
CREDIT RISK MANAGEMENT AND FINANCIAL STABILITY IN QUOTED DEPOSIT MONEY BANKS IN NIGERIA

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ABSTRACT: *In the history of development of the Nigerian banking industry, it is evident that most of the failures experienced within the industry prior to the consolidation era were as a result of financial dampening that finally led to bad loans and some other unethical factors and financial stability has generated the ever-increasing attention and interest in academic and banking sector in Nigeria. This study examined the effect of credit risk management on financial stability of deposit money banks in Nigeria; specifically assessing the relationship between credit risk management and financial stability and establishing the level of credit risk measures to be put in place to ensure financial stability of deposit money banks in Nigeria. The study adopted ex-post facto research design. The target population comprised of 22 deposit money banks in Nigeria licensed by the Central Bank of Nigeria as at November 30th, 2018 from which 10 deposit money banks were purposively selected. Data were sourced from the audited and published financial statements of the selected deposit money banks. The data were validated by the statutory auditors. Descriptive and inferential statistics (multiple regression) were used to analyze the result. The findings revealed that asset quality represented by non-performing loan to gross loan ratio (NLPR), Total risk Asset to total asset ratio (TRAR), Loan Loss Provision to total loan ratio (LLPR) and Total Loan to total deposit ratio (TLDR), all had a significant effect on the variables of Financial Stability which are; Debt-to-Shareholders Fund $F(99)=11.17$, Adj. $R^2= 0.2419$, $p < 0.10$, Capital Adequacy Ratio $F(99) = 20.77$, Adj. $R^2= 0.0490$, $p < 0.10$, Fixed Deposit Cover $F(99) = 8.95$, Adj. $R^2= 0.165$, $p < 0.10$ and had joint insignificant effect on Liquidity Ratio $F(99)=1.31$, Adj. $R^2= 0.486$, $p > 0.10$ of deposit money banks in Nigeria. The study concluded that credit risk management influenced financial stability of quoted deposit money banks in Nigeria. The study recommended that operators of banks, should pay more attention to those variables of credit risk management in order to improve financial stability by managing credit risk that deposit money banks are facing to improve financial stability and to put in place proper credit management policy to mitigate credit risk and to also improve the knowledge of credit management policy in financial institutions.*

KEYWORDS: credit management policy, credit risk management, deposit money banks, financial stability, non-performing loans

INTRODUCTION

The financial services provided by quoted deposit money banks are essential to economic and financial development in an economy. The role of deposit money banks as financial intermediaries enhances rapid economic growth and financial stability in a nation by providing support especially to the real sector of the economy. Financial stability is vital for any nation so therefore the deposit money banks need to be properly managed. Stephen and Joseph (2015) posited that the volume of loans and advances disbursed in an economy significantly influences the productive activities in a nation. The main goal of deposit money banks is to redirect funds from the surplus sector to the deficit sector in a most profitable and sustainable manner. The extent to which deposit money banks extend loans and advances

otherwise called credit facilities to members of the public for productive activities accelerates the pace of a nation's economic growth, financial stability and its long-term sustainability.

Egide and Paul (2017) posited that efficient management of credit risk in deposit money banks is crucial for the survival and growth in the economic globalization waves. He also posited that the Swedish Banking Crisis in the 1990s; the credit losses for the Swedish banks were extremely high. The Swedish banks managed to get through the global mortgage crisis relatively well compared to banks in other countries due to help from the Swedish Government and "Riksbanken" (Central Bank of Sweden, 2009) still they were faced with large losses because of their operations in the Baltic states (FI, 2009). These crises show that the banking industry is exposed to high degrees of risks. He then concluded that efficient management of credit risk in deposit money banks is critical for the survival and growth in the economic globalization waves.

Ravi (2012) posited that credit risk management is best practice in banks and above 90% of the banks in country have adopted the best practice. Inadequate credit policies are still the main source of serious problem in the banking industry and hence effective credit risk management has gained an increased focus in recent years. The main role of an effective credit risk management policy must be to maximize a bank's risk adjusted rate of return by maintaining credit exposure within acceptable limits. Moreover, banks need to manage credit risk in the entire portfolio as well as the risk in individual credits transactions.

In the study of Kolapo, Ayeni and Oke (2012), deposit money banks in some economies of the world such as Thailand, Indonesia, Malaysia, Japan and Mexico experienced high non-performing loans and significant increase in credit risk during financial and banking crises, which resulted in the closing down of several banks in Indonesia and Thailand. Financial crisis has not only shaken big economies of the world but developing economies have also been severely affected. Many financial institutions in Africa have either collapsed and or are facing near collapse because of improperly functioned subprime mortgage lending to firms and people with bad and unreliable credit. Green (2008) posited that since the late 1950s when Ghana became the first Sub-Saharan African country to gain independence, which has been regarded across the world as a "torchbearer for African aspirations" also faced financial crisis because of real estate losses in early 2000. Sheng (1996) posited that deposit money banks in Ghana experienced several liquidations which affected Meridian BIAO Bank, Bank for Housing and Construction, National Savings and Credit Bank, Ghana Co-operative Bank and Bank for Credit and Commerce (Amidu, 2007; Appiah, 2011). These high-profile failures, in turn, raise questions on the credit risk management practices of banks in Ghana. Deposit money banks in developing economies like Nigeria also face problems in the management of credit risk as a result of banking crisis in the past. Banking crises in Nigeria have shown that not only do banks often take excessive risks but the risks differ across banks leading to collapse of some banks. Most banks quality of assets have deteriorated as a result of significant dip in equity market indices (BGL, 2010). The lessons learnt from financial crisis are to open awareness of the government and business people on the important role of implementing good risk management in Nigeria. Thus, as a way out of the tide, the Central Bank of Nigeria (CBN) on July 6, 2004 introduced measures to make the entire banking system a safe, sound and stable environment that could sustain public confidence and promote financial stability in Nigeria quoted deposit money

banks (Owojori, Akintoye, & Adidu, 2011).

Ikpefan and Ochei (2012) posited that several factors led to the failure of some banks between 1977 and earlier 2000. Some of the reasons advanced are; poor asset quality, under capitalization, inexperienced personnel, illiquidity, inconsistent regulatory policies and supervision. Sanusi (2012) opined that in Nigeria, the economy faltered and was hit by the second round effect of the crisis as the stock market collapsed by 70 per cent in 2008–2009 and many Nigerian banks sustained huge losses, particularly as result of their exposure to the capital market and downstream oil and gas sector. The real economic crisis, which began in 2008 is still producing its harmful impact on the financial stability of deposit money banks as a result of continuous deterioration in the credit leading to increase in bad debts and of the other types of deteriorated receivables. The increase in non-performing exposure impacts in turn on the cost of the risk which keeps growing due to the need of the banks to increase provisions and impairment losses on loans. Therefore, the CBN had to rescue eight of the banks through capital and liquidity injections, as well as removal of their top executives and consequent prosecution of those who committed some infractions. These actions became necessary to restore confidence and sanity in the banking system.

Owolabi and Ogunlalu (2013) provided an overview of various liquidations between 1994 and 2003 that within nine years, no fewer than 36 deposit money banks in Nigeria were liquidated due to insolvency. In 1995, four banks were closed down. 1998 was the saddest year in the history of bank failure in the banking industry as 26 banks were closed in that year. Also, three terminally ill banks were closed in 2000. In 2002 and 2003 not less than two banks collapsed. The failed deposit money banks had two things in common – small size and unethical practices. As a result, banks were consolidated through mergers and acquisitions, raising the capital base from N2 billion to a minimum of N25 billion, which reduced the number of banks from 89 to 25 in 2005, and later to 24 (Sanusi, 2012).

Deposit money banks reforms which began in 2004 with the consolidation programme were necessitated by the need to strengthen the banks. The policy thrust at inception, was to grow the banks and position them to play pivotal roles in driving development across the sectors of the economy. Before Asset Management Corporation of Nigeria (AMCON) was created, the country witnessed a consolidation and clean-up of the banks under former Central Bank of Nigeria CBN governors: Charles Soludo and Sanusi Lamido, because most of the banks were substantially under- capitalized, arising mainly from non-performing loans (Olawale, Tomola, James, & Felix, 2015).

It was opined by Sanusi, 2012 that, some board members were found securing credits without adequate collateral which made it impossible for them to enshrine sound corporate governance practices in the banks and to also challenge the executives. It was discovered from the finding of the CBN audit report that, most of the loans given out were unsecured and no adequate provision for bad debts was made. Consequently, eight bank Chief Executive Officers and their respective board of directors were fired from their jobs. The affected banks were Afribank Plc, Platinum Habib Bank Plc, Equatorial Trust Bank Plc, Finland Plc, Intercontinental Bank Plc, Oceanic Bank Plc, Spring Bank Plc and Union Bank Plc (Chiejine, 2010). Consequently, corporate governance can be seen as one of the factors that contributed to the near collapse of the banking sector in Nigeria (Sanusi 2012). Following the conclusion of the consolidation programme in 2005, a Code

of Corporate Governance for Banks in Nigeria was issued to the banking industry in order to strengthen governance practices (Sanusi 2012).

