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Risk Assets Management and Profitability of Deposit Money Banks in Nigeria.

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Abstract

This study was conducted to assess risk assets management and its impact on the profitability of quoted deposit money banks in Nigeria. Seven quoted deposit money banks which has international authorization as at 2018 were used in the sample for a period of ten years (2009-2018). The data for the study were obtained from audited annual financial statements and various reports of Central Bank of Nigeria (CBN). Purposive sample method was adopted in selecting the banks, The SPSS was used to run OLS regression analysis. The study used three parameter of estimate, substandard, doubtful and loss risk assets under risk assets management. The suitability of the models and reliability of the result. Coefficient of determination showed that risk assets management variable explained. Results of the person correlation coefficient between substandard, doubtful and lost risk assets showed that P- value (sig. Value) is 0.899 which is greater than the level of significant 0.05 indicate that Risk Assets Management does not have significant effect on return on investment of DMBs in Nigeria. Furthermore, Substandard loan, doubtful loan and loss loan which has 0.968,0.956 and 0.771 P-Value (Sig. Value) respectively which are greater than the level of significant 0.05 meaning that substandard, doubtful and lost risk assets does not have effect on return on investment of Nigeria DMBs. The study concludes that the risk assets management (substandard, doubtful and lost assets loan) does not often translate a positive financial performance of banks. Although effective risk assets management in financial institutions reduce the occurrence of systematic and economic breakdown but this does not guarantee increase in the returns on investment. Finally, the study recommend that all banks should institute sound risks assets and liquidity management system that will guarantee the earnings qualities of their loans and advances, avoid non-performing loan and advances and enhance quality of their earnings which have positive effective dividends payout, retain earnings and growth in capital and assets of the banking institutions.

Keywords: Risk assets management, profitability, substandard loan, doubtful loan, lost loan, deposit money banks.

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1.0 Introduction

Banks are profit-making organizations performing as intermediaries connecting borrowers and lenders in bringing temporarily available resources from business and individual customers as well as providing loans for those in need of financial support (Uwuigbe, 2013; Driga, 2012). The banks are entrusted with the funds of depositors or customers and used by banks for their business activities. The fund belongs to the customers, hence, a program must exist for management of these funds. The program must constantly address three basic objectives namely; liquidity, safety and income. Liquidity enables the banks to meet credit demands of their valuable and long established customers who enjoy good credit standing. Safety objective is to avoid undue risk since banks are expected to meet responsibility of protecting the deposits entrusted to them. Proper and prudent management of banks tend to create customers' confidence. The third being income/profitability which is aimed at growth and expansion to meet repayment of interest charges on debt, to achieve the objective of maximizing wealth of shareholders and to survive competition in the banking industry (Okwoli, 1996; Uwuigbe, 2011).

Amihud (2016) posits that credit is a marketing tool for expanding sales. Credit creation has proved to be an important function of deposit money banks since it is the main source of deposit money banks' internally generated revenue (Jens, Lars & Morten, 2014). Credit also involves giving out resources got from various depositors or customers held in their customers' accounts, to another party at an interest rate higher than what they pay to suppliers of funds with the aim of maximizing profit (Achou & Tengu, 2008).

According to Cai & Anjan (2008), credit risk is the most important function of the banking industry. It is the most risk and difficult, and at the same time most profitable function performed by banks. The key strategic value a bank adds has always depended upon its ability to manage credit risk. This cannot be properly done without an effective risk assessment, control and follow up strategy. Risk increase when credit principles are violated. Credit as the name implies is described as the right to receive payments or the obligation to make payments on demand or at some future date on account of the immediate transfer of goods or money to another (Uwuigbe, Uwalomwa & Ben-Caleb, 2012).

Liquidity is the capacity of business concerns to meet maturing financial obligations. It is also portrayed as the conversion and exchangeability of an asset for another in a timely and cost effective manner. In the word of Acharya & Naqvi (2012), liquidity refers to the speed and certainty of converting an asset to cash whenever at the discretion of the asset holder. Anyanwu (1993) posits that liquidity is the convertibility of an asset to cash with minimum cost or loss.
According to Jhingan (2010), a bank needs a high degree of liquidity in its assets portfolio the liquidity of assets refers to the ease and certainty with which it can be turned into cash. The bank must hold a sufficient large proportion of its assets in the form of cash and liquid assets for the purpose of profitability. If the bank keeps liquidity the uppermost, its profit will be low. In the other hand, if it ignores liquidity and aims at earning more, it will be disastrous for it. This in managing is investment portfolio a bank must strike a balance between the objectives of liquidity and profitability. This balance must be achieved with a relatively high degree of safety. Therefore, liquidity problem is not left out when granting credit sales. This arises from over investment in receivables especially when the debtors are of high risk class. A bank suffering from liquidity problem implies that the cost of obtaining funds from other sources may be high and a credit sale beyond the optimal level of credit is dangerous.

