Commercial Bank Risk Management and the Incident of Bad Debt in Nigeria

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Abstract
This study examined credit risk management and incidence of bad loans quoted commercial banks in Nigeria from 2013-2022. The objective is to investigate the existing relationship between credit risk management and the incidence of bad debt of the thirteen (13) quoted commercial banks in Nigeria. Panel data were collected from the publications of Central Banks of Nigerian (CBN) Statistical Bulletin and the Stock Exchange fact book. Bad debt was used as dependent variable while Credit Risk (CR), Default Risk (DFR), Interest Rate Risk (INTR) and Market Risk (MKTR) as independent variables. Multiple Linear regressions with econometrics view software package were used as data analysis techniques. R^2 Adjusted R^2, β coefficient, F-statistics, probability vale and Durbin Watson statistics was used to examine the impact on the dependent variable. The findings revealed that credit risk and default risk have positive and significant relationship while interest rate risk and market risk have negative and insignificant relationship with bad debt. The variables can explained 72.9% and 70.1% variation in the dependent variable while F-statistics revealed 26.05 (0.00000) probability. The research concludes that there is significant relationship between credit risk and the incidence of bad debt of the commercial banks. It therefore recommends that management should devise strategic and tactical measures of managing credit risk to reduce the incidence of bad debt in the commercial banks.

Keywords: *Commercial Bank, Risk Management, Incident of Bad Debt, Nigeria*

INTRODUCTION

The Nigerian banking industry has been faced with lots of debates and arguments about its rising and falling status, mergers and acquisitions, recapitalization and nationalization of banks, failed banks tribunal and so on since early 1980s. In June 2012, the former Finance Minister, Anthony Ani, predicted that the merged banks will eventually die (Daily Sun, June 18, 2012). The underpinning was a lasting solution to the crisis that seems to engulf the banking industry. Moreover, the banking industry has been known for its intermediation role in providing financial assistance needed in the economy. This role is normally carried out in many ways, for example, granting of loans and advances to customers, which constitute the major part of bank lending. Apart from loans and advances, there are other forms of banking or bank credits or bonds issued by banks for and on behalf of customers. Banks are merely custodians of the money they lend; hence interest must be paid to depositors and dividends to the investors.

In lending activity, bank is concerned with the safety of the loan since it represents a bulk of depositors' money and a source of income to the bank. The inability of the manager and credit personnel to establish special monitoring and supervision of these loans is a major attribute to frequent cases of bad debts and loan defaults. Historically, the incidence of banking sector failure resulting from insolvency has often been associated with massive accumulation of nonperforming loans Fofack, (2005). Failure to effectively reduce levels of nonperforming loans lead to bank failure, Samir and Kamra (2013) argued that non-performing loans have a deleterious impact on bank profits as they reduce interest income, and erode current profits and capital base through provisions. According to Nigeria Deposit Insurance Commission Report 2018 nonperforming loans accounted for about 75 per cent of the total loan portfolios of Nigerian banks, which was the reason for collapse of Nigerian banking sector crisis few years after consolidation.

Taking risk is core to the banks business and risks are inevitable consequences of being in business. The banks aim is therefore to achieve an appropriate balance between risk and return and maximize potential adverse effects on its performance (Abdulrasheed & Etudaiye-Muhtar, 2016). Credit risk management among commercial banks has been inadequate procedure to monitor and regulate risks. Credit risk management is an issue that needs to be stressed and investigated, especially in the banking industry where the needs for good risk management structure are extremely important. The Nigeria banking environment has undergone many regulatory and financial reforms like other African countries with the aim of improving profitability, efficiency and productivity (Lelissa, 2007). Nigeria commercial Banks remain with persistent challenge of reducing non-performing loans that is considered to have effects on profitability of Commercial Banks.

Credit creation is the main income generating activity of banks. The loan portfolio is typically the largest asset and the predominate source of revenue of banks Achou and Tenguh (2008). Bad loans impair the bank profitability and its long-term operation significantly Ahmed (2006). Increasing amount of bad loans in the credit portfolio of banks is antagonistic to banks in achieving their objectives and substantial volume of bad loans indicates the existence of financial fragility and cause of worry for banks management and regulatory authorities. Banks lend to individual, corporate organizations and government (Adebisi and Matthew, 2015). To estimate the financial viability of a portfolio, banks not only limit their analysis to project evaluation techniques alone, but also by evaluating all credit risks that could become threats to the overall performance of such a portfolio. Schall and Halley (2016) outlined the key indicators for loan analysis as capacity, collateral, capital, condition and character.
Indeed, the large number of bad debt is the main cause of bank failure. Banks are learning to review their risk portfolios using the criteria laid down by Basel II (2005). Among the revisions was a new requirement for banks that model specific risk to measure and hold capital against default risk that is incremental to any default risk captured in the bank's value at-risk model. The incremental default risk charge was incorporated into the trading book capital regime in response to the increasing amount of exposure in banks' trading books to credit-risk related and often illiquid products whose risk is not reflected in value-at-risk. Greenspan (2018) indicated that Basel's goal is to induce bankers to improve their risk management capability, including how the institutions price products, reserve for loss and control their operations (Rehm, 2002).