CBN (2014) defined the term corporate governance as the rules, processes, or laws by which institutions are operated, regulated and governed. It is developed with the primary purpose of promoting a transparent and efficient banking system that will engender the rule of law and encourage division of responsibilities in a professional and objective manner. Effective corporate governance practices provide a structure that works for the benefit of stakeholders by ensuring that the enterprise adheres to accepted ethical standards and best practices as well as formal laws. CBN further stated that a country's economy depends on the safety and soundness of its financial institutions. Thus, the effectiveness with which the Boards of financial institutions discharge their responsibilities determines the country's competitive position. They must be free to drive their institutions forward but exercise that freedom within a framework of transparency and effective accountability. This is the essence of any system of good corporate governance. Corporate governance has received increased attention because of high-profile scandals involving abuse of corporate power and, in some cases, alleged criminal activity by corporate officers. Following the conclusion of the consolidation programme in 2005, a Code of Corporate Governance for Banks in Nigeria was issued to the banking industry by CBN. The Code which became effective in April 2006 was designed to enhance corporate governance practices within the banking industry in view of the fact that governance mechanisms in banks was notably weak and Board members of financial institutions were unaware of their statutory and fiduciary responsibilities, and merely endorsed all proposals of executive management regardless of their implications to the financial condition and going concern status of such institutions.

Also, as part of the clean-up exercises, CBN (2010) issued new Prudential Guidelines to banks to address various aspects of banks' operations, such as risk management, corporate governance, know your customer, anti-money laundering, counter financing of terrorism, loan loss provisioning, peculiarities of different loan types and financing different sectors of the economy, among others. The guidelines became necessary to correct the extremely fragile financial system that was tipped into crisis by the global financial meltdown, which manifested in macro-economic instability, major failures in corporate governance, lack of investor and consumer sophistication, inadequate disclosure and transparency, uneven supervision and enforcement and critical gaps in prudential guidelines. The guidelines prohibit that the total outstanding exposure by a bank to any single person or a group of related borrowers is fixed at a maximum of 20 per cent of the bank's shareholders' fund unimpaired by losses while aggregate large exposures in any bank should not exceed eight times the Shareholders' fund unimpaired by losses (CBN, 2010).

Bank and Other Financial Institution (2009) stipulated the duties of banks and regulatory compliance to prevent crystallization of credit risks that can lead to economic crisis. Mandatory compliance as prescribed by BOFIA in managing credit risks are; banks shall maintain, at all times, capital funds unimpaired by losses, in such ratio to all or any assets or to all or any liabilities or to both such assets and liabilities of the bank and all its offices in and outside Nigeria as may be specified by the Bank, No bank shall pay dividend on its shares until adequate provisions have been made to the satisfaction of the Bank for actual and contingent losses on risk assets, liabilities, off balance sheet commitments and such unearned incomes as are derivable therefrom, No manager or any other officer of a bank shall in any manner whatsoever, whether directly or

indirectly have personal interest in any advance, loan or credit facility, and if he has any such personal interest, he shall declare the nature of his interest to the bank, every bank shall maintain with the Bank cash reserves, and special deposits and hold specified liquid assets or stabilization securities, as the case may be, not less in amount than as may, from time to time, be prescribed by the Bank by virtue of section 39 of the Central Bank of Nigeria Decree 1991, Banks will not during the period of any deficiency, grant or permit increases in advances, loans or credit facilities to any person without the prior approval in writing to the Bank (BOFIA, 2009).

Asset Management Corporation of Nigeria (AMCON) was then established in 2010 as a monetary policy response to solve the aching problem of non-performing loans troubling the deposit money banks. The Asset Management Corporation of Nigeria (AMCON) was established by the Federal Government in July 2010 to buy off trillions of toxic assets to stave off a major collapse of the Nigeria banks. Having succeeded in buying off about 95% of the non-performing loans, the corporation has achieved the primary purpose for which its act was made, with a caveat not to buy new non-performing loans. However, this economic bail out provides banks with cash and capital, the banks need to strengthen themselves for future success and a way out is an entrenchment of sound risk management framework (Owojori, Akintoye & Adidu., 2011).

In 2016, Nigeria faces another economic crisis in the form of falling oil prices, poorly performing financial market and worrisome exchange rate volatility, issues of credit defaults and non-performing loans have once again come to the forefront of economic discourse. CBN (2014) posited that the systemic impact of deposit money banks greatly depends on its degree of interconnectedness with other sectors of the economy can be measured by volume of credit facilities availed to the public which ensure economic growth and financial stability of a nation. Credit remains the main source of revenue for any deposit money banks around the world. However, the probability of default borrowers' loan commitments has been an increasing concern for deposit money banks particularly in the area of unsecured loans and advances. The risk emanating from credit default is categorized as credit risk and weaken the intermediation efficiency of banking industry (CBN, 2016). The risk poses a significant exposure not only to deposit money banks (lenders) but also to the entire economy, which is evident in 2008 financial crises. This is because of the fact that banking is a vital industry of any economy and emphasizes the importance of managing the credit risk within the banking sector.

Banks grant loans to the customers with an expectation of receiving the capital together with an interest. A credit facility is considered to be performing if payment of both capital and interest are paid accordingly with agreed repayment terms. The Non-Performing Loans represents credits which the banks perceive as possible loss of funds due to customers failure to repay the monthly installments (CBN prudential guidelines, 2014). They are further classified into substandard and doubtful bank credit category hinders bank from achieving their set targets. Proper risk management is essential for the survival of a bank, and it enables management to allocate resources to risk management departments based on a tradeoff between risk and return potential (Ogboi & Unuafe, 2013).

CBN (2016) postulated in the Financial Stability report that deposit money banks in Nigeria experienced deterioration in assets quality at end-December 2016. "The ratio of non-performing loans (NPLs) to gross loans deteriorated in the second half of 2016 by 2.3 and 8.7 percentage

points to 14.0 per cent at end-December 2016 compared with the levels at end-June 2016 and end-December 2015, respectively. The deterioration in asset quality was largely attributed to the rising inflationary trend, dip in global oil prices, negative Gross Domestic Product (GDP) growth, and the depreciation of the naira". As a result of the deterioration in assets quality, thus, the possibilities for default facilities are high leading to credit risk.

To monitor the credit risk more closely, deposit money banks are carrying out rigorous credit analysis of counterparties and various products. Banks are also upgrading their forecasting abilities to calculate credit risk in stressed market conditions. Additionally, regulators have been encouraging banks to monitor their credit risk very closely. The Central Bank of Nigeria has imposed a number of regulations to ensure financial stability in Nigeria quoted deposit money banks in the area of maintaining moderate credit risk before dividend can be paid to shareholders. Despite all these controls put in place, deposit money banks in Nigeria still experienced deterioration in assets quality at end-December 2016 (CBN, 2016).

The Basel Committee on Banking Supervision was formed in 1974 by G10 central bankers under the auspices of the Bank for International Settlements (BIS) following the collapse of Bankhaus Herstatt in Germany and Franklin National Bank in the United States in 1974 (Engelen, 2005). Initially, the Basel Accord was developed for internationally participating banks. However, it can equally be applied to banks with varying levels of complexity (BCBS, 2001).

The Basel Committee on Banking Supervision (2001) described credit risk as the possibility of losing the outstanding loan partially or totally, due to credit events. "The risk of loss resulting from the failure of an obligor to perform on an obligation, resulting in an economic loss to the bank". Among other risks faced by banks, credit risk plays an important role on banks' financial stability since a large chunk of banks' revenue accrues from loans from which interest is derived. However, interest rate risk is directly linked to credit risk implying that high or increase in interest rate increases the chances of loan default. Credit risk and interest rate risk are intrinsically related to each other and not separable (Drehman & Stringa, 2008). Increasing amount of non-performing loans in the credit portfolio is inimical to banks in achieving their objectives. Non-performing loan is loan amount that were not serviced for at least three months (Ahmad & Ariff, 2007).

As a result of increasing spate of non-performing loans, the Basel II Accord emphasized on credit risk management practices. Compliance with the Basel II Accord means a sound approach to tackling credit risk has been taken and this ultimately improves banks' financial stability. The Nigerian banking industry has been strained by the deteriorating quality of its credit assets which hindered banks to extend more credit to the domestic economy, thereby adversely affecting economic performance. 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 non-performing loans that bedeviled Nigerian deposit money banks. The study aims to investigate the effect of Total risk assets to total assets ratio, asset quality represented by non-performing loan to gross loan ratio, Loan loss provision to total loan ratio and Total loans to total deposits ratio and the financial stability of quoted deposit money banks in Nigeria.