According to Graham (1990), profitability is always associated with performance and productivity, therefore true pure profit is the increase in wealth that an investor gets out of making

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an investment taking into consideration all costs associated with it including the opportunity cost of capital. In the banking industry, every credit granted attracts an interest to the bank. Hence bank lending operations are risky but very profitability. Liquidity management and profitability are very important in the development, survival, sustainability, growth and performance. Profitability does not translate to liquidity in all cases. A company may be profitable without necessarily being liquid. Therefore, liquidity should be managed in order to obtain an optimal level, that is, a level that avoid excess liquidity which may translate to poverty of ideas by management. Also liquidity level should not fall below minimum requirement as it will lead to the inability of the organization to meet short term obligation as at when due.

1.2 Statement of the Problem

There is no doubt that deposit money banks play an important role in mobilizing financial resources for investment by extending and granting credit to various businesses and investors. Lending represents the heart of the banking industry and loans and advances are the dominant assets as they generate the largest share of operating income of the banks. This credit facility however, exposes the banks to the greatest level of risk. Many banks that winded up in the late 1990's and up to the recent restructuring of the deposit money banks in Nigeria were as a result of the poor management of facility which was portrayed in the high levels of non-performing loans. Not only that, as rightly observed by Alshatti (2015) who shed more light to the fact that banks are largely exposed to various types of risks attributable to liquidity management, which affect the performance and activity of these banks. He added further that that since the primary goal of the banking management is to maximize the shareholders' wealth, banks should assess the cash flows and the assumed risks in order to direct its financial resources in different areas of utilization. However, as a result of poor credit management caused by loopholes and violation in risk assessment and control techniques resulting to bad and doubted debts on bank performance. In addition, there is a high rate of bad debts because some corporations take advantage of the credit facility that is extended to them and find themselves, not able to pay the debt later. The poor level of trade credit management is reflected in the profitability position of the firm.

It is also observed that high interest rate charged by bank is also attributed to inability of its debtors to pay in good time. Lack of trust on the part of depositors and other customers which might due to unexpected reduction in the level of operations. Losses can arise in a number of circumstances, for example:

- A consumer may fail to make a payment due on a mortgage loan, credit card, line of credit, or other loan.
- A company is unable to repay asset- secured fixed or floating charge debt.
- A business or consumer does not pay an employee's earned wages when due.
- A business or government bond issuer does not make a payment on a coupon or principal payment when due.
- An insolvent insurance company does not pay a policy obligation.
- An insolvent bank won't return funds to a depositor.
- A government grants bankruptcy protection to an insolvent consumer or business.

Going by the emphasis that is laid on risk assets management by Nigerian deposit money banks in the recent time, the level of contribution of the aforementioned factors to profitability have not been critically analyzed which called for this study. Researcher has therefore turned to

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the study of risk assets management in banking arena, that is the non- performing loan/ credit facilities which were classified into Substantial, doubtful and lost credit assets.

1.3 Objectives of the Study

The main objective of this study is to examine the relationship between risk assets management and profitability of deposit money banks in Nigeria. The specific objectives are to:

(i) examine the significant effect of substandard loan on return on investment of Deposit Money Banks in Nigeria.
(ii) determine the significant impact of doubtful loan on return on investment of Deposit Money Banks in Nigeria.
(iii) to investigate the significant effect of lost risk assets on return on investment of Deposit Money Banks in Nigeria.
(iv) to examine the significant effect of non- performing credit assets on return on investment of Deposit Money Banks in Nigeria.

1.4 Research Questions

(i) What **is** the significant effect of substandard loan on return on investment of Deposit Money Banks in Nigeria?
(ii) In what way does doubtful loan impact on return on investment of Deposit Money Banks in Nigeria?
(iii) How does lost risk assets significantly affect return on investment of Deposit Money Banks in Nigeria?
(iv) What is the significant effect of non- performing credit assets on return on investment of Deposit Money Banks in Nigeria?

1.5 Research Hypotheses

H_{01}: Substandard loan does not significantly affect return on investment of Deposit Money Banks in Nigeria.
H_{02}: There is no significant impact of doubtful loan on return on investment of Deposit Money Banks in Nigeria.
H_{03}: Lost risk assets do not significantly affect return on investment of Deposit Money Banks in Nigeria
H_{o4}: There is no significant effect of non- performing credit assets on return on investment of Deposit Money Banks in Nigeria.

2.0 Literature Review

2.1 Conceptual Review

2.1.1 Concept of Credit Risk Management and Profitability

Banking system is a combination of financial institutions responsible for safekeeping and lending of money and the provision of other financial services to the populace (CBN, 2016). 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. Credit risk is the risk that a borrower defaults and does not honour 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. The default of a small number of customers may result in a very large loss for the bank (Boland, 2012). Effective management of credit risk is inseparably linked to the development of banking technology which

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enables high speed loan decision making and simultaneously reduce the cost of controlling credit risk. This requires a complete base of partners and contractors (Das & Ghosh, 2007).

