessed the effect of loan activities on bank risk using the ratio of bank loans to assets (LTA) because bank loans are relatively illiquid and subject to higher default risk than other bank asset, implying a positive relationship between LTA and the risk measures. In contrast, relative improvements in credit risk management strategies might suggest that LTA is negatively related to bank risk measures.

Ahmad & Ariff (2007) examined the key determinants of credit risk of commercial banks on emerging economy banking systems compared with the developed economies. The study found that regulation is important for banking systems that offer multi-products and services; management quality is critical in the cases of loan-dominant banks in emerging economies. An increase in loan loss provision is also considered to be a significant determinant of potential credit risk. The study further highlighted that credit risk in emerging economy banks is higher than that in developed economies.

Ben-Naceur & Omran (2008) in attempt to examine the influence of bank regulations, concentration, financial and institutional development on commercial banks' margin and profitability in Middle East and North Africa (MENA) countries from 1989-2005 found that bank capitalization and credit risk have positive and significant effect on banks' net interest margin, cost efficiency and profitability.

Felix & Claudine (2008) examined the association between the performance of banks and credit risk management. As part of their findings, they observed that return on equity and return on assets both measuring profitability were inversely related to the ratio of non-performing loan to total loan of financial institutions thereby leading to a decline in profitability.

Kithinji (2010) assessed the effect of credit risk management on the profitability of commercial banks in Kenya. Data on the amount of credit, level of non-performing loans and profits were collected for the period 2004 to 2008. The findings revealed that the bulk of the profits of commercial banks are not influenced by the amount of credit and non-performing loans,

therefore suggesting that other variables other than credit and non-performing loans effect on profits.

Al-Khouri (2011) assessed the effect of bank's specific risk characteristics, and the overall banking environment on the performance of 43 commercial banks operating in 6 of the Gulf Cooperation Council (GCC) countries over the period 1998-2008. Using fixed effect regression analysis, results showed that credit risk, liquidity risk and capital risk are the major factors that affect bank performance when profitability is measured by return on assets while the only risk that affects profitability when measured by return on equity is liquidity risk.

In a comparative study between the conventional banks and Islamic banks, Hayati & Shahrul (2011) identified factors influencing credit risk of Islamic bank, using Malaysian as a case. The study investigated the factors influencing credit risk of Islamic banking and identify whether there exists any difference between credit risk determinants of Islamic banking and conventional banks in Malaysia. The study used descriptive statistics about Islamic and selected conventional banks risk characteristics, and regression analysis was used to determine the underlying factors influencing risk of Islamic banking and that of the major six anchor banks on interest-based banking system. This is done by carefully identifying and examining for each year, each risk predictor of Bank Islam Malaysia (BIMB) and the Islamic windows of 6 anchor banks (for Islamic banking) as well as risk predictors of the 6 anchor banks from their conventional banking performance (for conventional banking).The study revealed that the unique nature of Islamic banking operations provides an insightful intuition that the risk determinants of Islamic banking ought to be different from those factors affecting conventional banking, considering that credit

risk of Islamic banking remains relatively high (which is contrary to the general understanding) as interest is usually not charged on the principal.

Kargi (2011) evaluated the effect of credit risk on the profitability of Nigerian banks. Financial ratios as measures of bank performance and credit risk were collected from the annual reports and accounts of sampled banks from 2004-2008 and analyzed using descriptive, correlation and regression techniques. The findings revealed that credit risk management has a significant effect on the profitability of Nigerian banks. It concluded that banks' profitability is inversely influenced by the levels of loans and advances, non-performing loans and deposits thereby exposing them to great risk of illiquidity and distress. Although, most of the reviewed literatures are not current as at the time of the study but the identified non-performing as having significant effect to banks performance, which Robert & Gary (1994) also identified as increased non-performing loans to be key evidence among failed banks and not poor operating efficiency.

In another development, Naveed, Muhammad & Muhammad (2011) aimed to determine the firm's level factors which have significant influence on the risk management practices of Islamic banks in Pakistan. The study selected credit, operational and liquidity risks as dependent variables while size, leverage, non-performing loans ratio, capital adequacy and asset management as explanatory variables for the period of four years from 2006 to 2009. The results revealed that size of Islamic banks have a positive and statistically significant relationship with financial risks (credit and liquidity risk), whereas its relation with operational risk is found to be negative and insignificant. The asset management establishes a positive and significant relationship with liquidity and operational risk. The debt equity ratio and NPLR have a negative

and significant relationship with liquidity and operational risk. In addition, capital adequacy has negative and significant relationship with credit and operational risk, whereas it is found to be positive and with liquidity risk.

Chen & Pan (2012) examined the credit risk efficiency of 34 Taiwanese commercial banks over the period 2005-2008. Their study used financial ratio to assess the credit risk and was analyzed using Data Envelopment Analysis (DEA). The credit risk parameters were credit risk technical efficiency (CR-TE), credit risk allocative efficiency (CR-AE), and credit risk cost efficiency (CR-CE). The results indicated that only one bank is efficient in all types of efficiencies over the evaluated periods. Overall, the DEA results show relatively low average efficiency levels in CR-TE, CR-AE and CR-CE in 2008.

Epure & Lafuente (2012) examined bank performance in the presence of risk for Costa-Rican banking industry during 1998-2007. The results showed that performance improvements follow regulatory changes and that risk explains differences in banks and non-performing loans negatively affect efficiency and return on assets while the capital adequacy ratio has a positive effect on the net interest margin.

The work of Funso, Kolade & Ojo (2012), empirically investigated into the quantitative effect of credit risk on the performance of commercial banks in Nigeria over the period of 11 years (2000-2010). Five commercial banking firms were selected on a cross sectional basis for eleven years. The traditional profit theory was employed to formulate profit, measured by Return on Asset (ROA), as a function of the ratio of Non-performing loan to loan & Advances (NPL/LA), ratio of

Total loan & Advances to Total deposit (LA/TD) and the ratio of loan loss provision to classified loans (LLP/CL) as measures of credit risk. Panel model analysis was used to estimate the determinants of the profit function. The results showed that the effect of credit risk on bank performance measured by the Return on Assets of banks is cross-sectional invariant. That is the effect is similar across banks in Nigeria, though the degree to which individual banks are affected is not captured by the method of analysis employed in the study.

Adeusi, Akeke, Obawale & Oladunjoye (2013) further extended the research by not just investigating the relationship between credit risk and market performance of Banks in Nigeria but included market risk and liquidity risk. In essence, the study focused on the association of risk management practices and bank market performance in Nigeria. Secondary data sourced was based on a 4year progressive annual reports and financial statements of 10 banks and a panel data estimation technique adopted. The study found an inverse relationship between market performance of banks and doubt loans, and capital asset ratio was found to be positive and significant, implying that the higher the managed funds by banks the higher the performance. The study concludes a significant relationship between banks performance and risk management. Hence, the need for banks to practice prudent risks management in order to protect the interests of investors.

In a hybridized paradigm study, Agus & Rifki (2013) conducted their study on a review of Credit Risk Management in Indonesian Islamic Banking. The study aimed at measuring and valuing the credit risk management application in Islamic banks, together with valuing some credit risk management indicators in order to have a credit risk management index as an indicator to check

the credibility and soundness of the Islamic banking industry in managing depositors' funds and mitigating credit risk. Methodologically, the study employed primary data which was collected with questionnaires to the respondents from Islamic banks. Meanwhile, the secondary data was also taken from Bank Indonesia data based for the period thirteen years (2000-2012). The study took into account monthly data of Islamic bank financing and none performing financing (NPF). The study revealed that credit risk management policies and procedures in the Indonesian Islamic banking industry have been quite good with the index value of the credit risk management.

The work Ogboi & Unuafe (2013) empirically examined the effect of credit risk management and capital adequacy on banks market performance in Nigeria, using a panel data model to estimate the relationship that exists among loan loss provisions (LLP), loans and advances (LA), non-performing loans (NPL), capital adequacy (CA) and return on asset (ROA) as a measure of performance, which is peculiar to previous studies from 2004-2009. The study found that credit risk management and capital adequacy effected positively on bank's market performance with the exception of loans and advances which was found to have a negative effect on banks' profitability in the period under study.

Abiola & Olausi (2014) investigated the effect of credit risk management on the performance of commercial banks in Nigeria. Financial reports of seven commercial banking firms were used to analyze for seven years (2005 – 2011). The panel regression model was employed for the estimation of the model. In the model, Return on Equity (ROE) and Return on Asset (ROA) were used as the performance indicators while Non-Performing Loans (NPL) and Capital Adequacy

Ratio (CAR) as credit risk management indicators. The findings revealed that credit risk management has a significant effect on the profitability of commercial banks' in Nigeria.