Statement of the Problem

Over the last ten years the deposit money banks in Nigeria have experienced problems as far as credit risk is concerned, this resulted in closure of several Banks including Intercontinental Bank, Oceanic Bank, Equatorial Trust Bank, Bond Bank and recently Skye Bank. CBN (2018) pointed out that loan defaults and toxic lending practices led to the failure of the said banks. To survive in a dynamic banking environment, Credit Risk Management is indispensable if financial stability has to be achieved in deposit money banks. The failure of deposit money banks to manage credit risks embedded in their activities had led to huge non-performing loans leading to traction of banks in Nigeria. According to the Financial Stability report of the Central Bank of Nigeria (CBN), banks recorded N1.02 trillion bad loans in the first half of 2016. Non-performing loans (bad loans) in the period grew by 158% from N649.63 billion at end-December 2015 to N1.68 billion at end-June 2016. Credit risk is expected to trend higher into the second half of 2016 owing to increased loan impairments resulting from depreciation of the Naira and inability of obligors to service foreign loans.

Sanusi (2012) opined that in Nigeria, the economy faltered and was hit by the second round effect of the crisis as the stock market collapsed by 70 per cent in 2008–2009 and many Nigerian banks sustained huge losses, particularly as result of their credit exposure to the capital market and downstream oil and gas sector. Therefore, the CBN had to rescue 8 of the banks through capital and liquidity injections, as well as removal of their top executives and consequent prosecution of those who committed some infractions. These actions became necessary to restore confidence and sanity in the banking system. As a result, banks were consolidated through mergers and acquisitions, raising the capital base from N2 billion to a minimum of N25 billion, which reduced the number of banks from 89 to 25 in 2005, and later to 24 (Sanusi, 2012) Adeusi, Akeke and Obawale (2014) posited that credit failure in banks is not new or a rare occurrence, they affect their liquidity position as well as cash flows and profits and maintained that credit risk is the biggest threat to any banks financial stability and the principal cause of bank failures.

Owojori, Akintoye and Adidu (2011) posited that available statistics from liquidated banks clearly showed that inability to collect loans and advances extended to customers and creditors or companies related to directors or managers was a major contributor to the distress of liquidated banks in Nigeria. With the collapse of deposit money banks in Nigeria, one would wonder just what the best strategy is or strategies for a deposit money banks to adopt in order to completely eliminate credit risk or loan defaults. Credit risk management strategies is an issue of concern in deposit money banks today and there is need to come up with improved strategies to deliver better results for future performance. Effective credit risk management strategies minimize the credit risk, therefore the level of loan losses. Financial stability is a priority for all managers in the banking sector. For deposit money banks managers, strategic management of credit risk is equally very important. Managers need to reduce the risk of loan default because the banks financial stability is weakened by the loss of principal and interest.

A number of research studies in Nigeria have attempted to address the impact of credit risk management and financial performance of banks in Nigeria but these studied have not addressed comprehensively the impact of credit risk management on the financial stability in Nigeria quoted deposit money banks.

Olawale, Tomola, James and Femi (2015), investigated the effect of credit risk management on bank performance in Nigeria and used return on assets to measured performance. Also, Idowu and Awoyemi, (2014) carried out a study on the impact of credit risk management on the performance of commercial banks in Nigeria and used return on Equity and Return on Asset as performance indicators. From the foregoing, existing research works so far used one or two variables as indicators to measure the effect of credit risk management on the performance of banks. Also, the studies focused mainly on banks` performance but the current study will expand the scope of the previous studies to capture financial stability. This study therefore will introduce more variables to capture the concept of financial stability, that is, Capital Adequacy ratio, Liquidity coverage ratio, Fixed Dividend Cover, Total Debt to Shareholders fund ratio.

Therefore, it is on the basis of this gap that the present study will wish to establish the effect of Credit Risk Management and Financial Stability in quoted deposit money banks in Nigeria.

The study investigated the effect of Total risk assets to total assets ratio (TRAR), asset quality represented by non-performing loan to gross loan ratio (NPLR), Loan loss provision to total loan ratio (LLPR) and Total loans to total deposits ratio (TLDR) and the financial stability of quoted money banks in Nigeria.

Objectives of the Study

The following objectives were set for the research:

1. To evaluate the effect of credit risk management on the debt-to-shareholders fund of Nigeria quoted deposit money banks.
2. To assess the effect of credit risk management on the capital adequacy ratio of quoted deposit money banks in Nigeria.
3. To determine the effect of credit risk management on the fixed dividend cover of Nigeria quoted deposit money banks and
4. To investigate the impact of inadequate liquidity management on dividend payment with a view to ensuring adequate liquidity management.

Research Hypotheses

The following hypotheses were tested for the research work.

H₀₁: Credit risk management does not have significant effect on debt-to-shareholders fund ratio of quoted deposit money banks in Nigeria

H₀₂: Credit risk management does not have significant effect on capital adequacy ratio of quoted deposit money banks in Nigeria

H₀₃: Credit risk management has no significant impact on the fixed dividend cover of Nigeria quoted deposit money banks

H₀₄: Credit risk management has no significant impact on the liquidity of quoted deposit money banks in Nigeria.

LITERATURE REVIEW

Conceptual Review

Financial Stability

Financial stability is defined in terms of its ability to facilitate and enhance economic processes, manage risks, and absorb shocks (Job, Fikirini & Ronald, 2018). Financial stability matters to

Central Banks because the goals of monetary policy and financial stability are interconnected. Central banks care about financial stability. Financial institutions are able to provide valuable credit risk asset, risk management, and liquidity services to businesses and households because they are designed to take risks and are highly leveraged compared with non-financial businesses. The risk-taking and leverage raise the possibility of systemic problems that could threaten the functioning of the financial system, hurt real economic activity, and impose significant economic costs.

Central Bank of Nigeria intervene recently in 2018 to maintain the financial stability by removing Skye Bank's chairman, MD and other management staff; over poor liquidity and high non-performing loans to prevent financial instability in deposit money banks. There are various widely known measures of financial stability such as Capital Adequacy ratio, Liquidity coverage ratio, Fixed Dividend Cover, Total Debt to Shareholders fund ratio, Fixed Interest Cover, Long-term Debt to Shareholders fund ratio, gearing ratio and proprietary ratio. There are divergent views among scholars on the superiority of one indicator over the other as a good measure of financial stability in banks. Similarly, anyone or a combination of the indicators can be used to measure financial stability in banks depending on the objective of the user or analyst (Fan & Yijun, 2014). Also, one of the six factors of CAMELS used by CBN to measure the financial stability of deposit money banks are Capital, Liquidity and earnings. Consequently, Capital, Liquidity and earnings are represented in CBN financial stability report as Capital Adequacy ratio, Liquidity coverage ratio, Fixed Dividend Cover which yield a measure of the safety and soundness of a bank (CBN, 2018)

Credit Risk Management

Credit risk management in financial institutions has become crucial for the survival and growth of these institutions. It is a structured approach of uncertainty management through risk assessment, development of strategies to manage it and mitigation of risk using managerial resources (Afriyie & Akotey, 2011).

Deposit money banks have faced difficulties over the years for a multitude of reasons, the major cause of serious banking problems continues to be directly related to lax credit standards for borrowers and counterparties, poor portfolio risk management, or a lack of attention to changes in economic or other circumstances that can lead to a deterioration in the credit standing of a bank's counterparties (BCBS, 1999).

CBN (2018) defined credit risk as the risk arising from the type and nature of credit activities undertaken by the institution. Credit risk arises from a counterparty's inability or unwillingness to fully meet its on and/or off-balance sheet contractual obligations. Exposure to this risk results from financial transactions with a counterparty including issuer, debtor, borrower, broker, policyholder or guarantor.

Saeed and Zahid (2016) postulated that Banks like other financial institutions face a number of risks and hazards including credit risks, liquidity risks, operational risks, exchange rate risks, interest rate risks, political risks, and all other internal and external risks. However, credit risk is considered as the most common and dangerous risk especially for the banks that can put them into deep trouble and even, they may face bankruptcy.

Risk is the possibility that the actual return of an investment will differ from the expected return. Risk can also be defined as the realistic possibility of losing the principal invested and the amount of interests accrued on it either partially or completely or risk of not achieving your set objective (Saeed & Zahid, 2016). Credit risk is most simply defined as the potential that a bank borrower or counterparty will fail to meet its obligations in accordance with agreed terms. The goal of credit risk management is to maximize a bank's risk-adjusted rate of return by maintaining credit risk exposure within acceptable parameters. Credit risk is the risk that a borrower defaults and does not honor its obligation to service debt. It occurs when the borrower is unable to pay his debts as agreed or fails to make timely payment on his debt servicing. Credit risk is one of significant risks of banks by the nature of their activities. Through effective management of credit risk exposure, banks not only support the viability and profitability of their own business but also contribute to systemic stability and to an efficient allocation of capital in the economy (Iwedi & Onuegbu, 2014). Banks need to manage the credit risk inherent in the entire portfolio as well as the risk in individual credits or transactions. Banks should also consider the relationships between credit risk and other risks. 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.