Credit risk is the possibility that the actual return on an investment or loan extended will deviate from that, which was expected (Conford, 2000). Credit risk is also defined as losses from the refusal or inability of credit customers to pay what is owed in full and on time (Coyle, 2000). The main sources of credit risk include, limited institutional capacity, inappropriate credit policies, volatile interest rates, poor management, inappropriate laws, low capital and liquidity levels, directed lending, massive licensing of banks, poor loan underwriting, reckless lending, poor credit assessment, no non-executive director laxity in credit assessment, poor lending practices, government interference and inadequate supervision by the Central Bank of Nigeria in order to minimize these risks, it is necessary for the bank to have; well-capitalized banks, stabilization of interest rates, sharing of information about borrowers, service to a wide range of customers, reduction in non-performing loans, increased bank deposits and increased credit extended to borrowers. Loan defaults and non-performing loans need to be reduced (Basel Committee on Banking Supervision, 2006).

According to Szabo (2005), for a credit policy to be effective it must not be static, the policy must be reviewed from time to time regardless of how serviceable it proves to be. The review and adjustments are necessary because of dynamics in business caused by changes in its internal and external environment. He also added that a successful credit policy should benefit both account receivables and sales; this can be achieved by reciprocation between concerned departments (sales and credit).

Muninarayanappa & Nirmala (2004) in a related study opined that the success of credit risk management requires maintenance of proper credit risk environment, credit strategy and policies. Thus the ultimate aim should be to protect and improve the loan quality. Liquidity management is a concept that is receiving serious attention all over the world especially with the current financial situations and the state of the world economy. The concern of business owners and managers all over the world is to devise a strategy for managing their day to day operations in order to meet their obligations as they fall due and increase profitability and shareholder's wealth (Owolabi & Ibida, 2012).

Farris & Hutchison (2002) submitted that corporate liquidity is examined from two distinct dimensions, the static or dynamic views. The static view is based on commonly used traditional ratios, such as current ratio and quick ratio, calculated from the financial position amounts. These ratios measure liquidity at a given point in time whereas dynamic view measures ongoing liquidity from the firm's operations. As a dynamic measure of the time it takes a firm to go from cash outflow to cash inflow which is measured by cash conversion cycle.

2.1.2 Impact of risk Assets on profitability

The safety of deposits of banks' customers or depositors is of paramount importance to them. To this end, it is essential for banks to critically assess the customers who demand the extension of credit or loan facility before granting such but if credit administration is not properly administered or handled in the loan portfolio of banks will definitely lead to bad debts. In the word of Pandey (2011), the planning, monitoring, collection and management of lent funds is core of the credit department which must be effectively carried out to ensure the survival of the banking industry. If credit risks increase with the growing volume of credit transactions in banks, bad and doubtful debts will claim a larger percentage of the supposed profit estimated to be earned by

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banks. Failure to properly check these risks, the profitability of banks reduces with each transaction. It will also reduce the operational performance of bank.

The inevitable asset for operation of any business is cash. It is the input needed to keep the business running continuously. A bank as a business concern needs to have cash and liquid assets which it can easily convert into cash at short notice. Pandey (2011) identifies the three types of assets available to a bank for its operation to include cash, deposits with the central bank, treasury bills. Thus, for banks to remain in the business of financial intermediation, they must formulate and implement policies to ensure the availability of cash and liquid assets in the asset portfolio at any point in time. Liquidity risk reduces the ability of the bank to meet its financial obligations as they fall due. When this risk remains unchecked, banks will lose customers thereby reducing the volume of profitability.

2.1.3 Concept of Substandard, Doubtful and Lost

An efficient financial intermediation requires a stable banking system to channel surplus funds into savings for investments to promote rapid economic growth (King & Levine, 1993; Brownet al., 2009). This is done through the creation of loan assets by banks and other financial intermediaries. However, the creation of the loan assets exposes banks to the risk of defaults by borrowers as well as liquidity constraints. This does not only affect the bank profitability but also the stability of the banking system. The rationale behind giving much attention by the banks to the lending activity, especially in periods of a stable economic environment, is that a substantial amount of banks income is earned on loans which contribute significantly to the financial performance of banks. According to the Ghana Banking Survey in 2014 by PricewaterhouseCoopers, interest income from loans increased by 32% from GHS1,993m in 2012 to GHS2,623m in 2013.Thus, the figures point to the fact that loans contribute immensely to the financial performance of banks in Ghana.

Alton & Hazen (2001) posit that non-performing loans is seen as loans that are ninety days or more past due or no longer accruing interest. Caprio & Klingebiel (1996), cited in Fofack (2005), consider non-performing loans as loans which for a relatively long period of time do not generate income, that is the principal and or interest on these loans have been left unpaid for at least ninety days. A non-performing loan may also refer to one that is not earning income and full payment of principal and interest is no longer anticipated, principal or interest is ninety days or more delinquent or the maturity date has passed and payment in full has not been made.

According to CBN (2014) Section 3.17 under the credit risk management made provision for a tolerable limit of non-performing loan to total loans. Item (a) allows a 10.0 per cent tolerable limit of the ratio of non-performing loans to gross loans (NPL ratio) and further discloses sanctions by the CBN in cases ‘where the ratio of non-performing credits to total credits is 20.0 per cent above the tolerable limit of 10.0 per cent and/or 25.0 per cent of non-performing credits are insiders related. According to CBN prudential guideline (2010) non-performing credit facilities shall be classified into three categories namely, sub-standard, doubtful or lost on the basis of the criteria below:

Sub-Standard

The following objective and subjective criteria shall be used to identify sub-standard credit facilities:

Objective Criteria: credit facilities on which past due principal and/or interest remain outstanding for at least 91 days but not more than 180 days. More so, fraud cases of up to 1 month but less than 3 months old and under police investigation regardless of the likely outcome of the cases. A minimum provision of 10 per cent shall be made for “other assets” classified as sub-standard.