Affirming the work of Kargi (2011), Gizaw, Kibede, Selvaraj (2015) examined the effect of credit risk on profitability of commercial banks in Ethiopia using two (2) traditional measure of performance (return on asset and return on equity) in a two model, utilizing data collected from the annual report of eight (8) sampled of the commercial banks for a period of twelve years (2003-2014). After using a descriptive statistics and panel data regression model, the result showed that credit risk measures in form of non-performing loan, loan loss provisions and capital adequacy have a significant effect on the profitability of the sampled commercial banks in Ethiopia.

Uwuigbe, Ranti, & Babajide (2015) assessed the effects of credit management on Banks' performance in Nigeria. In achieving the objectives identified in the study, the audited corporate annual financial statement of listed banks covering the period 2007-2011 were analyzed. More so, a sum total of ten (10) listed banks were selected and analyzed for the study using the purposive sampling method. However, in an assessing the research postulations, the study adopted the use of both descriptive statistics and econometric analysis using the panel linear regression methodology consisting of periodic and cross sectional data in the estimation of the regression equation. Findings from the study revealed that ratio of non-performing loans and bad debt do have an inverse significant effect on Nigeria banks while secured and unsecured loans were not significant. The sample horizon of this research is short compared to other related studies in the literature.

2.5 Theoretical Framework

Below are some of the theories used by previous studies

2.5.1 Loan Pricing Theory

This theory looks at banks' risk in terms of interest rate. Banks always consider the problems of adverse selection and moral hazard since it is very difficult to forecast the borrower type at the start of the banking relationship. If banks set interest rates too high, they may induce adverse selection problems because high-risk borrowers are willing to accept these high rates. Once these borrowers receive the loans, they may develop moral hazard behaviour or so called borrower moral hazard since they are likely to take on highly risky projects or investments.

2.5.2 Firm Characteristics Theories

These theories predict that the number of borrowing relationships will be decreasing for small, high-quality, informationally opaque and constraint firms, all other things been equal. Kargi (2011) stated that the most obvious characteristics of failed banks are not poor operating efficiency, however, but an increased volume of non-performing loans. Non-performing loans in failed banks have typically been associated with regional macroeconomic problems.

2.5.3 The Signaling Arguments

The signaling argument states that good companies should provide more collateral so that they can signal to the banks that they are less risky type borrowers and then they are charged lower interest rates. Meanwhile, the reverse signaling argument states that banks only require collateral and or covenants for relatively risky firms that also pay higher interest rates.

2.5.4 Credit Market Theory

A model of the neoclassical credit market postulates that the terms of credits clear the market. If collateral and other restrictions (covenants) remain constant, the interest rate is the only price mechanism. With an increasing demand for credit and a given customer supply, the interest rate rises, and vice versa. It is thus believed that the higher the failure risks of the borrower, the higher the interest premium.

2.5.5 Theory of Multiple-Lending

It is found in literatures that banks should be less inclined to share lending (loan syndication) in the presence of well- developed equity markets. Both outside equity and mergers and acquisitions increase banks' lending capacities, thus reducing their need of greater diversification and monitoring through share lending. This theory has a great implication for banks in Nigeria in the light of the 2005 consolidation exercise in the industry

A situation where a borrower is motivated to default (even though the underlying project is a success) because of the chance of gaining debt forgiveness. The motivation to cheat, however, is reduced if collateral is posted (secured debt). Hence, collateral in the Bester model protects creditors against cheating by borrowers. Besides resolving the moral hazard problem, theoretical models of secured debt have also assumed that collateral reduces potential adverse selection problems in the presence of asymmetric information (Chen & Pan, 2012). The underlying premise in these models is the inability of the lenders to distinguish between good and bad borrowers. Consequently, an interest rate that reflects the average quality of borrowers in the market results in an under-pricing of low quality firms but an over-pricing of high quality firms.

As a result, high quality firms do not have incentives to enter the market leading to an adverse selection situation, but if banks give out more loans, it will increase cost of monitoring and increases its performance. And if the bank gives lesser loan, it will decrease the cost of monitoring credit risk management and subsequently decrease its performance as there won't be any accruing interest. Under such conditions, secured debt, provisions for loans and adequate capital can play a role in signaling the real worth of a firm Performance.

Also, the theory predicts a greater of multiple lending when the banks have lower equity, firms are less profitable and the monitory cost is high.

CHAPTER THREE
RESEARCH METHODOLOGY

3.1 Introduction

This study examined the effect of credit risk management on market performance of listed deposit money banks in Nigeria. In accordance with this objective, this chapter discussed the research design, methods of data collection, population and sampling, techniques of data analysis and variables measurement as well as the model that was employed in the study.

3.2 Research Design

The research design that was employed in this study is correlation design; the choice of the design is informed by the effectiveness of the design in revealing the effect of two or more variables and the effect of one variable on another. It is therefore, most appropriate for this study because it allows for testing of expected relations between variables and the making of predictions regarding these relationships. This study involved the measurement of five independent variables to one dependent variable, along with controlling for firm size.

3.3 Population of the study

The population of the study comprised all the sixteen (16) listed Deposit Money Banks in the Nigerian Stock Exchange as at 31st December, 2015 as attached in the appendix. The choice of the banking sector is informed by the fact that the sector is one of the oldest and biggest sectors in the Nigerian economy that are involve in lending and its management, thus provided a logical basis for assessing the effect of credit risk management on firm market performance.

3.4 Sample Size and Sampling Technique

The sample of the study was fourteen (14) Listed Deposit Money Banks in the Nigerian Stock Exchange. The sample was arrived using convenience sampling technique. The technique was adopted to enabled the study accessed only those banks that have complete records of all the data required for measuring the variables of the study within the period covered, as attached in the appendix.

3.5 Sources and Methods of Data Collection

The data that was used for this study was obtained from secondary sources, because it is a quantitative study based on positivism paradigm and the core of the data needed for analysis can be adequately and conveniently extracted from the audited financial reports of the selected firms within the period of study. These financial reports are obtained from the Nigerian Stock of Exchange.

3.6 Techniques of Analysis

The study used the result of Ordinary Least Square (OLS) multiple regression technique of data analysis, as the result from the hausman was insignificant. In addition, various tests was conducted, ranging from multicollinearity test, normality test, heteroscedasticity test and hausman specification test. The data analysis was done using Statistics/Data Analysis Software (STATA 13).

3.7 Model Specification

To examine the effect of credit risk management on market performance of listed deposit money banks in Nigeria. The model that was used for this study was derived from the panel regression equation which combined both regular time-series and cross section regression with the used of double subscript ($_{it}$) attached to each variable. The study therefore specified the general form of panel data model compactly as follows:

$Y_{it} = \alpha_{it} + \beta_1 X_{1it} + \beta_2 X_{2it} + ...\beta_n X_{nit} + \mu_{it}$

Subscript 'i' is used to denote the cross-sectional dimension and 't' to represent the time-series dimension. In this equation, Y_{it} represent the dependent variable in the model, which is the firm performance; X_{it} contained the set of explanatory variables in the regression model; and α_i is considered constant over time 't' and is specific to the individual cross-sectional unit i. The final model for this study is designed with the expectation that it better explained the relationship and prediction of the study.

The model used to test the hypothesis formulated for this study is presented below.

$$TQ_{it} = \beta_0 + \beta 1\ NPLR_{it} + \beta 2\ LLPR_{it} + \beta 3\ SLR_{it} + \beta 4\ LA_{it} + \beta 5\ CAR_{it} + \beta 6\ FSIZE_{it} + \varepsilon_{it}$$

Where:

β_0 = intercept

β_1- β_6= Coefficient of the independent variables

TQ = Tobin's Q

NPLR = Non-Performing Loan Ratio

LLPR = Loan Loss Provisions Ratios

SLR = Secured Loan Ratio

LA= Loans and Advances

CAR=Capital Adequacy Ratio

FSIZE = Firm Size

εit = Residual or error term of firm 'i' in period 't'

Table 3.2 Variables Definitions and Measurement

Variable Acronym	Variable Measurement	Source (s)
TQ	Ratio of Capital/Shareholder's Fund to Weighted Risk Assets	(Al-Matari, Al-Swidi & Fadzil, 2014).
NPLR	Non-performing loans to Total Loans (Non - Performing Loans Ratios)	(Gizaw, Kebede & Selvaraj 2015)
LLPR	Loan Loss Provisions Ratios to Classified Loan	(Funso, Kolade&Ojo, 2012)
SLR	Secured Loans to Unsecured Loans (Secured Loan Ratio)	(Uwuigbe, Ranti, & Babajide, 2015)
LA	Ratio of Loan & Advances to Total deposit (Loan and Advances Ratio)	(Kargi, 2013)
CAR	Ratio of Capital to Risk Assets.	(Abiola & Olausi, 2014)
FSIZE	Natural logarithm of total assets	(Sanda, Mikailu & Garba, 2005).