Deposit Money Bank

Deposit Money Banks are licensed by the regulatory authority to mobilize deposits from the surplus unit and channel the funds through loans to the deficit unit and performs other financial services activities. The financial services provided by quoted deposit money banks are essential to economic and financial development in an economy. The role of deposit money banks as financial intermediaries enhances rapid economic growth and financial stability in a nation (CBN, 2018).

Ali , Jatau and Ashami ,(2016) posited that the functions of deposit money banks are numerous, all aimed at satisfying the financial needs of the various sectors of the economy such as agriculture, industry, trade, communication, oil and gas accordingly they play very momentous role in process of economic growth. The prompt and sustained output growth of the domestic economy of Nigeria since the political independence in 1960 has been of principal importance to successive governments in the country.

Thus, various governments have executed several national development plans and programmes designed at enhancing productivity, as well as, diversifying the domestic economic base. However, the infrastructural and capital resources necessary for the realization of these objectives have however been limited. This has obliged the intervention of deposit money banks credit in the economy via the provision of the required huge capital outlay in form of risk assets needed for large-scale production in industries and for the provision of other credit facilities for economic growth. The impact of Deposit money banks' credit on the various economic agents which is regarded as bank loans and advances aid in financial intermediation between deficit unit and surplus units enhances productivity, impacting positively on economic growth. The banking sector is generally considered as a key channel for financial intermediation in every economy. Ali, Jatau and Ashami, (2016) posits that the banking sector help in the provision of credit by organizing surplus fund from depositors who have no instant needs of such money and consequently channel it in form of credit to investors who have wonderful ideas on how to create

additional wealth in the economy but lack the required capital to implement the ideas.

This further revealed that the role of deposit money banks credit is recognized as suitable source to the economic agents to enable them meet both new investment opportunities and operating expenses. To strengthen the banking sector to meet up with this herculean task of providing credit in the economy, various banking reforms have been established by the monetary authority in Nigeria in enhancing credit accessibility. The overall objectives of these reforms have been to guarantee financial stability so as to influence the growth of the economy and also enhance bank to play their role of financial intermediation in provision and accessibility of credit in the Nigerian economy. These various reforms no doubt have led to the improvement of banking services to the economic units.

Ali, Jatau and Ashami, (2016) opined that despite series of efforts through bank reforms and other policies aimed at strengthening the bank's ability to ensure efficient services delivery and funding the real sectors so that it will enable the Nigerian economy to become more vibrant and very dynamic. The problem of inefficient allocation of funds to the real sector, lack of long-dated funding, deterioration in domestic credit by the banking sector to the private sector, high concentration of loans to few sectors and mismatch of liquidity in the Nigeria economy still lingers.

Deposit money banks play effective roles in the economic growth and development of both emerging and developed economies of the world. This role they perform excellently by helping to mobilize idle savings of the Surplus Unit for onward lending to the Deficit Units, thus helping in the capital formation of a nation. It is in realization of the importance of bank's role in financial intermediation that successive governments in Nigeria have been allocating deliberate roles to them in various National Development Plans

THEORETICAL REVIEW

Several theories have been put forward which seek to provide insight into the underlying relationship between credit risk management and financial stability of deposit money banks. The theories are: the commercial loan theory, the anticipated income theory, the credit risk theory and loan pricing theory. These theories are explained below

Commercial Loan Theory

The oldest theory of banking is the commercial loan theory, also called the real bills doctrine was propounded by Adam Smith in England during the 18th century. The commercial loan theory holds that banks should lend only on short term, self-liquidating productive loans to business firms. Self-liquidating loans are those which are meant to finance the production, and movement of goods through the successive stages of production, storage, transportation, and distribution. When such goods are ultimately sold, the loans are considered to liquidate themselves automatically. For instance, a loan given by the bank to a businessman to finance inventories would be repaid out of the receipts from the sale of those very inventories, and the loan would be automatically self-liquidated. The theory states that when commercial banks make only short term self-liquidating productive loans, the central bank, in turn, should only lend to the banks on the security of such short-term loans.

Kargi, (2011) posited that the strong tie to this conception is rather orthodox if consideration is given to the fact that at the time of the supremacy of the theory, there were little or no secondary reserve assets, which could have served as a liquidity buffer for the bank. Moreso, this theory fails to consider the credit needs of Nigeria's developing economy. It has not encouraged banks to fund the purchases of plants, equipment, land, and home-ownership. For a theory to maintain that all loans should be liquidated in the normal course of business shows its failure to recognize the relative stability of deposit money banks.

According to Hosna and Manzura, (2009), the commercial loan theory is geared to influence persuasively both the bank lending and the general economic activities. Strict adoption of this theory will reveal that it is expected to serve as a monetary supply to changes in aggregate economic activity. The popularity of this doctrine among Deposit-Money Banks (DMBs) in Nigeria is evident. Nigerian bankers believe that since their resources were repayable at short notice, such depositors' monies should be employed accordingly in short-term loans. Whereas, demand deposits are on demand, all depositors are not likely to demand payment at the same time. Thus, stability of deposits enables a bank to extend funds for a reasonable long period without danger of illiquidity. The theory is relevant to the study in relation to financial stability as the principle would ensure the proper degree of liquidity for each bank and the proper money, supply for the whole economy

The Anticipated Income

Theory Prochnow formulated a new loan theory in 1949 which he called "the Anticipated Income Theory". The theory assumes that banks should make loans on the basis of the anticipated income of the borrower and not on his present value. Afriyie and Akotey, (2011), critic the theory that regardless of the nature and character of the borrower's business, the bank planned liquidation/repayment of term loans from anticipated earnings of the borrower. Liquidation or repayment is not by sales of assets of the borrower as in commercial or traditional theory but by anticipating income of the borrower which is not certain. Kolapo, Ayeni, and Oke, (2012), one striking thing with this theory is its "future-oriented approach" to bank loans and advances. According to Sunny (1997), the theory emphasizes the earning potential and the credit worthiness of a borrower as the ultimate guarantee for ensuring adequate liquidity. The theory is relevant to the study in relation to liquidity availability in deposit money banks to ensure financial stability for smooth banking activities.

The Credit Risk Theory

Merton 1974 introduced the credit risk theory otherwise called the structural theory which is said the default event derives from a firm's asset evolution modeled by a diffusion process with constant parameters. Credit risk according to Anderson and Salas, and Saurina, (2002) refers to the risk that a borrower will default on any type of debt by failing to make required payments. The risk is primarily that of the lender and includes lost principal and interest, disrupt loss may be complete or partial and can arise in a number of circumstances, such as an insolvent bank unable to return funds to a depositor. To reduce the lenders risk, the lender may perform a credit check on the prospective borrower, may require the borrower to take appropriate insurance, such as mortgage insurance or seek security or guarantees of third parties. In general, the higher the risk, the higher will be the interest rate that the debtors will be asked to pay on the debt (Owojori,

Akintoye & Adidu, 2011).

Compensation Theory of Profit

This theory was formulated by Alfred Marshall in 1978; it holds that the profit is the supply price of entrepreneurship or business power where business is the supply of capitals plus supply of the ability to maintain business plus supply of organizational ability for production. This theory treats profit as a cost element and that profit is the price for the function of capital hence it is a functional theory of profit. This can serve as compensation to investors and motivate investment; it is in line with the classical theory of investment such as the accelerator theory or the marginal efficiency of capital and marginal efficiency of investment.

Theoretical Framework

This research work adopted the credit risk management theory and compensation theory of profit. The choice of the theories are that credit risk management theory addressed risks embedded in loan disbursement to prevent borrowers from defaulting on debt and compensation theories of profit addressed earnings capacity in ensuring the financial soundness/stability of deposit money banks.

Empirical Review

To establish the relationship between credit risk management and financial stability in quoted deposit money banks in Nigeria, several studies carried out by researchers, scholars and academicians were reviewed. These studies were carried out at separate times and concluded differently. supply of the ability to maintain business plus supply of organizational ability for production. This theory treats profit as a cost element and that profit is the price for the function of capital hence it is a functional theory of profit. This can serve as compensation to investors and motivate investment; it is in line with the classical theory of investment such as the accelerator theory or the marginal efficiency of capital and marginal efficiency of investment.

Okere, Isiaka and Ogunlowore, (2018) examined the relationship between risk management and financial performance of deposit money banks in Nigeria. The study used secondary data in examining the association between credit risk management variables and financial performance of 10 deposit money banks quoted on the Nigerian Stock market. The result of the estimated coefficient of the variables non-performing loans, capital adequacy ratio, leverage ratio shows significant relationship with performance of deposit money banks, but loan deposit ratio has no significant effect on firm's financial performance in Nigeria. The result of the study indicated a significant direct relationship between credit risk management and financial performance of deposit money banks in Nigeria. Except for leverage (LEV) all other variables suggest a positive relationship with the performance of the banks.