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Doubtful

The following objective and subjective criteria shall be used to identify doubtful credit facilities: *Objective Criteria*: credit facilities on which unpaid principal and/or interest remain outstanding for at least 181 days but not more than 360 days. b. Subjective Criteria: credit facilities which, in addition to the weaknesses associated with sub-standard credit facilities reflect that full repayment of the debt is not certain or that realizable collateral values will be insufficient to cover bank's exposure. Items for doubtful classification shall include, but are not limited to outstanding fraud cases of 3 to 6 months old, with slim chances of full recovery. A minimum of 50 per cent provision shall be made for "other assets" classified as doubtful.

Lost Credit Facilities

The CBN (2014) described loan loss provision (LLP) as a portion of banks' profit that is, deducted or sacrificed to pay off part of sticky past due of its borrowers according to prudential guidelines on non-performing credits, while Khan (2018), asserted that banks have to make provision requirement based on asset classification and taking into account the time lag between an account becoming doubtful of recovery, its recognition as such and the erosion over time in the value of security charged to the bank. ECB (2017) defined loan loss provisioning has robust policies and procedures which banks normally put in place to validate the accuracy and consistency of the loan reserves estimations regularly. On the other hand, loan loss provision is defined as the portion of banks' profit that is set aside through regular deduction to pay off part or whole of sticky past due of its borrowers in compliance with the tenets of prudential guidelines of the National Deposit Insurance Corporation (NDIC) on non-performing credits. Banking regulators are well aware of the implications of the rapid recognition of credit-loss provisions, or the cliff effect, under IFRS 9 for regulatory capital and consequently, the soundness of banks. The following objective and subjective criteria shall be used to identify lost credit facilities:

Objective Criteria: facilities on which unpaid principal and/or interest remain outstanding for more than 360 days and off-balance sheet engagements that have crystalized. Items for lost classification shall include, but are not limited to the following:

i. Cheques purchased and uncleared effects over 30 days old and for which values had been given.
ii. Outstanding fraud cases over 6 months old and involving protracted litigation.
iii. Inter-branch items over 30 days old whether or not the origins are known.

A minimum of 100 per cent provision shall be made for "other assets" classified as lost loan.

2.2 Theoretical Review

Over the years, a lot of theories have been formulated in ensuring the availability and sufficiency of liquidity at any point in time. The following theories shall be considered in the validation of this study;

2.2.1 Real Bills Theory

This theory is also known as Commercial Loan Theory which states that banks should lend only on short term basis, self-liquidating, commercial paper to business firms. Hosna & Manzura (2009) opined that the commercial loan theory is geared to influence persuasively both the bank lending and the general economic activities. In other words, banks should finance the movement of goods through the successive process of production so that once these goods are sold, the loans will liquidate themselves. Such loans are termed inventory or working capital loan (Ngwu, 2006). Full implementation of this theory will reveal that it is expected to serve as a monetary supply to

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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.

2.2.2 The Anticipated Income Theory

This theory assumes that banks should make loans on the basis of the anticipated income of the borrower and not on his present value. Afriyie & Akotey (2011) found that in every instance, regardless of the nature and character of the borrower's business, the bank planned liquidation of term loans from anticipated earnings of the borrower. Liquidation should not based on sales of assets of the borrower like that of commercial or traditional theory of liquidity or by shifting the term loan to some other lenders as in the shiftability theory of liquidity but by anticipating income of the borrower. In effect, one striking thing with this theory is its "future-oriented approach" to bank loans and advances (Kolapo, Ayeni, & Oke, 2012).

2.2.3 Liquidity Asset Theory

This theory emphasizes on the asset side of the financial position and argues that banks must hold large amount of liquid assets against possible demand or payment cushion of readily marketable short term liquid assets against unforeseen circumstances (Ngwu, 2006).

2.2.4 The Liability Management Theory

This theory holds that it is unnecessary to observe traditional standards since reserve money can be borrowed or obtained in the money market using short term debt instruments whenever a bank experiences reserve deficiency. According to Jhingan (2010) holds that a bank can meet its liquidity requirement by bidding the market for additional funds. They can borrow money from the money market to meet their liquidity needs at a given period of time instead of granting self-liquidating loans to its customers or borrowers.

In the word of Shafiq & Nasr, (2010), it does not mean that the bank manages only its liabilities and passive with respect to its assets. The theory recognizes that the asset structure of the bank has a vital role to play in providing the bank with liquidity. But the theory takes a one dimensional approach to liquidity and argues that the bank can also use its liabilities for liquidity purposes. A bank wants liquidity for deposit withdrawal purposes and also to meet the reasonable loan requests of its customers.