Source: Computed by Author based on reviewed literature

CHAPTER FOUR
DATA PRESENTATION AND ANALYSIS

4.1 Introduction

The chapter starts with the preliminary analysis of the study result, using descriptive statistics. This was followed by the presentation of the results of the model estimations and the inferences drawn from the tests of the hypotheses. In addition, findings were discussed and policy implications analyzed. The chapter concluded with a discussion of the robustness of the results for dependent and independent variables.

4.2 Descriptive Statistics

The simple descriptive statistic is first presented in Table 4.1 where minimum, maximum, mean, standard deviation and number of observation of the data for the variables used in the study are described. The descriptive statistics are presented in the table below:

Table 4.1 Descriptive Statistics

Variables	Min	Max	Mean	Std. Dev.	N
TQ	.001	.042	.011	.008	126
NPLR	.056	.310	.153	.057	126
LLPR	.001	1.085	.059	.124	126
SLR	.017	.632	.125	.107	126
LA	.057	.671	.396	.129	126
CAR	.034	.107	.070	.012	126
FSIZE	18.799	22.077	20.759	.720	126

SOURCE: Computed from Annual Reports of Sampled Banks 2007-2015 using STATA

Table 4.1 reports the descriptive statistics for the dependent and independent variables respectively (TQ=Tobin's Q, NPLR=Non-Performing Loans to Total Loans, LLPR= Loan Loss Provisions Ratios, SLR= Secured Loan Ratios, LA=Loan & Advances, CAR= Capital Adequacy Ratios and FSIZE= Firm Size).

From the table, it can be seen that the mean performance of the banks under study earns about 1.1% market value of its equity, as measured by Tobin's Q and maximum of 4.2% for the period under consideration. Non-Performing Loans has an average of 0.153 with standard deviations of 0.057. The difference between the maximum (0.310) and minimum (.056) and standard deviations (0.057) shows a low variability with the Non-performing loans ratio.

Loan loss provisions which shows the default risk that the bank expects to sustain from lending business has an average of 59% loan loss reserve amount with a standard deviation of .124. It shows that banks tends to be more profitable when they are able to undertake more lending activities, if a higher level of provision is maintained then bank's ability to give loan will decrease and thus depresses banks' performance. Capital Adequacy Ratio has a minimum value of 3.4% and maximum of 10.7% with an average (mean) of 7% equity, although this is below the 15% statutory requirement, as it is been used by the Central Bank of Nigeria as a protection of the depositors money from credit risk and other failures.

The ratio of loans and advances to total deposit is the most commonly used measure of bank liquidity and has a minimum of 5.67% and maximum of 67%, which shows that the deposit money banks in Nigeria lend up to 67% of its deposit fund for lending and on average 40%. The secured loans of the listed deposit money bank in Nigeria stood at 63% (maximum), 1.7% (minimum) and 13%(average), with over ₦146 million as minimum total asset and a maximum of ₦3.9 billion.

4.3 Correlation Matrix

This section presents correlation matrix to reveal the relationship between the dependent and independent variables as well as the control variable.

Table 4.2 Correlation Matrix of Dependent and Independent Variables

Variables	TQ	NPLR	LLPR	SLR	LA	CAR	FSIZE
TQ	1.00						
NPLR	-.259*	1.00					
LLPR	.356*	-.437*	1.000				
SLR	-.135	-.002	-.225**	1.000			
LA	-.209**	.163***	-.198**	-.147	1.000		
CAR	.042	-.214**	.140	.114	.195**	1.000	
FSIZE	.258	.173***	.121	-.074	-.154	-.062	1.000

SOURCE: *Computed from Annual Reports of Sampled Banks 2007-2015 using STATA*
**Correlation is significant at 1%*
***Correlation is significant at 5%*
****Correlation is significant at 10%*

Table 4.2 shows the correlation matrix with the correlation coefficient between all pairs of variables along with their significances. Checking the pattern of relationships between dependent and independent variables, it is observed that Non-Performing Loans, Secured Loans and Loans & Advances have negative associations with the market performance of the sampled banks and are significant at 1% (NPLR) and 5% (LA) with the exclusion of Secured Loans. This signifies that, Non-Performing Loans, Secured Loans and Loans & Advances are negatively related to the market performance of the sampled banks.

On the other hand, Loans Loss Provisions and Capital Adequacy are positively associated with the market performance of the listed deposit money banks in Nigeria but Loan Loss Provisions is statistically significant, as an increase in its amount will improve the market performance of the sampled banks.

The table also revealed an insignificant relationship between the explanatory variables themselves, as none of the coefficient of the variables exceeded 50%. However, this may not be enough evidence to strongly justify the presence or existence of multicolinearity and autocorrelation problems among the independent variables under study before computing the tolerance value and VIF. Where the result obtained from the tolerance value and VIF was above the expected limits and inconsistent with the rule of thumb of less than 1 and 10 then the problems of multicolinearity exist among the independent variables. The tolerance value and VIF were computed to assess the presence of multicolinearity using Stata 10, and the result found was consistently less than 1 and 10 respectively. This evidence is indicating complete absence of multicolinearity and the appropriateness and fitness of the model of study comprising one dependent and five independent variables

4.4 Presentation, Analysis and Interpretation of Regression Results

This section presents the regression result of the dependent variable (Performance; TQ) and the independent variables of the study (NPLR, LLPR, SLR, LA, CAR) and the control variable (firm size). It follows with the analysis of the association between dependent variable and each independent variable.

The summary of the regression result obtained from the model of the study ($TQ_{it} = \beta_0 + \beta 1\ NPLR_{it} + \beta 2\ LLPR_{it} + \beta 3\ SLR_{it} + \beta 4\ LA_{it} + \beta 5\ CAR_{it} + \beta 6\ FSIZE_{it} + \varepsilon_{it}$) is presented in Table 4.4

Table 4.3: Regression Results

Variables	Coefficients	T-Statistics	T-Sig	Std Error	VIF	Tolerance
-CONS	-.032	-1.77	.080	.022		
NPLR	-.001	-1.30	.197	.010	1.33	.753
LLPR	.016	3.09	.002	.007	1.40	.716
SLR	-.007	-1.13	.260	.007	1.16	.863
LA	-.009	-1.48	.143	.006	1.20	.834
CAR	.026	0.35	.728	.060	1.17	.857
FSIZE	.002	2.49	.014	.000	1.06	.941
R2			.2005			
Adj R^2			.1601			
F. Statistics			14.51			
Significance			0.000			

SOURCE: Computed from Annual Reports of Sampled Banks 2007-2015 using STATA

The multiple coefficient of determination (R^2) gives the proportion or percentage of the total variation in the dependent variable explained by the explanatory variable jointly. Hence, it signifies that 20% of total variation in the market performance of listed deposit money banks in Nigeria is caused by their non-performing loans, loan loss provisions, secured and unsecured loan, loans and advances, capital adequacy and firm size, while 80% is caused by factors outside the model. The F-Statistics is 14.51, which indicates that the model is fit and the explanatory variable are properly selected, combined and used.

4.5 Robustness Test of Dependent and Independent Variables

This section presents the results of robustness tests conducted in order to improve the validity of all statistical inferences for the study. These tests include; multicollinearity test, heteroscedasticity test, cross-sectional dependence test and Shapiro-wilk test.

I. **Multicollinearity Test**: This is to check whether there is a correlation between the independent variables which will mislead the result of the study. Table 4.3 above presents the matrix of the linear relationships among the independent variables. From

observation, no variable with high correlation above 0.50 and present no threat. Multicollinearity should not be a problem for the sample of the study, as the magnitude of the correlations amongst the remaining independent variables is low. Collinearity diagnostics were observed through the application of variance inflation factors (VIF) and tolerance values and indicated the absence of multicollinearity in the data.

Table 4.3, shows that non-performing loans, loan loss provisions, secured and unsecured loan, loans and advances, capital adequacy and firm size has 1.33, 1.40, 1.16, 1.20, 1.17 and 1.06 respectively values of VIF, while the tolerance values are 0.753 (non-performing loans), 0.716 (loan loss provisions) 0.863(secured and unsecured loan), 0.834 (loans and advances), 0.857 (capital adequacy) and 0.941 (firm size). This shows the absence of multicollinearity as the computed VIF and tolerance values with the aid of STATA are found to be consistently smaller than one (1) and ten (10) respectively. This shows the appropriateness of fitting the model of the study with a dependent variable to the five independent variables.

II. **Heteroscedasticity:** This check was carried out to check whether the variability of error terms is constant or not. The present of heteroscedasticity signifies that the variation of the residuals or term error is not constant which would affect inferences in respect of beta coefficient (that is coefficient of determination and F-statistics) of the study. The result of the test revealed that there is no presence of heteroscedasticity because the chi-square value was smaller than the P-value, as depicted below.