Amahalu, Obi, Chidoziem and Abiahu, (2017) investigated the relationship between loan management and financial performance with a focus of deposit money banks evaluated on the floor of Nigerian stock exchange from 2010 – 2015. The study made use of secondary data obtained from fact books, annual report and accounts of the listed deposit money banks in Nigeria. The relevant data obtained were subjected to statistical analysis using STATA 13, Pearson coefficient of correlation and multiple regression analysis which revealed that there is a positive and statistically significant relationship between loan management (Proxied by Non-Performing Loan

& Deposit) and financial performance (ROA, Earnings Per Share (EPS), Dividend Per Share (DPS) of quoted deposit money bank in Nigeria).

Kolapo, Ayeni and Oke, (2012) carried out an empirical investigation into the quantitative effect of credit risk management on the performance of commercial banks in Nigeria over the period from 2000 to 2010. In their panel model approach, profitability is proxied by return on assets and credit risk by; the ratio of non-performing loan to total loans and advances, ratio of total loans and advances to total deposit and the ratio of loan loss provision to classified loans. Their findings show that the effect of credit risk management is similar across banks in Nigeria and that an increase in non-performing loan and loan loss provision reduce profitability. The results further show that an increase in total loans and advances increase profitability.

Kolapo, Ayeni and Oke (2012) carried out an empirical investigation 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.

Ndifon and Ubana, (2014) assessed the impact of capital adequacy on Deposit Money Banks' profitability in Nigeria, taking a case study of five selected banks. The empirical analysis covered the period from 1981 to 2011. The data for the study were obtained from secondary sources including the annual reports and financial statements of the selected banks and Central Bank of Nigeria (CBN) statistical bulletin. The study adopted the Engle and Granger two steps procedure in co-integration. The study revealed that capital adequacy plays a significant role in explaining banks Returns on Assets (ROA) which is a measure of banks' profitability. The positive and significant relationship between capital adequacy and banks' profitability suggest that banks with more equity capital are perceived to have more safety and such advantage can be translated into higher profitability. The higher the capital ratio, the more profitable a bank will be.

Idowu and Awoyemi, (2014) carried out a study on the impact 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 impact on the profitability of commercial banks' in Nigeria.

Adeusi, Akeke, Obawale and Oladunjoye, (2014) investigated the association of credit risk management practices and bank financial performance in Nigeria. Secondary data sourced was

based on a 4-year progressive annual reports and financial statements of 10 banks and a panel data estimation technique adopted. The result implies an inverse relationship between financial performance of banks and doubtful loans, and capital asset ratio was found to be positive and significant. Similarly, it suggests the higher the managed funds by banks the higher the performance. The study concludes a meaningful relationship between banks performance and credit risk management. Hence, the need for banks to practice prudent credit risks management to protect the interests of investors.

Saeed and Zahid, (2016) analyzed the impact of credit risk management on profitability of five big UK commercial banks. For measuring profitability, two dependent variables ROA and ROE were considered whereas two variables for credit risks management were: net charge off (or impairments), and nonperforming loans. Multiple statistical analyses were conducted on bank data from 2007 to 2015 to cover the period of financial crisis. It was found that credit risk indicators had a positive association with profitability of the banks.

Ali, (2015) examined the effect of credit risk management on financial performance of the Jordanian commercial banks during the period (2005-2013), thirteen commercial banks have been chosen to express on the whole Jordanian commercial banks. Two mathematical models have been designed to measure this relationship, the research revealed that the credit risk management effects on financial performance of the Jordanian commercial banks as measured by ROA and ROE. The research further concludes that the credit risk management indicators considered in this research have a significant effect on financial performance of the Jordanian commercial banks.

Egide and Paul (2017) examined the effects of credit risk management on the performance of commercial banks in Rwanda. The study established that credit risk management monitoring can be used to make sure that credit risk management practices are in line and proper risk monitoring also helps bank management to discover mistake at early stage thus the study concluded that credit risk management has a positive influence on the financial performance of Commercial Banks in Rwanda. This indicates that poor asset quality or high non-performing loans to total asset related to poor bank performance.

Olawale, Tomola, James and Felix, (2015) investigated the effect of credit risk management on bank performance in Nigeria. They adopted dynamic panel model to analyze data on six Deposit Money Banks from 2000 to 2013. The results provide evidence for a weak profit persistence in the Nigerian banks. It established a significantly negative relationship between credit risk and bank profitability. This implies that bank increased exposure to credit risk management reduces profits. They also found that total loan is positively and significantly related to bank profitability. Sujeewa, (2015) investigated the impact of Credit Risk Management on the Performance of Commercial Banks in Sri Lanka. The panel data of a five year period from 2009 to 2013 from the selected banks were used to examine the relationship between credit risk management and performances. The Return on Assets (ROA) was used as performance indicator and Loan provision to Total (LP/TL), Loan Provision to Non-Performing Loans (LP/NPL), Loan Provision to Total Assets (LP/TA) and Non-Performing Loans/ Total Loans (NPL/TL) were used as indicators of credit risk. Further, a regression model was used to establish the relationship between amounts of loan as well as non-performing loans and profitability during the period of study by using E-views software. The result shows that non-performing loans and provisions have an

adverse impact on the profitability.

Kargi, (2011) evaluated the impact of credit risk management on the profitability of Nigerian banks. Financial ratios as measures of bank performance and credit risk management 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 impact 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 significant risk of illiquidity and distress. Also, Dietrich, Hess and Wanzenried (2014) in their study approximating credit risk by the loan loss provisions over total loans ratio, suggest a negative relationship between credit risk management and banks' profitability.

EL-Maude, Abdul-Rahman and Ibrahim, (2017) examined the relationship between bank specific and macroeconomic determinant of non-performing loans in Nigerian deposit money banks over the period of 5 years (2010 to 2014). A sample of 10 banks out of 15 quoted by the Nigerian Stock Exchange (NSE) was considered on a cross sectional basis. The study adopted non-survey research design and secondary data was used, generated from the bank's annual reports and accounts, Central Bank of Nigeria (CBN) and Nigerian Stock Exchange fact book respectively. The data were analyzed using descriptive statistics, correlation coefficient and multiple regressions. As thus, Stata (version 12) was used as a statistical tool for data analysis. The findings reveal positive significant relationship between Non-Performing loans and Loan to deposit and Bank size; whereas relationship between capital adequacy ratio and Inflation reveals a positive insignificant relationship; whereas Return on asset had negative insignificant relationship with the rate of non-performing loans.

Daniel, (2017) investigated the relationship between liquidity management and the performance of deposit money banks in Nigeria from 1986 to 2011 using Multiple Linear Regression Model. The results of the investigation revealed that there is a significant relationship between liquidity management and the performance of deposit money banks in Nigeria. The study shows that profitability in terms of return on equity is maximized at optimum liquidity level where cost is efficient. The profit maximization of the banks however, depends on business model adopted by individual banks, its cash inflow and economic condition. From this study, we can conclude that illiquidity and excess liquidity pose "financial problems" which can easily wear down the bank's return base as both affect bank performance.

Lydnon, Peter and Ebitare, (2016) examined the impact of non-performing loans on bank performance in Nigeria for the period 1994- 2014. Secondary data was collected from reliable sources such as CBN, NDIC and the annual reports of listed banks in Nigeria. The study identified four variables; return on capital employed (ROCE), sub-standard loans (SUL), doubtful loans (DOL) and bad loans (BAL). ROCE was employed as proxy for bank performance – the dependent variable, while SUL, DOL and BAL were employed as proxy for non-performing loans – the independent variables. A multiple regression model was formulated to capture the relationship between the variables identified. The study employed data analysis techniques such as Augmented Dickey Fuller (ADF) unit root test, descriptive statistics and multiple regression statistics. The Unit Root test shows that all the variables of interest were integrated of order 1(1)

and were stationary at first differencing. The multiple regression results show that DOL and BAL had statistically significant negative influence on ROCE, while SUL had statistically insignificant negative influence on ROCE. It was empirically proved that non-performing loans had a negative impact on bank performance in Nigeria. The overall implication of these results is that any increase in the volume of non-performing loans would reduce profitability of banks in the long run in Nigeria.

Adegbie and Dada (2018) evaluated the effect of risk asset and liquidity management on the sustainable performance of Deposit Money Banks in Nigeria. The study adopted both the ex-post factor and survey research methods. The population of this study comprised the Deposit Money Banks operating in the banking industry while the samples were three banks in addition to Central Bank of Nigeria as sample representatives. Primary data were used to obtain opinions of respondents while secondary data were used to analyze the actions taken by the managers. Both descriptive statistics and regression analysis were used for the analyses with the aid of Statistical Package for Social Sciences. All analyses were based on level of significance 0.05., and four hypotheses were tested. The findings showed that there are strong relationships between risk asset management, liquidity management and sustainable performance in Nigeria Deposit Money Banks. The study concluded that effective risk asset management and liquidity management remain the nuclear of the banking industry to maintain sustainable performance. The study recommended that the regulatory authority should enforce compliance with monetary policies; that banks should institute effective and quality risk asset and liquidity management in order to maintain financial stability and sustainability.