2.2.5 Information Asymmetry Theory

This theory was first applied by Akerlof (1970). The theory states that it may be complex to differentiate between good and bad borrowers and this may lead to adverse selection and moral hazard problems. In line with the theory. Cottarelli et al. (2005); Kraft & Jankov (2005) show the role of loan growth in bank risk-taking and resulting instability. The theory also relates to contagious withdrawals when depositors are imperfectly informed about the type of shocks hitting banks and about interbank exposures (De Bandt & Hartmann, 2000).

2.2.6 The Credit Risk Theory

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Credit risk according to Anderson, Salas, & 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).

2.2.7 Loanable Fund Theory

This theory was propounded in 1930 by Wicksell. It attempted to identify the proximate causes of interest rate variation by analyzing the demand and supply of credit. Banks do consider the effect of adverse selection and moral hazard on their lending activities (Mishkin, 2000) since it is very difficult to forecast the type of borrower at the start of the banking relationship, Stiglitz & Weiss, (1981) and they cannot always set high-interest rates by trying to earn maximum interest income (Chodecai, 2004; Okoye, Amahalu, Obi, & Nweze, 2016). Thus the weakness of the theory is that the interest rates set by banks may not be commensurate with the risk faced by the borrowers thus raising the tendency for loan default. Hence, the question of what is the appropriate rate of interest banks should charge their customer remains unsettled. This study adapts the credit risk theory in that it is perfectly related to investigation under the study.

2.3 Empirical Review

Innocent, Anastesia & Josephine (2017) investigated the effects of credit management on liquidity position of Brewery Industry in Nigeria. The study used secondary sources of data from the annual reports of the selected brewery firms in Nigeria. The Analytical tool used for the test of Hypotheses was ordinary least square regression. The study found out that debt ratio does not have significant effect on the liquidity of brewery industry in Nigeria; account payable ratio has significant effect on the liquidity of brewery industry in Nigeria, and account receivable ratio has significant effect on the liquidity of brewery industry in Nigeria.

Ernest & Fredrick (2017) investigated a study on impact of credit risk management on the profitability of selected deposit money banks listed on the Ghana Stock Exchange. The study adopted the Random Effect Model within the panel estimation technique framework. The findings showed that indeed credit risk management have significant relationship with the profitability of banks.

Alalade, Yinka, Agbatogun, Cole & Adekunle (2015) undertook a study on credit risk management and financial performance of selected deposit money banks in Nigeria. The panel data come from 10 deposit money banks listed on Nigeria Stock Exchange (NSE) between 2006 and 2010. The results reveal that credit risk management has significant effect on financial performance of deposit money banks.

Raymond, Adigwe.& Akamelu (2015) carried out a study on credit management on liquidity and profitability positions of a manufacturing company. Descriptive research design was adopted. The researchers found that credit policy can affect profitability management in

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manufacturing companies in Nigeria and there is a significant correlation between liquidity position and debtors' turnover of the company in Nigeria. It was also discovered that there is a relationship between liquidity management and corporate profitability.

The study concluded by Uwalomwa, Uwuigbe and Oyewo (2015) examined the effect of credit management on bank performance of listed banks in Nigeria. 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 while ratio of non-performing loans and bad debt do have a significant negative effect on the performance of banks in Nigeria, on the other hand, the relationship between secured and unsecured loan ratio and bank's performance was not significant. Taiwo, Ucheaga, Achugamonu, Adetiloye, & Agwu (2014) carried out a research on the impact of credit risk management and its implications on bank performance and Lending Growth in Nigeria. The study employed Secondary data for empirical analysis which was obtained from CBN Statistical bulletin 2014 and World Bank (WDI) 2015. Multiple linear regression model was used 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. It was also revealed that credit risk management has an insignificant impact on the growth of total loans and advances by Nigerian Deposit money banks.

Oyadonghan, and Bingilar (2014) investigated the impact of effective credit policy on liquidity of manufacturing companies in Nigeria. The study employed survey research design. The study revealed that when a company's credit policy is favourable, liquidity is at a desirable level. And also, that manufacturing companies do not monitor and review their credit policy regularly and as a result the allowance of cash discounts could not be minimized as much as expected.

Ejoh, Okpa & Egbe (2014) investigated the impact of credit and liquidity risk management on the profitability of Deposit money banks in Nigeria. The study employed descriptive research design. The formulated hypotheses were tested using the Pearson product moment correlation. The results of the study discovered that there is a significant relationship between credit management and bank profitability. Also, there is a significant relationship between bank liquidity and profitability among deposit money banks in Nigeria.

The major gap of this study is that it improves on some of the existing studies as it investigates the sub-total and overall effect of credit risk management and its indicators on the lending ability of Nigerian deposit money banks by combining certain credit risk management indicators and other financial indicators to determine which variables influence bank profitability in a broader scope.

Uwalomwa, Uwuigbe and Oyewo (2015) investigated the impact of credit management and Bank Performance of Listed Banks in Nigeria. 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. The study found out that the ratio of non-performing loans and bad debt do have a significant negative effect on the performance of banks in Nigeria, on the other hand, the relationship between secured and unsecured loan ratio and bank's performance was not significant.