Table 4.4Heteroscedasticity Test

VARIABLES	T-Sig
Chi 2 (1)	2.35
Prob> Chi 2	0.1252

SOURCE: STATA Output Result

4.6 Hypotheses Testing and Discussions of Results

This section deals with presentation of univariate analysis conducted for testing the hypotheses earlier stated in Chapter One. Various robustness tests were conducted to analyze the results obtained under several conditions. The tests were made to get findings with greater level of reliability and credibility in this study. Table 4.3 in the study presented the results used for the hypotheses test in the study.

Table 4.3 shows that the independent variables loan loss provisions and capital adequacy are positive, while non-performing loans, secured loans and loans and advances are negative. In addition, the statistical significance was limited only to loan loss provisions (1%).

The results for each hypothesis are presented below:

4.6.1 Non-performing loans and Market performance of listed deposit money banks in Nigeria.

$H0_{1:}$ Non-performing loans have no significant influence on market performance of listed deposit money banks in Nigeria.

Non-performing loans measured by non-performing loans ratio is found to be negatively associated with the market performance of the sampled banks, indicating that the higher the amount of non-performing loans, the lesser the market performance of listed deposit money

banks in Nigeria will be. Therefore, this provides evidence of failing to reject hypothesis one of the study. Thus, for Hypothesis 1, H_o is not rejected. This result is consistent with the findings of Felix & Claudine (2008), Kargi (2011) Naveed et al (2011), Funso *et al.* (2012),Ogboi & Unuafe (2013), but contrary to the reported results of Abiola & Olausi (2014).

This shows that at every one percent (1%) increase in non-performing loans amount, the market performance of listed deposit money banks in Nigeria declined by #1.30k. This implies that NPLR represent how much of the bank loans and advances are becoming non-performing, which measures the extent of credit default risk that the bank sustained. As the amount of the ratio increases, it will show bad message for the management of the banks as it depicts high probability of none recovering of the banks' major assets.

4.6.2 Loan loss provisions and Market performance of listed deposit money banks in Nigeria.

$H0_2$: Loan loss provisions have no significant effect on market performance of listed deposit money banks in Nigeria.

Loan loss provisions is found to be significant and positively associated with the market performance of listed deposit money banks at 1% level of significance, indicating that, the higher the amount of loan loss provisions of the of listed deposit money banks in Nigeria, the better will be its market performance. Therefore, this provides evidence for rejecting hypothesis two of the study. Thus, for Hypothesis 2, H_o is rejected. This result is consistent with the findings of Ahmed

et al (1998) and Ogboi & Unuafe (2013), but contrary to the reported results of Funso et al (2012).

This shows that at every one percent (1%) increase in the amount of loan loss provisions, the market performance of listed deposit money banks in Nigeria increases by #3.09k.

4.6.3 Secured loans and Market performance of listed deposit money banks in Nigeria.

$H0_{3:}$ Secured loans have no significant effect on market performance of listed deposit money banks in Nigeria.

Looking at the relationship between secured loans and market performance of listed deposit money banks in Nigeria, a negative relation is observed with a coefficient of -0.007and t-value of -1.13 but not statistically significant. This association indicates that for every increase in the amount of secured loans, the market performance of the sampled banks will decrease by #1.13k. The negative association between secured loans and market performance of listed deposit money banks in Nigeria shows a decline in the benefit of providing specified asset for claim in the event of default in payment. In line with the result reported, this provides evidence of failing to reject hypothesis three of the study. Thus, for Hypothesis 3, H_o is not rejected.

4.6.4 Loans and Advances and Market performance of listed deposit money banks in Nigeria.

$H_{o:}$ Loans and advances have no significant effect on the market performance of listed deposit money banks in Nigeria.

Loans and advances measured by a ratio to total deposit (loan and advances ratio) are found to be negative but not significant with the market performance of listed deposit money banks in

Nigeria. This shows that the higher the amount of loans and advances of deposit money banks, the performance will decrease by #1.48k.

In line with the result reported, this provides evidence of failing to reject hypothesis four of the study. Thus, for Hypothesis 4, H_o is not rejected.

The inverse relationship is true of Nigerian banking system during the period under study when most loans and advances were concentrated in the stock market to create what is known as margin loans. (This is the art of granting loans to stock brokers to purchase share using the share as security for the loan). Unfortunately, most of these loans were lost as a result of Nigerian banks financial crisis when foreign portfolio investors had to divest their funds. This finding is consistent with Kargi (2011), Ogboi &Unuafe (2013) and contrary to Funso et al (2013).

4.6.5 Capital Adequacy and Market performance of listed deposit money banks in Nigeria.

$H_{o:}$ Capital adequacy has no significant effect on the market performance of listed deposit money banks in Nigeria. Capital Adequacy, measured by the ratio of shareholders' fund to total assets, is found to be positively associated with the performance of listed deposit money banks in Nigeria, indicating that the larger the capital base of deposit money banks in Nigeria, the better will its market performance.

The reported result in respect of capital adequacy provides an evidence of failing to reject hypothesis five of the study. Thus, for hypothesis 5, H_o is not rejected. In support of this result is

the work of Epure & Lafuente (2012) and Abiola & Olausi (2014), but contrary to Naveed et al (2011).

Expectedly, the enhancement of capital base of Nigerian banks in the period under study from N2billion to N25 billion significantly improved the profitability of banks. The lesson one draws from this is that enhanced capital base, especially Tier one capital protected Nigerian banks against financial losses from default loans, and also afforded banks opportunity to compete internationally especially in the area of downstream oil sector.

4.7 Discussion and Policy Implication of Findings

The section discusses the findings of the study and also included its implications as a contribution to the existing body of knowledge within the accounting research, regulators, providers and users of accounting information.

Non-Performing Loans measured as a ratio to total loan was found to be negative but not significantly related to market performance of the listed deposit money banks in Nigeria. The negative relationship might be attributed to poor corporate governance practices and the absence or non- adherence to credit risk management practices. This finding is consistent with Kolapo *et al*. (2012) where they opined that an increase in non-performing loan would eventually lead to a decrease in profitability. By implication, non-performing loans in particular, indicates how banks manage their credit risk because it defines the proportion of loan losses amount in relation to total loan amount.

Loan Loss Provision was found to be positive and statistically related to market performance of the listed deposit money banks in Nigeria. The positive effect of loan Loss provision may signify that the lending business in Nigeria deposit money banks as presumed by managers could be risky and could turn out to improve its market performance, through strengthening of their credit risk management capability and in addition to allowing high loan loss provisions to loans and advances.

From the finding, Secured Loans was found to be negatively associated with the market performance of listed deposit money banks in Nigeria, which could be due to ineffective institutional measures to deal with credit risk management and might shift the cost on loan default in form of higher interest rate on loans to other customers. Theoretically when loans are secured, it is expected to improve the market performance of listed deposit money banks, this is because specific assets are set aside for claims in case of default in the payment of loan.

Loans and Advances are relatively illiquid and subject to higher default risk than other bank assets, but the study found a negative association between loans and advances and market performance of listed deposit money banks in Nigeria. This result may be explained by taking into account the fact that the more financial institutions are exposed to high risk loans, the higher is the accumulation of unpaid loans, implying that these loan losses have produced lower returns to many deposit money banks in Nigeria.

Capital Adequacy is very important for the solvency and improvement in the performance of banks. This is because of possible financial losses that could result from none payment of loans,

which makes the business of banking risky. Banks are therefore required to have adequate capital, not only to remain solvent, but to avoid the failure of the financial system. The CBN require commercial banks maintain a 15% capital adequacy ratio.

It is theoretically acceptable that banks with good capital adequacy ratio have a good performance. A bank with a strong capital adequacy is also able to absorb possible loan losses and thus avoids bank 'run', insolvency and failure. The study result indicates that, although capital adequacy ratio is positive, it is not significant. The insignificant effect of the level of CAR on banks' firm market performance seems to confirm the directive of the Central Bank of Nigeria (CBN) to deposit money banks to increase their capital from N25 billion.

CHAPTER FIVE
SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

5.1 Summary of Findings

The study examined the effect of credit risk management on the market performance of listed deposit money banks in Nigeria. A multiple regression model was developed for the purpose of explaining and empirically predicting the market performance of listed deposit money banks in Nigeria. The developed model of the study estimates the relationship and effect of five explanatory variables – Non-Performing Loans, Loan Loss Provisions, Secured Loans, Loans and Advances and Capital Adequacy along with controlling for firm size all on one explained variable (performance: Tobin's Q) by means of ordinary least square.

The study centered on the premise on how credit risk management affects the market performance of listed deposit money banks in Nigeria, by examining the extent to which credit risk management could influences the market performance of listed deposit money banks in Nigeria. The independent variables of the study were Non-performing loans, Loan Loss Provisions, Secured loans, Loan & Advances and Capital Adequacy. These independent variables were used in formulating our hypotheses from one to five. While the dependent variable (Performance: Tobin's Q) was measured as the ratio of market value of equity plus liquidity value of firms preference stock plus net current asset to book value of total assets.