Taiwo, Achugamonu, Adetiloye, Okoye and Agwu, (2017) researched on the effect of credit risk management on the performance of Nigeria's Deposit Money Banks (DMBs) and Bank lending growth over the period of 17 years (1998-2014). Secondary data for empirical analysis was obtained from CBN Statistical bulletin 2014 and World Bank (WDI) 2015. The study employed multiple linear regression model to analyze the time series data. The result showed that sound credit management strategies can boost investors and savers confidence in banks and lead to a growth in funds for loans and advances which leads to increased bank profitability.

This research will improve on some of the existing studies, in that it will investigate the sub-total and overall effect of credit risk management and financial stability in Nigerian quoted deposit money banks by combining certain credit risk management indicators and other financial indicators to determine which variables influence bank financial stability and loan creation in broader scope.

METHODOLOGY

Ex post facto research design was adopted to obtain secondary data from the population to effectively evaluate the impact of credit risk management on the financial stability in Nigeria quoted deposit money banks. The population for this study consisted of the 22 deposit money banks in Nigeria as at November 30, 2018. This study used a non-probability method in the form of convenient sampling method in selecting its sample. The sample size consisted of ten (10) deposit money banks selected from twenty-two [22] deposit money banks from international and national authorisation categories licensed by the Central Bank of Nigeria. These include; Access

Bank, United Bank for Africa, Diamond Bank, First City Monument Bank, First Bank, Fidelity Bank, Guaranty Trust Bank, Stanbic IBTC, Sterling Bank, and Zenith Bank. These Deposit money banks were chosen as samples because they have the required information and their financial statements are readily assessable. The study covered a ten-year period from 2008 to 2017

Operationalization of Variables and Model Specification

$Y=f(X)$

Y=Financial Stability (FS)

X=Credit Risk Management (CRM)

a) Credit Risk Management (CRM) was measured using Total risk assets to total assets ratio (TRAR), asset quality represented by non-performing loan to gross loan ratio (NPLR), Loan loss provision to total loan ratio (LLPR) and Total loans to total deposits ratio (TLDR).

b) Financial Stability (FS) was measured using fixed dividend cover (FDC), capital adequacy ratio (CAR), debt-to-shareholders fund ratio (DS) and Liquidity ratio (LR).

Where $Y = FS$

$X = CRM$

$FS = f (CRM)$

and

y1 = Debt-to-shareholders fund ratio (DS)

y2 = Capital adequacy ratio (CAR)

y3 = Fixed dividend cover (FDC)

y4 = Liquidity ratio (LR)

x1=Non-performing loan to gross loan ratio (NPLR)

x2 = Total risk assets to total asset ratio (TRAR)

x3 =Loan loss provision to total loan ratio (LLPR)

x4= Total loan to total deposits ratio (TLDR).

Functional Relationship

$DS = f(NPLR, TRAR, LLPR, TLDR) \dots\dots\dots$ Equation 1

$CAR = f(NPLR, TRAR, LLPR, TLDR) \dots\dots\dots$ Equation 2

$FDC = f(NPLR, TRAR, LLPR, TLDR) \dots\dots\dots$ Equation 3

$LR = f(NPLR, TRAR, LLPR, TLDR) \dots\dots\dots$ Equation 4

$FS = f(NPLR, TRAR, LLPR, TLDR) \dots\dots\dots$ Equation 5

Geometric Mean (FS) = $\sqrt[4]{DS*CAR*FDC*LR}$

F1 - F5 are relationship that measures the effect of credit risk management on financial stability.

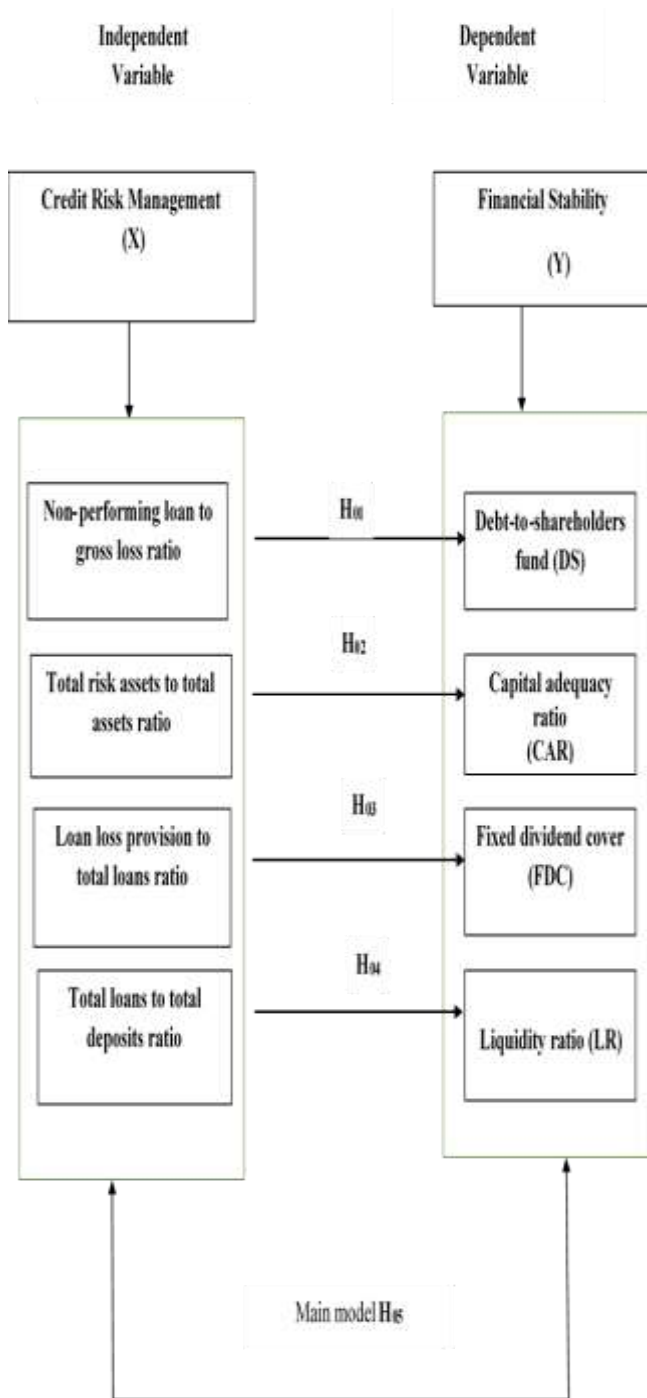


Figure 1: Researcher's Conceptual Model

RESULTS AND DISCUSSION OF FINDINGS

Model 1:

$$DS_{it} = \beta_0 + \beta_1 NPLR_{it} + \beta_2 TRAR_{it} + \beta_3 LLPR_{it} + \beta_4 TLDR_{it} + \mu_1$$

$$DS_{it} = 19.504 + 0.843NPLR_{it} + 2.630TRAR_{it} - 4.960LLPR_{it} - 1.370TLDR_{it}$$

H₀1: Credit risk management does not have significant effect on debt-to-shareholders fund ratio of quoted deposit money banks in Nigeria.

Regression Analysis Table 4.1

| Variable | Coefficient | Std Error | t-Stat. | Prob. |
|--|-------------|-----------|---------|--------|
| Constant | 19.50384 | 3.773557 | 5.17 | 0.000 |
| NPLR | 0.8427294 | 0.4377041 | 1.93 | 0.057 |
| TRAR | 2.630 | 5.150 | 5.11 | 0.000 |
| LLPR | -4.960 | 5.920 | -0.84 | 0.405 |
| TLDR | -1.370 | 4.750 | -2.89 | 0.005 |
| F-Statistic | 11.17 | | | |
| Prob.(F-Stat) | 0.0000 | | | |
| Adjusted R-squared | 0.2419 | | | |
| Diagnostic Tests | | | | |
| Hausman test | 2.82 | | | 0.0932 |
| Breusch Pagan Lagrangian test | 1.98 | | | 0.0794 |
| Heteroskedasticity test | 11.84 | | | 0.0006 |
| Wooldridge test for autocorrelation | 15.298 | | | 0.0036 |
| Pesaran's test of cross-sectional independence | 2.406 | | | 0.0161 |

Findings: The regression analysis estimates on Table 4.1 showed that some Credit risk Management measures i.e. Total risk assets to total asset ratio (TRAR) and non-performing loan to gross loan ratio (NPLR) have positive effects on debt-to-shareholders fund ratio (DS), while others i.e. Loan loss provision to total loan ratio (LLPR) and Total loans to total deposits ratio (TLDR) have negative effects on debt-to-shareholders fund ratio (DS). This is indicated by the sign of the coefficients, that is $\beta_1 = 0.843 > 0$, $\beta_2 = 2.630 > 0$, $\beta_3 = -4.960 < 0$ and $\beta_4 = -1.370 < 0$ respectively. This result is mixed with respect to the a priori expectation as it was expected that all the measurements of Credit Risk Management (CRM) will have positive effect on Financial Stability (FS) of Nigeria quoted deposit money banks. Also, the size of the coefficient of the independent variable show that a 1 unit increase in Total risk assets to total asset ratio (TRAR), non-performing loan to gross loan ratio (NPLR), Loan loss provision to total loan ratio (LLPR) and Total loans to total deposits (TLDR), will lead to a 0.843 and 2.630 unit increase and 4.960 and 1.370 unit decrease in on debt-to-shareholders fund ratio (DS) respectively.