3.0 Methodology

3.1 Data Collection Method/Techniques of Data Analysis

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The data used in this paper was obtained from secondary sources. The data used were collected from the banks' audited and published annual financial-year-end reports of the selected deposit money banks observed from 2009 through 2018. The data comprise seven (7) deposit money bank which has international authorization as at 2018 in the sample.

The sample of this study contains seven (7) Nigerian deposit money banks, which was selected based on the quality and financial strengths of those banks. They are Guarantee Trust Bank, First Bank, UBA, Access banks, Union Bank Fidelity Bank and Zenith Bank), for a minimum period of ten years (2009-2018). Purposive sampling method was adopted in the course of selecting banks to be included in the study. This method was adopted since it is conveniently helped the researcher in selecting only banks with consistent data set for inclusion in the sample of this study. The Multiple Regression facilitates determination of effects of the risk assets management variables on the profitability variable. The regression is specified on the basis of hypothesized functional relationship between the relevant risk assets management and profitability measures.

3.2 Model Specification

The model used to capture the objectives of this study is given as follows:

The estimated functional relationship is explicitly stated as;

Return on Investment $= f$ (Risk Asset Management)

Return on Investment $= f$ (Substandard, Doubtful debt and lost)

Thus, the adopted model for this study is

$$RI = \alpha_o + \alpha_1 SSD + \alpha_2 DDT + \alpha_3 L + \mu \quad (1)$$

Where:

RI = Return on Investment

SSD = Substandard

DDT = Doubtful debt

L = Lost

α_o = Intercept or (constant)

$\alpha_1, \alpha_2, and\ \alpha_3$ = The Parameters of the adopted model or effects of the Risk Asset Management

μ = Error term or Residuals

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4.0 Statistical Data Analysis, Results and Discussion- Using Ratio (ROI)

4.1 Fitted Model for the Study

Table 1: Coefficients of the model, Standard Error, T-test and P-value (Sig. value)

Coefficient

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.173	.088		1.957	.098
	Substandard	1.167E-6	.000	.526	.042	.968
	Doubtful	4.303E-7	.000	.994	.057	.956
	Lost	-3.346E-7	.000	-1.678	-.304	.771

a. Dependent Variable: Ratio (ROI)

Source: SPSS Output 1

From the Table 1 above,

$$\alpha_o = (constant) = 0.173;\ \alpha_1 = 0.000001167;\ \alpha_2 = 0.0000004303\ and$$

$\alpha_3 = -0.0000003346.$

Hence, the fitted model for this research work becomes

$$RI = 0.173 + 0.0000001167(SSD) + 0.0000004303(DDT) - 0.0000003346(L)$$

4.2 To test for the significance of individual Estimated Parameter- Using T-Test

4.2.1 T-Test for Substandard (SSD):

Hypotheses:

H_{o1}: Contribution of Substandard loan does not significantly affect the return on investment (ROI) of deposit money banks in Nigeria.

H_{11}: Contribution of Substandard loan is significantly affect the return on investment (ROI) of deposit money banks in Nigeria.

Alternatively,

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$H_{o1}: \alpha_1 = 0 \; Vs \; H_{11}: \alpha_1 \neq 0$

Decision Rule:

Reject H_{o1} if p-value is less than or equal to the level of significant $(\alpha = 0.05)$. Otherwise do not reject H_{o1}.

Conclusion:

Since p-value (Sig. value) is 0.968 which is greater than the level of significant $(\alpha = 0.05)$, then we do not reject the null hypothesis (H_{o1}) and conclude that Contribution of Substandard loan does not significantly affects the return on investment (ROI) of deposit money banks in Nigeria at 5% level of significance.

4.2.2 T-Test for Doubtful Debt (DDT):

Hypotheses:

H_{o2}: There is no significant impact of doubtful loan on return on investment (ROI) of deposit money banks in Nigeria.

H_{12}: There is significant impact of doubtful loan on return on investment (ROI) of deposit money banks in Nigeria.

Alternatively,

$H_{o2}: \alpha_2 = 0 \; Vs \; H_{12}: \alpha_2 \neq 0$

Decision Rule:

Reject H_{o2} if p-value is less than or equal to the level of significant $(\alpha = 0.05)$. otherwise do not reject H_{o2}.

Conclusion:

Since p-value (Sig. value) is 0.956 which is greater than the level of significant $(\alpha = 0.05)$, then we do not reject the null hypothesis H_{o2} and conclude that there is no significant impact of doubtful loan on return on investment (ROI) of deposit money banks in Nigeria at 5% level of significance.

4.2.3 T-Test for Lost (L):

Hypotheses:

H_{o3}: Contribution of Lost risk assets do not significantly affect the return on investment (ROI) of deposit money banks in Nigeria.

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H_{13}: Contribution of Lost risk assets is significantly affect the return on investment (ROI) of deposit money banks in Nigeria.

Alternatively,

$H_{o3}: \alpha_3 = 0 \; Vs \; H_{13}: \alpha_3 \neq 0$

Decision Rule:

Reject H_{o3} if p-value is less than or equal to the level of significant ($\alpha = 0.05$). otherwise do not reject H_{o3}.