The findings of this study are based on panel data collected for the period 2007 – 2015, and from a sample of fourteen (14) listed deposit money banks, in Nigeria Stock Exchange as at 31st December, 2015. The result of the study showed that only one of the explanatory variables was significant in explaining the market performance of the listed deposit money banks in Nigeria.

Loan loss provision was positively significant at 1%, while Capital adequacy was positive but not significant, while non-performing loans, secured loans, and loans & advances were all inversely associated to the market performance of listed deposit money banks in Nigeria.

These results are considered to be contribution to the accounting and finance literature and additionally, the results could provide accounting practitioners as well as regulators with valuable insight into the complex interactions between the variables under study.

5.2 Conclusions

The study draws its conclusions based on the empirical and statistical evidence arrived upon after the analysis and discussions of the result from the preceding chapter as stated below. Firstly, the study has empirically provided an evidence for selecting, combining and using five independent variables that formed the credit risk management (non-performing, loan loss provisions, secured loans, loans & advances and capital adequacy) in explaining and predicting the performance of the sampled banks.

Secondly, non-performing loans had a negative but not significant effect on the market performance of listed deposit money banks in Nigeria, which could be attributed to poor corporate governance and the absence or non- adherence to credit risk management practices.

Thirdly, the association between loan loss provisions and market performance of listed deposit money banks in Nigeria with expectation. This may portray riskiness of lending which improve its performance, through strengthening of credit risk management capability.

Fourthly, secured loan was expected to be positively related to the market performance of listed deposit money banks in Nigeria but the inverse was the case, as it could be ascribed to ineffective institutional measures to deal with credit risk management.

Fifthly, loans and advances were found to be negatively related to the market performance of listed deposit money banks in Nigeria, while capital adequacy was positively related to the sampled banks and shows its adequacy to absorb possible loan losses and thus avoids bank 'run', insolvency and failure.

5.3 Limitations of the Study

Like any other research, the result of this study is subject to some limitations due to the following factors. Firstly, the study limited itself to secondary data from the audited financial reports, if there where alteration in the numbers of the report could affect the findings of this study.

In addition, ordinary least square was used as technique of data analysis as the probability result of hausman specification was not significant but if generalized least was used, the findings of the study might change. Although listed deposit money banks was used as the domain for the study but the individual firms have their own distinct characteristics such as age, which the study did not recognize and formed part of its limitation.

5.4 Recommendations

In view of the above conclusions that were reached based on the findings of the study, the below recommendation is proffered;

1. It is recommended that deposit money banks in Nigeria should enhance their capacity in credit analysis and loan administration while the regulatory authority should pay more attention to banks' compliance to relevant provisions of the Bank and other Financial Institutions Act (1999) and prudential guidelines.
2. Regulators should be more concern in making capital charges more responsive to a bank's actual credit exposure by setting new rules for how much capital banks most set aside to cover potential losses.

5.5 Future Research

This research work examined the effect of credit risk management on market performance of listed deposit money banks in Nigeria and has paved the way for further research in the following areas.

1. The same research can be replicated by incorporating more financial firms.
2. Other credit risk management determinants could be added, in view of replicating the same research, as the overall explanatory power of the study model accounts for 20% suggesting that there are other factors not accounted for.
3. The research can also be replicated but using other measures of performance such as financial measures in order to observe the superiority of the measure using coefficient of determination.

References

Abiola, I. & Olausi, A. S. (2014).The Effect of Credit Risk Management on the Commercial Banks Performance in Nigeria. International Journal of Management and Sustainability. 3(5): 295-306

Adeusi, S. O., Akeke, N. I., Adebisi, O. S., & Oladunjoye, O. (2013). Risk Management and Market performance of Banks in Nigeria. *IOSR Journal of Business and Management (IOSR-JBM) e-ISSN: 2278-487X, p-ISSN: 2319-7668. 14(6): 52-56 www.iosrjournals.org*

Agus, C. & Rifki, l. (2013). Credit Risk Management in Indonesian Islamic Banking Afro Eurasian Studies, 2, 41-55.

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.S., Takeda, C. & Shawn, T. (1998). Bank Loan Loss Provision: A Reexamination of Capital Management and Signaling Effects, *Working Paper, Department of Accounting, Syracuse University*, 1-37.

Alan, M. (2008). International Financial Reporting: A practical Guide. Publication of FRSB

Al-Khouri, R. (2011). Assessing the Risk and Performance of the GCC Banking Sector, *International Journal of Finance and Economics, ISSN 1450-2887, Issue65, 72-8.*

Al-Matari, E.M, Al-Swidi, A.K & Fadzil, F.H (2014). The Measurements of Firm Performance's Dimensions. Asian Journal of Finance & Accounting, 6(1).

Altunbas, Y., (2005). *Mergers and acquisitions and bank performance in Europe – The role of strategic similarities.European central bank, Working Paper Size Series, No. 398.*

Asimakopoulos, I., Samitas, A. & Papadogonas, T. (2009). *Firm Specific and Economy Wide Determinants of Firm Profitability*: Greek evidence using panel data. Managerial Finance, 35(11), 930-939

Basel Committee on Banking Supervision, (1999). *Principles for the management of credit Risk, CH – 4002 basel,* Switzerland Bank for International Settlement.

Basel Committee on Banking Supervision, (2001). Risk Management Practices and Regulatory Capital: Cross sectional Comparison. Basel Committee on Banking Supervision. Retrieved fromwww.bis.org.

Ben-Naceur, S. & Omran, M. (2008).The Effects of Bank Regulations, Competition and Financial Reforms on MENA Banks' Profitability, *Economic Research Forum Working Paper No. 44.*

Caprio G J & Klingebiel D (1996). Bank Insolvency: Bad Luck, Bad Policy or Bad Banking, Annual World Bank Conference on Development Economics.

Charles, O. Kenneth U. O. (2013). Effect of Credit Risk Management and Capital Adequacy on the Market performance of Commercial Banks in Nigeria. J. Emerging Issues Econs. Finance Bank. 2 (3) http://www.globalbizresearch.com/.../22882-JE/EFB-OGBOI

Cheng, M.C., Wang H.C., Lee, C.C., &Teng P.Y. (2012).The new measure performance indicator as determinants of executive compensation and reward, Taiwan.

Chen, K. & Pan, C. (2012). An Empirical Study of Credit Risk Efficiency of Banking Industry in Taiwan, *Web Journal of Chinese Management Review, 15(1), 1-16.*

De Villiers, R. R. & Middleberg, S. L. (2013*).*Determining the Effect of Capitalizing long-term Operating leases on the Financial ratios of the top 40 JSE-listed companies. *International Business and Economic Research Journal, 12(6).*

D'Amato, E. (2010). The Top 15 Financial Ratios.Lincoln Indicators Pty Ltd. Produced by the Australian Shareholders' Association*ABN 40 000 625 669.*

Epure, M. & Lafuente, I. (2012). Monitoring Bank Performance in the Presence of Risk, *Barcelona GSE Working Paper Series No.61*.

Felix, A. T & Claudine, T. N. (2008). Bank Performance and Credit Risk Management, Unpublished Masters Dissertation in Finance, University of Skovde.

Fofack, H. (2005). Non-Performing Loans is Sub-Sahara Africa: Causal Analysis and Macroeconomic Implications. World Bank Policy Research Working Paper No.WP 3769.

Fulbier, R. U., Silva, J. L. & Pferdehirt, H. M. (2008). Effect of Lease Capitalization on Financial Ratios of listed German Companies. *Paper presented at the 29th EAA annual congress in Dublin, Ireland.*

Funso, K. T., Kolade, A. R. & Ojo, O. M. (2012). Credit risk and commercial banks' performance in Nigeria: *A Panel Model Approach. Australian Journal of Business and Management Research*, 2(2); 31-38

Gizaw, M., Kebede, M. & Selvaraj, S. (2015). The effect of credit on profitability performance of commercial banks in Ethiopia.*African Journal of Business Management.9 (2).*

Grant, J. (2003), *Foundations of Economic Value Added*, Second Ed., New York: John Wiley & Sons.

Hayati, I. & Shahrul, K. (2011). Factors Influencing Credit Risk of Islamic Bank(A Case study of Malaysia).

Helfert, E. A. (2011). Techniques of Financial Analysis: A practical Guide to Applied Managerial Finance. *Mumbai:Jaico Publishing House.*

Kargi, H. S. (2011). Credit Risk and the Performance of Nigerian Banks, Ahmadu Bello University, Zaria.

Kithinji, Angela M. (2010). Credit Risk Management and Profitability of Commercial Banks in Kenya, School of Business, University of Nairobi-kenya. 1-42. Accessed at:http://www.aibuma.org/proceedings2011/aibuma2011-submission232.pdf

Lindgren, H. (1987). *Banks, Investment Company, Banking Firms, Stockholm Enskilda Bank (1924-1945),* Institute for Research in Economic History, Stockholm School of Economics, Stockholm.