Furthermore, the F-statistic value of 11.17 at 0.000 is significant at 5% level of significance and this indicates the overall significance of the model. This confirms that there is high predictability and usefulness of the model.

Decision: From the result of the regression analysis, Credit Risk Management (CRM) measurements Total

risk assets to total asset ratio (TRAR), asset quality represented by non-performing loan to gross loan ratio (NPLR), Loan loss provision to total loan ratio (LLPR) and Total loans to total deposits ratio (TLDR) have a joint significant effect on Debt-to-Shareholders Fund ratio (DS) of Nigeria quoted deposit money banks, Therefore, the null hypothesis (H_{01}) which says Credit risk Management do not have significant effect on debt-to-shareholders fund ratio of Nigeria quoted deposit money banks Nigeria is hereby rejected.

Model 2:

$$CAR_{it} = \beta_0 + \beta_1 NPLR_{it} + \beta_2 TRAR_{it} + \beta_3 LLPR_{it} + \beta_4 TLDR_{it} + \mu_1$$

$$CAR_{it} = 32.189 - 0.192NPLR_{it} - 4.340TRAR_{it} + 5.190LLPR_{it} - 5.730TLDR_{it}$$

H_{02} : Credit risk Management do not have significant effect on capital adequacy ratio of quoted deposit money banks in Nigeria

Regression Analysis Table 4.2

| Variable | Coefficient | Std Error | t-Stat. | Prob. |
|--|-------------|-----------|---------|--------|
| Constant | 32.18889 | 2.980621 | 10.80 | 0.000 |
| NPLR | -.1923247 | .1292112 | -1.49 | 0.137 |
| TRAR | -4.340 | 3.440 | -1.26 | 0.208 |
| LLPR | 5.190 | 2.960 | 1.75 | 0.079 |
| TLDR | -5.730 | 3.310 | -1.73 | 0.083 |
| F-Statistic | 20.77 | | | |
| Prob.(F-Stat) | 0.0004 | | | |
| Adjusted R-squared | 0.04901 | | | |
| Diagnostic Tests | | | | |
| Hausman test | 2.67 | | | 0.1023 |
| Breusch Pagan Lagrangian test | 17.48 | | | 0.000 |
| Heteroskedasticity test | 1.98 | | | 0.1019 |
| Wooldridge test for autocorrelation | 7.120 | | | 0.0257 |
| Pesaran's test of cross-sectional independence | 2.40 | | | 0.016 |

Findings: The regression analysis estimates on Table 4.2 showed that some Credit risk Management measures i.e. Total risk assets to total asset ratio (TRAR), non-performing loan to gross loan ratio (NPLR) and Total loans to total deposits (TLDR) have negative effects on capital adequacy ratio (CAR), while Loan loss provision to total loan ratio (LLPR) has a positive effect on debt-to-shareholders fund ratio (DS). This is indicated by the sign of the coefficients, that is $\beta_1 = -0.192 < 0$, $\beta_2 = -4.340 < 0$, and $\beta_4 = -5.730 < 0$ and $\beta_3 = 5.190 > 0$ respectively. This result is mixed with respect to the *a priori* expectation as it was expected that all the measurements of Credit Risk Management (CRM) will have positive effect on Financial Stability (FS) of Nigeria quoted deposit money banks. Also, the size of the coefficient of the independent variable show that a 1 unit increase in Total risk assets to total asset ratio (TRAR), non-performing loan to gross loan ratio (NPLR), Loan loss provision to total loan ratio (LLPR) and Total loans to total deposits ratio (TLDR), will lead to a 0.192, 4.340 and 5.730 unit decrease and 5.190 unit increase in on capital adequacy ratio (CAR) respectively. Furthermore, the F-statistic value of 20.77 at 0.004 is significant at 5% level of significance and this indicates the overall significance of the model. This confirms that there is high predictability and usefulness of the model.

Decision: From the result of the regression analysis, Credit Risk Management (CRM) measurements Total

risk assets to total asset ratio (TRAR), asset quality represented by non-performing loan to gross loan ratio (NPLR), Loan loss provision to total loan ratio (LLPR) and Total loans to total deposits (TLDR) have a joint significant effect on capital adequacy ratio (CAR) of Nigeria quoted deposit money banks, Therefore, the null hypothesis (H_{02}) which says Credit risk Management do not have significant effect on capital adequacy ratio of Nigeria quoted deposit money banks Nigeria is hereby rejected.

Model 3:

$$FDC_{it} = \beta_0 + \beta_1 NPLR_{it} + \beta_2 TRAR_{it} + \beta_3 LLPR_{it} + \beta_4 TLDR_{it} + \mu_1$$

$$FDC_{it} = 21.209 - 0.0882NPLR_{it} - 9.330TRAR_{it} + 7.990LLPR_{it} + 1.100TLDR_{it}$$

H_{03} : Credit risk Management has no significant impact on the fixed dividend cover of Nigeria quoted deposit money banks.

Regression Analysis Table 4.3

| Variable | Coefficient | Std Error | t-Stat. | Prob. |
|-------------------------------------|-------------|-----------|---------|--------|
| Constant | 21.20901 | 4.938476 | 4.29 | 0.000 |
| NPLR | -0.0881771 | 0.148099 | -0.60 | 0.552 |
| TRAR | -9.330 | 3.930 | -2.37 | 0.018 |
| LLPR | 7.990 | 3.400 | 0.24 | 0.814 |
| TLDR | 1.100 | 3.940 | 2.78 | 0.005 |
| F-Statistic | 8.95 | | | |
| Prob.(F-Stat) | 0.0623 | | | |
| Adjusted R-squared | 0.1645 | | | |
| Diagnostic Tests | | | | |
| Hausman test | 0.01 | | | 0.9329 |
| Breusch Pagan Lagrangian test | 103.32 | | | 0.000 |
| Heteroskedasticity test | 4.13 | | | 0.0421 |
| Wooldridge test for autocorrelation | 5.279 | | | 0.0472 |

Findings: The regression analysis estimates on Table 4.3 showed that some Credit risk Management measures i.e. Total risk assets to total assets ratio (TRAR) and non-performing loan to gross loan ratio (NPLR) have negative effects on fixed dividend cover (FDC), while others i.e. Loan loss provision to total loan ratio (LLPR) and Total loans to total deposits (TLDR) have positive effects on debt-to-shareholders fund ratio (DS). This is indicated by the sign of the coefficients, that is $\beta_1 = -0.0882 < 0$, $\beta_2 = -9.330 < 0$, $\beta_3 = 7.990 > 0$ and $\beta_4 = 1.100 > 0$ respectively. This result is mixed with respect to the a priori expectation as it was expected that all the measurements of Credit Risk Management (CRM) will have positive effect on Financial Stability (FS) of Nigeria quoted deposit money banks. Also, the size of the coefficient of the independent variable show that a 1 unit increase in Total risk assets to total assets ratio (TRAR), non-performing loan to gross loan ratio (NPLR), Loan loss provision to total loan ratio (LLPR) and Total loans to total deposits (TLDR), will lead to a 9.330 and 0.0882 unit decrease and 7.990 and 1.100 unit increase in on fixed dividend cover (FDC) respectively.

Furthermore, the F-statistic value of 8.95 at 0.0623 is significant at 10% level of significance and this indicates the overall significance of the model. This confirms that there is high predictability and usefulness of the model. Decision: From the result of the regression analysis, Credit Risk Management (CRM) measurements Total risk assets to total assets ratio (TRAR), asset quality represented by non-performing loan to gross loan ratio (NPLR), Loan loss provision to total loan ratio (LLPR) and Total loans to total deposits ratio (TLDR) have a

joint significant effect on fixed dividend cover (FDC) of Nigeria quoted deposit money banks, Therefore, the null hypothesis (H_{03}) which says Credit risk Management do not have significant effect on fixed dividend cover of Nigeria quoted deposit money banks Nigeria is hereby rejected.