Conclusion:

Since p-value (Sig. value) is 0.771 which is greater than the level of significant ($\alpha = 0.05$), then we do not reject the null hypothesis H_{o3} and conclude that Contribution of Lost risk assets do not significantly affect the return on investment (ROI) of deposit money banks in Nigeria at 5% level of significance.

4.3 Test of Significance for the Joint Coefficient- Using F-Test (ANOVA)

We use Analysis of Variance (ANOVA) to test for the significance or contribution of the joint parameters (Risk Assets Management) or coefficients to the fitted model.

Table 2: Analysis of Variance (ANOVA)

ANOVA[b]

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	.003	3	.001	.191	.899[a]
	Residual	.031	6	.005		
	Total	.034	9			

a. Predictors: (Constant), Lost, Substandard, Doubtful

b. Dependent Variable: Ratio (ROI)

Source: SPSS Output 2

Hypotheses:

H_{o4}: Contribution of the Risk Asset Management (Substandard, Doubtful Debt and Lost) does not have significant effect on return on investment (ROI) of deposit money banks in Nigeria.

H_{14}: Contribution of the Risk Asset Management (Substandard, Doubtful Debt and Lost) have significant effect on return on investment (ROI) of deposit money banks in Nigeria.

Alternatively,

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$H_{o4}: \alpha_1 = \alpha_2 = \alpha_3 = 0$

$H_{14}: \alpha_1 \neq \alpha_2 \neq \alpha_3 \neq 0$

Decision Rule:

Reject H_{o4} if p-value is less than or equal to the level of significant ($\alpha = 0.05$). otherwise do not reject H_{o4}.

Conclusion:

Since p-value (Sig. value) is 0.899 which is greater than the level of significant ($\alpha = 0.05$), then we do not reject the null hypothesis (H_{o4}) and conclude the contribution of Risk Asset Management (Substandard, Doubtful Debt and Lost) does not have significant effect on return on investment (ROI) of deposit money banks in Nigeria at 5% level of significance.

4.4 Correlation Analysis

Correlation is the degree of association between two or more variables. If the degree of association is between only two variables, then it is called Simple Correlation. But, if the degree of association is between more than two variables, then it is called multiple correlation. The correlation coefficient is denoted by ***r*** and its values lies between negative one and positive one i.e. $-1 \leq r \leq +1$.

Table 3: Correlation Coefficient Matrix

		Ratio	Substandard	Doubtful	Lost
Pearson Correlation	Ratio	1.000	-0.129	-0.143	-0.177
	Substandard	-0.129	1.000	0.998	0.981
	Doubtful	-0.143	0.998	1.000	0.991
	Lost	-0.177	0.981	0.991	1.000
Sig. (1-tailed)	Ratio	0.0	0.361	0.346	0.312
	Substandard	0.361	0.000	0.000	0.000
	Doubtful	0.346	0.000	0.000	0.000
	Lost	0.312	0.000	0.000	0.000

Source: SPSS Output 3

Table 3 above revealed the Simple Correlation Coefficient (Pearson Method) Matrix in which
$r_{YX_1=} - 0.129$ (i.e. about 12.9%) = The Pearson Correlation coefficient between Return on Investment and substandard (SSD).
$r_{YX_2=} - 0.143$ (i.e. about 14.3%) = The Pearson Correlation coefficient between Return on Investment and Doubtful Debt (DDT).
$r_{YX_3=} - 0.177$ (i.e. about 17.7%) = The Pearson Correlation coefficient between Return on Investment and Lost (L).

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Hence, there is negative degree of association between the ROI and SSD; ROI and DDT & ROI and Lost. Therefore, this results justified the CBN prudential guideline that minimum provision of 10%, 50% and 100% shall be made for Substandard, Doubtful and the Lost respectively.

Note:
$\boldsymbol{Y = ROI, X_1 = SSD, X_2 = DDT \text{ and } X_3 = L}$

4.4 Discussion of Findings

In order to examine the effect of risk asset management on profitability of deposit money banks in Nigeria, multiple regression analysis technique was applied to test the data collected and the result presented on the table 1-3. This was in line with the objective of the study and the hypothesis which seek to examine the effect of risk asset management on profitability of deposit money banks in Nigeria. The results showed that each parameter of estimate under risk asset management listed had one effect or the other on the dependent variables (profitability).

From table 1 above, for substandard loan the p- value (Sig. Value) is 0.968 which is greater than the level of significant (α= 0.05) meaning that the model had the ability of capturing the contribution and implies that the substandard loan does not have effect on (ROI) of Nigeria deposit money banks. This result conforms with the submission of Badra &Yasmin (2013) which revealed that an increase in Non- performing loan provision diminishes income and also mismatch maturity between assets and liability create liquidity risk for the bank which deteriorate banks overall credit rating including its performance.