Marsh, I.W. (2008). The Effect of Lenders' Credit Risk Transfer Activities on Borrowing Firms' Equity Returns, Cass Business School, London and Bank of Finland.

Naveed, A., Muhammad,F. A. & Muhammad, U.(2011). Risk Management Practices and Islamic Banks: An Empirical Investigation from Pakistan Interdisciplinary Journal of Research in Business, 1(6), 50-57

Ogboi, C, &Unuafe, O. K. (2013).Effect of Credit Risk Management and Capital Adequacy onthe Market performance of Commercial Banks in Nigeria Journal of Emerging Issues in Economics, Finance and Banking (JEIEFB) *An Online International Monthly Journal* (ISSN: 2306-367X)2(3).

Onyeagocha S.U.O. (2001), problems and challenges of Nigeria Financial Institution in credit operations. *Nigeria Banker, July-December, 2001.*

Pandy, I.M (2006). *Financial Management,* 4thed, New Delhi: Vikas Publishing house Pvt Ltd

Prakash, P., &Pouded, S. (2012). The Effect of Credit Risk Management on Market performance of Commercial Banks Nepal.Int. J. Arts Commerce. 1 (5): 9-15. http:/www.ijac.org.uk.images/frontimages/gattery/vol_1_No_5/2.pfd

Randut, R. & Biclesamu, *C. (2008).*Risk Analysis on the Leasing market. *The academy of economic studies, master DAFI.*

Sanda, A. U., Mikailu, A. S., &Garba, T. (2005).Corporate governance mechanisms and firm's market performance in Nigeria. *The African Economic Research Consortium.* Kenya.

Sanusi, J., 2002. Central bank and the macroeconomic environment in Nigeria. Quarterly Review, 3(3): 25-34.

Shao, Y. & Yeager, T.J. (2007). The Effects of Credit Derivatives on U.S. Bank Risk and Return, Capital and Lending Structure, Draft, Sam M. Walton College of Business, Arkansas.

Stewart, G. B. (1991). *The Quest for Value: A Guide for Senior Managers*, First Ed., New York: Harper Business.

Stewart, G. B. (1999). *The Quest for Value*, Second Ed., New York: Harper Business.

Uwuigbe, U.U, Ranti, O. &Babajide, O. (2015).Credit Management and Bank Performance of Listed Banks in Nigeria.*Journal of Economics and Sustainable Development*, 6, (2)

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Appendix I; Stata Output

```
. xtset id year, yearly
       panel variable:  id (strongly balanced)
        time variable:  year, 2007 to 2015
                delta:  1 year

. su tq nplr llpr slr la car fsize, detail

                            tq
-------------------------------------------------------------
      Percentiles      Smallest
 1%       .00156       .001215
 5%      .003635        .00156
10%      .003986       .002311       Obs                 126
25%      .005498       .002418       Sum of Wgt.         126

50%     .0071355                     Mean           .0105908
                     Largest         Std. Dev.      .0083965
75%      .010353       .031223
90%      .024515       .033606       Variance       .0000705
95%      .028367       .039633       Skewness       1.660681
99%      .039633       .041647       Kurtosis        5.03768

                           nplr
-------------------------------------------------------------
      Percentiles      Smallest
 1%      .029169       .027562
 5%       .07837       .029169
10%      .088951       .054895       Obs                 126
25%      .117903       .055651       Sum of Wgt.         126

50%      .143566                     Mean           .1533998
                     Largest         Std. Dev.      .0571776
75%      .183008       .285946
90%      .234812       .288941       Variance       .0032693
95%      .259301       .298858       Skewness       .5942062
99%      .298858        .30979       Kurtosis       3.167583

                           llpr
-------------------------------------------------------------
      Percentiles      Smallest
 1%      .001305       .000948
 5%      .004874       .001305
10%       .00692       .002879       Obs                 126
25%       .01148        .00297       Sum of Wgt.         126

50%     .0223825                     Mean           .0593733
                     Largest         Std. Dev.      .1241323
75%      .059054       .422226
90%          .12        .50276       Variance       .0154088
95%      .162062       .568982       Skewness       5.675823
99%      .568982       1.08452       Kurtosis       41.78562

                            slr
-------------------------------------------------------------
      Percentiles      Smallest
 1%      .016524       .016487
 5%      .025049       .016524
10%      .030984       .019435       Obs                 126
25%      .049172       .021888       Sum of Wgt.         126

50%      .098478                     Mean           .1246289
                     Largest         Std. Dev.      .1065284
75%      .162995        .42444
90%      .245391       .462209       Variance       .0113483
95%      .312996          .543       Skewness       2.006022
99%        .543       .631742       Kurtosis       8.295499
```

la

	Percentiles	Smallest		
1%	.088446	.056505		
5%	.157549	.088446		
10%	.212674	.109139	Obs	126
25%	.313213	.146787	Sum of Wgt.	126
50%	.424946		Mean	.3955604
		Largest	Std. Dev.	.1289058
75%	.496055	.606953		
90%	.54356	.633803	Variance	.0166167
95%	.569091	.6423	Skewness	-.4040012
99%	.6423	.671116	Kurtosis	2.613036

car

	Percentiles	Smallest		
1%	.035294	.033833		
5%	.048491	.035294		
10%	.052283	.045837	Obs	126
25%	.063213	.047498	Sum of Wgt.	126
50%	.070108		Mean	.0699305
		Largest	Std. Dev.	.0124041
75%	.077207	.091461		
90%	.08706	.092429	Variance	.0001539
95%	.089691	.102313	Skewness	-.0553335
99%	.102313	.107384	Kurtosis	3.640875

fsize

	Percentiles	Smallest		
1%	19.1416	18.7989		
5%	19.5593	19.1416		
10%	19.9203	19.2015	Obs	126
25%	20.2652	19.2815	Sum of Wgt.	126
50%	20.76205		Mean	20.75924
		Largest	Std. Dev.	.7195561
75%	21.2742	22.0181		
90%	21.7668	22.0181	Variance	.517761
95%	21.8834	22.0768	Skewness	-.176151
99%	22.0768	22.0768	Kurtosis	2.570963

```
. pwcorr tq nplr llpr slr la car fsize, star (0.05) sig
```

	tq	nplr	llpr	slr	la	car	fsize
tq	1.0000						
nplr	-0.2587*	1.0000					
	0.0034						
llpr	0.3562*	-0.4368*	1.0000				
	0.0000	0.0000					
slr	-0.1350	-0.0022	-0.2253*	1.0000			
	0.1319	0.9802	0.0112				
la	-0.2089*	0.1626	-0.1982*	-0.1469	1.0000		
	0.0189	0.0690	0.0261	0.1006			
car	0.0419	-0.2143*	0.1399	0.1136	0.1945*	1.0000	
	0.6412	0.0160	0.1183	0.2054	0.0290		
fsize	0.2582*	-0.1729	0.1209	-0.0740	-0.1541	-0.0615	1.0000
	0.0035	0.0529	0.1774	0.4101	0.0849	0.4941	

```
. reg tq nplr llpr slr la car fsize
```

Source	SS	df	MS
Model	.001766549	6	.000294425
Residual	.007046021	119	.00005921
Total	.00881257	125	.000070501

Number of obs = 126
F(6, 119) = 4.97
Prob > F = 0.0001
R-squared = 0.2005
Adj R-squared = 0.1601
Root MSE = .00769

tq	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
nplr	-.0096428	.0100212	-0.96	0.338	-.0294858	.0102002
llpr	.0162599	.0065515	2.48	0.014	.0032872	.0292325
slr	-.0072318	.0069513	-1.04	0.300	-.0209962	.0065325
la	-.0090179	.0058476	-1.54	0.126	-.0205967	.0025609
car	.0255259	.0599384	0.43	0.671	-.0931581	.1442099
fsize	.0021893	.0009859	2.22	0.028	.0002371	.0041414
_cons	-.0317561	.0217825	-1.46	0.148	-.0748876	.0113754

```
. vif
```

Variable	VIF	1/VIF
llpr	1.40	0.716203
nplr	1.33	0.753256
la	1.20	0.833663
car	1.17	0.856926
slr	1.16	0.863813
fsize	1.06	0.941256
Mean VIF	1.22	

```
. hettest

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

         chi2(1)      =     2.35
         Prob > chi2  =   0.1252

. swilk tq nplr llpr slr la car fsize
```