Model 4:

$$LR_{it} = \beta_0 + \beta_1 NPLR_{it} + \beta_2 TRAR_{it} + \beta_3 LLPR_{it} + \beta_4 TLDR_{it} + \mu_1$$

$$LR_{it} = 13.360 + 0.005NPLR_{it} - 5.760TRAR_{it} - 1.620LLPR_{it} + 5.340TLDR_{it}$$

H_{04} : Credit risk Management has no significant impact on the liquidity of quoted deposit money banks in Nigeria.

Regression Analysis Table 4.4

| Variable | Coefficient | Std Error | t-Stat. | Prob. |
|-------------------------------------|-------------|-----------|---------|--------|
| Constant | 13.36027 | 2.012467 | 4.64 | 0.000 |
| NPLR | 0.005384 | 0.1247009 | 0.04 | 0.966 |
| TRAR | -5.760 | 2.760 | -2.09 | 0.039 |
| LLPR | -1.620 | 2.390 | -0.68 | 0.499 |
| TLDR | 5.340 | 2.670 | 2.00 | 0.048 |
| F-Statistic | 1.31 | | | |
| Prob.(F-Stat) | 0.2727 | | | |
| Adjusted R-squared | 0.486 | | | |
| Diagnostic Tests | | | | |
| Hausman test | 0.28 | | | 0.5 |
| Breusch Pagan Lagrangian test | 103.32 | | | 0.000 |
| Heteroskedasticity test | .8.08 | | | 0.0421 |
| Wooldridge test for autocorrelation | 0.481 | | | 0.0472 |

Findings: The regression analysis estimates on Table 4.4 showed that some Credit risk Management measures i.e. Total risk assets to total assets ratio (TRAR) and non-performing loan to gross loan ratio (NPLR) have negative effects on liquidity (LR), while others i.e. Loan loss provision to total loan ratio (LLPR) and Total loans to total deposits ratio (TLDR) have positive effects on debt-to-shareholders fund ratio (DS). This is indicated by the sign of the coefficients, that is $\beta_1 = 0.005 > 0$, $\beta_2 = -5.760 < 0$, $\beta_3 = -1.620 < 0$ and $\beta_4 = 5.340 > 0$ respectively. This result is mixed with respect to the a priori expectation as it was expected that all the measurements of Credit Risk Management (CRM) will have positive effect on Financial Stability (FS) of Nigeria quoted deposit money banks. Also, the size of the coefficient of the independent variable show that a 1 unit increase in non-performing loan to gross loan ratio (NPLR), Total loans to total deposits ratio (TLDR), loan loss provision to total loan ratio (LLPR) and Total risk assets to total assets ratio (TRAR), will lead to a 0.005 and 5.340 unit increase and 5.790 and 1.620 unit decrease in on liquidity (LR) respectively.

Furthermore, the F-statistic value of 1.31 at 0.2727 is significant at 10% level of significance and this indicates the overall significance of the model. This confirms that there is high predictability and usefulness of the model.

Decision: From the result of the regression analysis, Credit Risk Management (CRM) measurements Total risk assets to total assets ratio (TRAR), asset quality represented by non-performing loan to gross loan ratio (NPLR), Loan loss provision to total loan ratio (LLPR) and Total loans to total deposits (TLDR) have a joint significant effect on Liquidity (LR) of Nigeria quoted deposit money banks. Therefore, the null hypothesis

(H₀₄) which says Credit risk Management do not have significant effect on liquidity of Nigeria quoted deposit money banks is not rejected. The decision to accept the null hypothesis (H₀₄) was substantiated by the strict regulations by regulators (CBN, NDIC) on liquidity restrictions such as strict adherence to minimum liquidity ratio, maintaining of cash reserve ratio and investment of part of depositors' funds in government securities in order to shield depositors' funds from credit risk.

The Main Model

$$FS_{it} = \alpha_1 + \beta_1 CRM_{it} + \mu_{it}$$

$$FS_{it} = 10.789 + 0.0178 CRM_{it} + \mu_{it}$$

Regression Analysis Table 4.5

| Variable | Coefficient | Std Error | t-Stat. | Prob. |
|--|-------------|-----------|---------|-------|
| C | 10.789 | 1.686089 | 6.40 | 0.00 |
| CRM | .0178 | .0100096 | 1.78 | 0.75 |
| Adjusted R-squared | 0.0224 | | | |
| F-Statistic | 3.17 | | | |
| Prob.(F-Stat) | 0.0748 | | | |
| Breusch and Pagan Lagrangian multiplier test | 0.0001 | | | |
| Heteroskedasticity Test | 0.0764 | | | |
| Autocorrelation | 0.9787 | | | |

Findings: The regression analysis estimates on Table 4.5 showed that there is a positive relationship between credit risk management and financial stability. The probability of f-statistics shows 0.0748 which shows the significance of the model at 10% level of significance.

The result of this study therefore indicates that there is a significant positive relationship between credit risk management and financial stability of the sampled banks for the sampled period.

Implications of findings

The findings of this study have implications for the diverse users of accounting information, Management/Board of Directors, Bank managers, Customers/Creditors, regulators, policy makers, professionals, scholars and the general public. These implications are outlined as follows:

Management/Board of Directors would be able to make timely and appropriate decisions on how credit risk will be properly mitigated in order to maintain efficient financial stability to ensure going concern of the financial institution.

Managers can use findings from this research work to aid them in planning, controlling and directing the affairs of the banking institution in relation to its numerous customers and be able to safely adjudge the needs of these customers within the banking environment. Also, they should be able to put in place proper strategies so as to be able to manage well the risks which are associated with credit in order to maintain and achieve a good financial stability structure for deposit money banks.

Depositors are usually interested in the bank's financial stability, this would help them to know if they should continue to finance their operations and also to know if the business would be faced with liquidity problem in the near future due to their inability to properly handle those risk that are

associated with granting of credit to customers.

Bank Regulators such as CBN, NDIC have primary responsibilities for sound financial system of the nation and financial institution. The study is a step in the right direction to put in place effective policies and guidelines for managing credit risks to restrict bank exposures through strengthening of regulations in the area of financial stability to prevent credit crunch.

Investors will use the findings from the study to have access to a more holistic information on how the return on their investment will be affected by poor credit arising from non-performing loans.

To researchers, this study is a step in the right direction for financial accounting and management research in Nigeria. Consequently, the study helps to provide the impact of poor credit risk management on the financial stability of the nation and measures to prevent future banks collapse.

CONCLUSION

This study examined effect of Credit Risk Management and Financial Stability of Deposit Money banks in Nigeria. Numerical description of all variables under study was captured to depict the movement of values and determine the fluctuations of each of the independent variables with the dependent variables.

Findings of this study therefore provide insight into the effect of Credit Risk Management measured by Total Risk Asset to total assets ratio (TRAR), asset quality represented by non-performing loan to gross loan ratio, loan Loss provision to total loan ratio (LLPR) and also examined the moderating effect of adoption of credit risk management on financial stability of quoted deposit money banks in Nigeria for the period between 2008 and 2017. It also provides an affirmation of the extent to which the variations in the dependent variable are caused by the independent variables covered in the models as depicted by the R-squared and adjusted R-squared. The study concluded that credit risk management significantly impact on financial stability of deposit money banks in Nigeria

Recommendations

Based on the findings and conclusions of this study, the following recommendations are made to bank regulators, operators of banks, investors, depositors, researchers and academia:

Bank regulators; to provide them with information to enforce banks to have an effective system to identify, measure and control credit risk as part of an overall approach to risk management. Also, policy on insider/related parties' credit should be enforced to prevent credit losses.

Operators of banks; to help them pay attention to improve financial stability by managing credit risk that deposit money banks are facing.

Investors; to have a more holistic information on how the return on their investment will be affected by poor credit arising from non-performing loans.

Depositors; to assist them to determine the riskiness in order to ensure safety of their funds.

Researchers; it will give them the opportunity to contribute to body of knowledge in the area of credit risk management as it affects financial stability of quoted deposit money banks in Nigeria.

Contribution to Knowledge

This study has made the following firm characteristics on value relevance of financial performance contributions to knowledge:

The study would help Regulators (CBN, NDIC) as an input policy formulation in the areas of credit risk management to prevent instability in the financial system. Also, the study will assist regulators to

strengthen and enforce existing policy in order to enhance financial stability of financial system.

This study would be a major contribution to literature on credit risk management that will help to prevent credit risk exposure in order to maintain efficient financial stability to ensure going concern of the financial institution. This study contributed to the existing literature by the findings that have been examined; implications of the findings, the recommendations that have been made and future research should focus extensively on ways that can improve financial stability of quoted deposit money banks in Nigeria.

The study discovered that Credit Risk Theory is a good indicator for operators of banks to ensure financial stability of the business.

The study provides empirical evidence of the effect of financial stability measured by Fixed Deposit Cover (FDC), Capital Adequacy Ratio (CAR), Debt to Shareholders Fund Ratio (DS) and Liquidity Ratio (LR) by creating a nexus from the empirical analysis on the effect of credit risk management and financial stability of quoted deposit money banks in Nigeria through the model formulated and evaluated.

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