In determining the impact of doubtful loan on return on investment (ROI) also from table 1, the P-value (Sig. value) is 0.956 which also greater than 0.05 level of significant which implies that the doubtful loan does not have effect on return on investment (ROI). The effect of lost risk asset on return on investment (ROI) while holding other factor constant showed, P- value (Sig. value) of 0.771 from table 1 and 4 which also greater than 0.05 level of significant. More so, since p- value (sig. value) of joint value of non- performing loan (NPL) that is substandard, doubtful and lost risk assets is 0.899 from table 2 which is greater that the level of significant 0.05 implies that it does not have significant effect on return on investment (ROI) of deposit money banks in Nigeria. The results are therefore in line with the submission of Olusanmi, Uwuigbe & Uwuigbe (2015) who maintained that increasing provision for bad debit limits the financial growth of banks as it deprives bank of the needed liquidity and their capability to fund other potentially viable businesses and make credit facilities available to individual and corporate bodies.

5.1 Conclusion

This paper examined the relationship between risk assets management and financial performance of deposit money banks in Nigeria which has International authorization as at 2018. Over a period of 10 years (2009-2018). The study found that, the provision of the non- performing loans (Sub Standard, doubtful and lost assets loan) does not often translate a positive financial performance of banks. Although effective risk management in financial institutions reduces the occurrence of systemic and economic breakdown but this does not guarantee increase in the returns on investment. More so, most DMBs could not grow or perform as expected due to high rate of non- performing loan.

5.2 Recommendations

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Based on the findings of the study, the following recommendations are very imperative for the sustainability of the DMBs performance in Nigeria.

All banks should institute sound risks assets and liquidity management system that will guarantee the earnings quality of their loans and advances, avoid non- performance loans and advances and enhance quality of their earnings which will have positive effect of dividend payout, retained earnings and growth in capital and assets of the banking institutions.

The DMBs should ensure guarantee of credits which would serve as a shield against credit loss of customer's fund. Thus worth of capital for bank serves as a shield against loss of depositor's funds. DMBs should be well capitalized even without the regulatory eyes of the authority. The regulatory authorities should ensure tight monitoring of the activities of the banks to avoid financial distress. This will also guarantee transparence in their financial reporting to the stakeholders in the banking industry,

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APPENDIX

Regression Analysis using Ratio (ROI)

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Descriptive Statistics

	Mean	Std. Deviation	N
Ratio	.175910	.0618462	10
Substandard	85876.10	27873.513	10
Doubtful	427990.70	142850.827	10
Lost	840911.80	310141.841	10

Correlations

		Ratio	Substandard	Doubtful	Lost
Pearson Correlation	Ratio	1.000	-.129	-.143	-.177
	Substandard	-.129	1.000	.998	.981
	Doubtful	-.143	.998	1.000	.991
	Lost	-.177	.981	.991	1.000
Sig. (1-tailed)	Ratio	.	.361	.346	.312
	Substandard	.361	.	.000	.000
	Doubtful	.346	.000	.	.000
	Lost	.312	.000	.000	.
N	Ratio	10	10	10	10
	Substandard	10	10	10	10
	Doubtful	10	10	10	10
	Lost	10	10	10	10

ANOVA[b]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	.003	3	.001	.191	.899[a]
	Residual	.031	6	.005		
	Total	.034	9			

a. Predictors: (Constant), Lost, Substandard, Doubtful

b. Dependent Variable: Ratio

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Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.173	.088		1.957	.098
	Substandard	1.167E-6	.000	.526	.042	.968
	Doubtful	4.303E-7	.000	.994	.057	.956
	Lost	-3.346E-7	.000	-1.678	-.304	.771

Regression Analysis using Average Percentage (ROI)

Descriptive Statistics

	Mean	Std. Deviation	N
AveragePER	2.5580	.87425	10
Substandard	85876.10	27873.513	10
Doubtful	427990.70	142850.827	10
Lost	840911.80	310141.841	10

Correlations

		Average PER	Substandard	Doubtful	Lost
Pearson Correlation	Average PER	1.000	-.084	-.099	-.134
	Substandard	-.084	1.000	.998	.981
	Doubtful	-.099	.998	1.000	.991
	Lost	-.134	.981	.991	1.000
Sig. (1-tailed)	Average PER	.	.409	.393	.356
	Substandard	.409	.	.000	.000
	Doubtful	.393	.000	.	.000
	Lost	.356	.000	.000	.

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ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	.548	3	.183	.173	.911[a]
	Residual	6.330	6	1.055		
	Total	6.879	9			

a. Predictors: (Constant), Lost, Substandard, Doubtful

b. Dependent Variable: Average PER

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	2.396	1.254		1.910	.105
	Substandard	3.286E-5	.000	1.048	.084	.936
	Doubtful	2.155E-6	.000	.352	.020	.984
	Lost	-4.260E-6	.000	-1.511	-.273	.794

Correlations

Control Variables			Substandard	Doubtful	Lost
Average PER	Substandard	Correlation	1.000	.998	.983
		Significance (2-tailed)	.	.000	.000
		df	0	7	7
	Doubtful	Correlation	.998	1.000	.991
		Significance (2-tailed)	.000	.	.000
		df	7	0	7
	Lost	Correlation	.983	.991	1.000
		Significance (2-tailed)	.000	.000	.
		df	7	7	0