Shapiro-Wilk W test for normal data

Variable	Obs	W	V	z	Prob>z
tq	126	0.76228	23.840	7.124	0.00000
nplr	126	0.86716	13.322	5.816	0.00000
llpr	126	0.40773	59.396	9.174	0.00000
slr	126	0.81067	18.987	6.612	0.00000
la	126	0.97822	2.184	1.755	0.03964
car	126	0.98624	1.380	0.723	0.23473
fsize	126	0.98617	1.387	0.735	0.23123

```
. xtreg tq nplr llpr slr la car fsize, fe

Fixed-effects (within) regression               Number of obs      =       126
Group variable: id                              Number of groups   =        14

R-sq:  within  = 0.0371                         Obs per group: min =         9
       between = 0.0121                                        avg =       9.0
       overall = 0.0012                                        max =         9

                                                F(6,106)           =      0.68
corr(u_i, Xb)  = -0.1049                        Prob > F           =    0.6649

------------------------------------------------------------------------------
          tq |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
        nplr |   .0003574   .0067563     0.05   0.958    -.0130377    .0137524
        llpr |   .0062846   .0046016     1.37   0.175    -.0028384    .0154076
         slr |   .0015313   .0047439     0.32   0.747    -.0078739    .0109365
          la |   .0073896   .0042606     1.73   0.086    -.0010575    .0158366
         car |  -.0433321   .0499195    -0.87   0.387    -.1423024    .0556381
       fsize |   .0000519   .0007825     0.07   0.947    -.0014995    .0016032
       _cons |   .0090057   .0174363     0.52   0.607    -.0255635    .0435749
-------------+----------------------------------------------------------------
     sigma_u |  .00740453
     sigma_e |  .00481511
         rho |  .70279998   (fraction of variance due to u_i)
------------------------------------------------------------------------------
F test that all u_i=0:     F(13, 106) =    15.22                 Prob > F = 0.0000
```

. est store fixed

```
. xtreg tq nplr llpr slr la car fsize, re

Random-effects GLS regression                   Number of obs      =       126
Group variable: id                              Number of groups   =        14

R-sq:  within  = 0.0161                         Obs per group: min =         9
       between = 0.3957                                        avg =       9.0
       overall = 0.1344                                        max =         9

Random effects u_i ~ Gaussian                   Wald chi2(6)       =      5.35
corr(u_i, X)       = 0 (assumed)                Prob > chi2        =    0.4993

------------------------------------------------------------------------------
          tq |      Coef.   Std. Err.      z    P>|z|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
        nplr |  -.0096428   .0100212    -0.96   0.338    -.0294858    .0102002
        llpr |   .0162599   .0065515     2.48   0.014     .0032872    .0292325
         slr |  -.0072318   .0069513    -1.04   0.300    -.0209962    .0065325
          la |  -.0090179   .0058476    -1.54   0.126    -.0205967    .0025609
         car |   .0255259   .0599384     0.43   0.671    -.0931581    .1442099
       fsize |   .0021893   .0009859     2.22   0.028     .0002371    .0041414
       _cons |  -.0317561   .0217825    -1.46   0.148    -.0748876    .0113754
-------------+----------------------------------------------------------------
     sigma_u |   .0032941
     sigma_e |  .00481511
         rho |  .31880962   (fraction of variance due to u_i)
------------------------------------------------------------------------------
```

. est random

```
. hausman fixed random

                 ---- Coefficients ----
             |      (b)          (B)            (b-B)     sqrt(diag(V_b-V_B))
             |    fixed        random       Difference          S.E.
-------------+----------------------------------------------------------------
        nplr |   .0003574   -.0018342        .0021915               .
        llpr |   .0062846    .0090169       -.0027323               .
         slr |   .0015313   -.0006985        .0022298               .
          la |   .0073896    .0031722        .0042174               .
         car |  -.0433321   -.0202257       -.0231065               .
       fsize |   .0000519     .000756       -.0007041               .
------------------------------------------------------------------------------
                           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(6) = (b-B)'[(V_b-V_B)^(-1)](b-B)
                          =        4.85
                Prob>chi2 =      0.5638
```

```
. xttest0

Breusch and Pagan Lagrangian multiplier test for random effects

        tq[id,t] = Xb + u[id] + e[id,t]

        Estimated results:
                         |       Var     sd = sqrt(Var)
                ---------+-----------------------------
                      tq |    .0000705       .0083965
                       e |    .0000232       .0048151
                       u |    .0000109       .0032941

        Test:   Var(u) = 0

        chi2(1)      =     2.35
        Prob > chi2  =   0.1252
```

Table 3.1. Population of Study

S/No.	BANK
1	Access Bank Plc
2	Diamond Bank Plc
3	Eco Bank Plc
4	FCMB Plc
5.	Fidelity Bank Plc
6	First Bank of Nigeria Plc
7	GT Bank Plc
8	IBTC Bank Plc
9	Skye Bank Plc
10	Sterling Bank Plc
11	UBA Bank Plc
12	Union Bank Plc
13	Zenith Bank Plc
14.	Unity Bank
15.	Keystone Bank Plc
16.	Stanbic Bank Plc

Table 3.1. List of Sampled Banks

S/No.	BANK
1	Access Bank Plc
2	Diamond Bank Plc
3	Eco Bank Plc
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7	GT Bank Plc
8	IBTC Bank Plc
9	Skye Bank Plc
10	Sterling Bank Plc
11	UBA Bank Plc
12	Union Bank Plc
13	Zenith Bank Plc
14.	Unity Bank

Sources: Compiled by the Author

Appendix II; Study data

year	id	tq	nplr	llpr	slr	la	Car	fsize
2007	1	0.002311	0.16553	0.10107	0.04	0.146787	0.063522	20
2008	1	0.00525	0.086377	0.094352	0.03	0.327893	0.062454	20.7546
2009	1	0.006949	0.164371	0.005949	0.033301	0.235122	0.033833	20.33
2010	1	0.008751	0.242649	0.040075	0.093102	0.553167	0.063213	20.4954
2011	1	0.008826	0.217899	0.010527	0.031554	0.534008	0.060501	21.2112
2012	1	0.00523	0.117903	0.01573	0.016524	0.353731	0.067631	21.2803
2013	1	0.005028	0.138066	0.017863	0.232196	0.34608	0.068834	21.3306
2014	1	0.005905	0.132236	0.00784	0.239427	0.428322	0.072538	19.5593
2015	1	0.007635	0.131827	0.010493	0.192465	0.527697	0.069115	20.218
2007	2	0.008114	0.141935	0.010415	0.184619	0.527077	0.064957	20.2901
2008	2	0.00392	0.153755	0.02155	0.312996	0.255612	0.065207	20.2005
2009	2	0.004646	0.168812	0.022195	0.251731	0.314995	0.067792	20.4954
2010	2	0.005729	0.186554	0.019996	0.100475	0.384306	0.067081	20.8872
2011	2	0.006112	0.163121	0.086719	0.084205	0.438725	0.071786	21.1412
2012	2	0.007141	0.17927	0.077703	0.046413	0.494671	0.069273	20.3955
2013	2	0.006437	0.117828	0.142756	0.078122	0.54356	0.084447	20.72
2014	2	0.006429	0.092184	0.029098	0.112211	0.496731	0.077263	20.881
2015	2	0.005714	0.091319	0.033804	0.150325	0.453742	0.079405	21.1405
2007	3	0.005298	0.108128	0.033335	0.15591	0.409231	0.077237	21.7334
2008	3	0.00619	0.122408	0.072249	0.206001	0.435558	0.070361	21.8834
2009	3	0.004419	0.211949	0.046262	0.106971	0.289062	0.065413	22.0181
2010	3	0.003986	0.137869	0.041778	0.090386	0.322068	0.080802	19.3869
2011	3	0.006054	0.256236	0.007743	0.057713	0.427946	0.070692	19.958
2012	3	0.006041	0.255629	0.018034	0.049172	0.424516	0.070272	20.0585
2013	3	0.004883	0.282753	0.022368	0.052957	0.331304	0.067843	20.1045
2014	3	0.004953	0.197959	0.016034	0.111494	0.378389	0.076388	20.2154
2015	3	0.00482	0.176577	0.013343	0.128277	0.37786	0.078388	20.3881
2007	4	0.005285	0.151177	0.019105	0.192222	0.394071	0.074567	20.6193
2008	4	0.006606	0.145836	0.007949	0.21746	0.456339	0.069083	19.2015
2009	4	0.007513	0.148991	0.009969	0.150466	0.469427	0.062485	20.0987
2010	4	0.001215	0.104206	0.004627	0.088355	0.088446	0.072778	19.8924
2011	4	0.003635	0.091754	0.009202	0.067854	0.23918	0.065797	19.9927
2012	4	0.006561	0.232815	0.013122	0.058349	0.300727	0.045837	20.4234
2013	4	0.008009	0.143175	0.018025	0.032351	0.496055	0.061938	20.6337
2014	4	0.007884	0.14776	0.018879	0.032759	0.496089	0.062924	20.8014
2015	4	0.006419	0.128867	0.030349	0.069656	0.437898	0.068224	20.6305
2007	5	0.006421	0.137737	0.00814	0.094325	0.483875	0.075354	21.1469
2008	5	0.00604	0.121875	0.01148	0.153509	0.457021	0.075667	21.4999
2009	5	0.007142	0.120408	0.011906	0.160755	0.501761	0.070253	21.5585

2010	5	0.006117	0.138928	0.06566	0.171829	0.436195	0.07131	21.7668
2011	5	0.003245	0.247391	0.027153	0.134901	0.213816	0.065899	21.8821
2012	5	0.004453	0.118336	0.018094	0.096481	0.317976	0.071401	22.0768
2013	5	0.007016	0.285946	0.016928	0.057649	0.399357	0.056921	20.0027
2014	5	0.00713	0.279511	0.085382	0.019435	0.514907	0.072216	20.4163
2015	5	0.00796	0.250228	0.096295	0.024893	0.606953	0.076251	20.7998
2007	6	0.005004	0.195077	0.085579	0.080456	0.537328	0.107384	20.8786
2008	6	0.005003	0.145304	0.035489	0.135878	0.393815	0.078721	21.1987
2009	6	0.006299	0.142527	0.017718	0.19806	0.446833	0.070934	21.2742
2010	6	0.008422	0.137139	0.017217	0.108002	0.528475	0.062752	21.4666
2011	6	0.008468	0.140049	0.025353	0.15603	0.511376	0.060388	19.5684
2012	6	0.00156	0.132156	0.027066	0.42444	0.109139	0.069963	19.6772
2013	6	0.00393	0.102747	0.006371	0.261837	0.23792	0.060545	19.6483
2014	6	0.008815	0.189082	0.011428	0.293275	0.432439	0.049056	19.7745
2015	6	0.008249	0.180257	0.059054	0.033652	0.528351	0.064049	20.1336
2007	7	0.007798	0.183008	0.017468	0.025049	0.515245	0.066076	20.3329
2008	7	0.006889	0.148138	0.02759	0.22848	0.438552	0.06366	20.4528
2009	7	0.006785	0.161716	0.000948	0.159583	0.449052	0.066183	19.9203
2010	7	0.007022	0.155632	0.002879	0.146181	0.476673	0.067884	20.4884
2011	7	0.007883	0.175444	0.005564	0.115737	0.597892	0.075843	20.2652
2012	7	0.008519	0.163813	0.009044	0.100861	0.543424	0.063786	20.3749
2013	7	0.002418	0.147272	0.031046	0.028658	0.174692	0.072238	20.6476
2014	7	0.004061	0.065573	0.023926	0.039784	0.2421	0.05962	20.7945
2015	7	0.004893	0.119834	0.016806	0.05091	0.309509	0.063261	20.8336
2007	8	0.007034	0.14297	0.110041	0.049239	0.500646	0.071175	18.7989
2008	8	0.008116	0.157648	0.020543	0.040987	0.546262	0.067311	19.2815
2009	8	0.007544	0.109493	0.054612	0.088175	0.532564	0.070598	19.1416
2010	8	0.006839	0.099545	0.024281	0.103989	0.503228	0.073577	19.3746
2011	8	0.006679	0.107837	0.021831	0.129904	0.492424	0.073733	20.0382
2012	8	0.006839	0.093065	0.029162	0.211555	0.458276	0.067011	20.1789
2013	8	0.009359	0.086863	0.039064	0.171042	0.587709	0.062794	20.3777
2014	8	0.007401	0.288941	0.010378	0.063793	0.362851	0.049029	20.8981
2015	8	0.007457	0.259301	0.02032	0.053361	0.363707	0.048771	21.2379
2007	9	0.010329	0.298858	0.051017	0.04293	0.364563	0.035294	21.0604
2008	9	0.006531	0.30979	0.043961	0.029917	0.425376	0.06513	21.0884
2009	9	0.008793	0.217792	0.003782	0.02613	0.426358	0.048491	21.2337
2010	9	0.009772	0.144106	0.011061	0.054263	0.546296	0.055907	21.3824
2011	9	0.0082	0.123136	0.021502	0.113669	0.473778	0.057778	21.5196
2012	9	0.008907	0.141736	0.006324	0.123982	0.633803	0.071157	20.3667
2013	9	0.007773	0.116514	0.007409	0.123251	0.459665	0.059136	20.8445
2014	9	0.0034	0.134	0.00732	0.543	0.323	0.0643	20.9374
2015	9	0.003881	0.23308	0.011212	0.631742	0.239401	0.077	20.724
2007	10	0.004748	0.217428	0.077098	0.381616	0.366617	0.077207	20.7695

2008	10	0.00378	0.143957	0.046823	0.462209	0.306231	0.081003	20.738
2009	10	0.005999	0.120666	0.16079	0.046723	0.527248	0.08789	20.726
2010	10	0.005498	0.112838	0.015762	0.028553	0.478629	0.08706	20.6958
2011	10	0.003955	0.088679	0.035113	0.19548	0.350035	0.08851	21.3043
2012	10	0.004914	0.087413	0.001305	0.182728	0.429962	0.087492	21.2299
2013	10	0.007114	0.098485	0.019956	0.140278	0.6423	0.090284	21.3625
2014	10	0.00708	0.102743	0.015747	0.174763	0.569091	0.08038	21.5677
2015	10	0.005732	0.119539	0.024065	0.145004	0.423698	0.073912	21.6805
2007	11	0.024476	0.13	0.02011	0.09	0.3234	0.073	21.9502
2008	11	0.018454	0.181097	0.12	0.050365	0.270551	0.072912	21.4999
2009	11	0.041647	0.12481	0.022397	0.046786	0.258023	0.067984	21.5585
2010	11	0.022191	0.16477	0.422226	0.062493	0.337932	0.068888	21.7668
2011	11	0.01664	0.10371	0.183634	0.021888	0.181267	0.057859	21.8821
2012	11	0.02666	0.189026	0.080844	0.22661	0.157549	0.047498	22.0768
2013	11	0.024515	0.188179	0.009392	0.193854	0.159655	0.050573	20.881
2014	11	0.028159	0.198795	0.052566	0.100648	0.228911	0.048138	21.1405
2015	11	0.02496	0.220217	0.015435	0.120853	0.309959	0.052283	21.7334
2007	12	0.023327	0.232995	0.027127	0.078568	0.350295	0.054508	21.8834
2008	12	0.021121	0.054895	0.024281	0.162995	0.203203	0.086251	22.0181
2009	12	0.029094	0.163954	0.011554	0.126981	0.313213	0.088547	20.33
2010	12	0.01955	0.130888	0.006064	0.081247	0.291877	0.090206	20.4954
2011	12	0.011221	0.137178	0.062562	0.050094	0.46756	0.091461	21.2112
2012	12	0.016149	0.124751	0.028964	0.047318	0.4372	0.088104	21.2803
2013	12	0.016165	0.085301	0.029289	0.245391	0.34226	0.081708	21.3306
2014	12	0.016953	0.092512	0.00692	0.343249	0.31672	0.082675	20.2901
2015	12	0.009843	0.088951	0.013948	0.27128	0.35485	0.081792	20.2005
2007	13	0.02812	0.096072	0.00297	0.294059	0.387993	0.078538	20.4954
2008	13	0.039633	0.120838	0.004874	0.23809	0.3766	0.075626	20.8872
2009	13	0.007736	0.234812	0.252477	0.04	0.056505	0.060812	21.1412
2010	13	0.016758	0.15765	0.128143	0.05	0.180039	0.071737	20.0585
2011	13	0.018381	0.055651	0.568982	0.03555	0.149762	0.092429	20.1045
2012	13	0.01711	0.027562	0.162062	0.030984	0.350202	0.085728	20.2154
2013	13	0.023411	0.168079	0.05962	0.066572	0.436363	0.08488	20.3881
2014	13	0.030451	0.168	0.023641	0.106203	0.451901	0.102313	20.0012
2015	13	0.004715	0.149472	0.007157	0.119808	0.54912	0.078446	21.2346
2007	14	0.017956	0.069897	0.110602	0.024059	0.483685	0.075136	20.8872
2008	14	0.010353	0.184522	0.079192	0.016487	0.530686	0.067027	21.1412
2009	14	0.02365	0.186264	0.110189	0.062229	0.555225	0.052206	20.3955
2010	14	0.00835	0.171011	0.149033	0.05	0.671116	0.071273	20.72
2011	14	0.028367	0.180007	0.117744	0.07	0.491761	0.089691	20.881
2012	14	0.031223	0.12876	1.08452	0.04532	0.312405	0.085118	21.1405
2013	14	0.024746	0.23295	0.143076	0.032292	0.152467	0.0478	21.7334
2014	14	0.033606	0.07837	0.50276	0.03264	0.212674	0.060077	21.8834

2015	14	0.017633	0.029169	0.034113	0.111381	0.31289	0.068588	22.0181