The problems of bad loans, if left unsolved, can greatly jeopardize the smooth functioning of banks through erosion of banks asset and reduction of income through accumulation of losses and increased provisions to compensate for these losses (Kunt & Detragiache, 1998). High level of bad loans in a banking system poses a systemic risk, inviting a panic run on deposits and sharply limiting financial intermediation, and subsequently investment and economic growth (Mohammed, 2012). While there are many studies on the effect of credit risk management, most of the studies focused on the effect of credit risk management on profitability of commercial banks. Walsh (2010) carried out an assessment of the credit management process of credit unions. The study found that credit unions are deficient in the credit control department. A study conducted by Ahlberg and Anderson (2012) on credit risk, Credit Assessment, Basel III, Small Business Finance in 95 small and large banks in Sweden found out that most banks had a well-developed credit process where building a mutual trust relationship with the customer is crucial. Chege (2010) concluded that credit risk management practices enhance profitability of the MFI. Kombo et al., (2010) asserted that strategic risk, credit risk and liquidity risk are the most frequent risks; whereas reputation and subsidy dependence risks occur at a very low incidence for Micro Finance Institutions (MFIs) located in Kisii area. Kiplimo and Kalio (2012) established that there was a strong relationship between client appraisals and loan performance in MFIs.

Mwithi (2012) found that there was a positive correlation between credit risk assessment and management of microfinance institutions in Nyeri County. Kisala (2014) in his study found a significant relationship between loan performance and credit risk management in MFIs in Nairobi, Kenya. Further, a study by Kipkemboi (2013) revealed a positive relationship between credit risk management practices and financial performance of MFIs. Njenga (2014) denoted a positive relationship between the variables under study in her determination on the effect of credit management practices on loan performance in deposit taking MFIs in Kenya. Otieno and Nyagol (2016) concluded the existence of a significant relationship between credit risk management and financial performance of MFBs. In Nigeria, Olawale (2014) studied how commercial banks in Nigeria performances are affected by credit risk during the period of 2008 to 2012. Kolapo, et al. (2012) also analyzed the influence of credit risk on performance of five banks in Nigeria by taking data from 2000-2010. The above studies focused on credit risk management and performance of banks without focus on the relationship between credit risk management and loan portfolio. From the above, this study wants to examine the effect of risk management and incidence of bad loans in Nigeria commercial banks.

LITERATURE REVIEW

Risk Management

Risk management is an integral part of monitoring and evaluating both liquid and illiquid assets and depositors liabilities of commercial banks to ensure the sustainability of the industry. It should be understood from the outset that risk cannot be managed in any commercial banks if the management did not set a goal in that direction (Adetoyese, 2017; Altunbas and Marques-Ibanez, 2016). Therefore, the first thing to be done is that there must be a written goal and drive from the owners and managers as to the need to manage risk on daily basis before they arise and/or as they become known. Furthermore, the management should put in place a risk management policy and procedures covering all areas of their microfinance business, including

those areas they commercial banks intend to venture into in the nearest future. The policy should be followed in managing risks as they are identified in the industry or in their own location, but not necessarily until it affect the business negatively.

Risk can never be managed without the employee, hence commercial banks management should be ready and willing to properly remunerate and motivate the workforce. The motivation should not be limited to financial reward alone, but it should include an open acknowledgement of the employee who works very well in the reduction of the firms risk without compromising the business ethics. From economic point of view, risk should be prioritized using a simple scale of preference in handling them (risk). Although, all form of risk should be managed, but the impact of these risks on commercial banks business differs considerably, hence these risks should be analyzed and given their appropriate scale (Awojobi, Amel and Norouzi, 2018). For example, ownership return risk must be given higher priority, if not; all other risk cannot be managed if the owners agitate for more return on their investment. Prioritization of risk will help the commercial banks management to know the level of resources that will be deployed to each risk and the likely effect on their business. If this is done, the owners and management will not be caught unaware when these risks are about to occur and/or increase. Sound internal control system (ICS) is another tool for risk management which has proved to be necessary and reliable in any financial institution (Bikker and Hu, 2015). The ICS should be able to monitor, review and evaluate all business processes on regular basis to be able to determine the effectiveness or otherwise of the processes in tracking risk. This process is very essential because risks are assumed out of the daily business operation as a result of mistake, incompetence, fraud and lack of concentration by one or more personnel that do not do one thing or the other during or after the business process. However, with sound ICS, some or all of the processes left undone can be detected early enough so that corrective measures can be taken on time before the risk is passed to the commercial banks.

Risk Diversification

Bank loan portfolio diversification strategies are based on the modern portfolio theory of Markowitz (1952), and largely followed by experts in financial institutions (Winton, 1999). According to the idiosyncratic risk hypothesis, diversification eliminates the specific (idiosyncratic) risk which enable banks to reduce their monitoring efforts and therefore lower their operating costs, which ceteris paribus should lead to higher cost efficiency (Rossi et al., 2009). Furthermore, the benefit of diversification stems from economies of scope across inter alia economic sectors and geographic areas (Laeven & Levine, 2007). Researchers like Hayden et al. (2006), Berger et al.(2010) and Tabak et al. (2011) all indicate that risk reduction and performance improvement are advantages of diversification whilst agency problems are common associated disadvantages.

Notwithstanding the aforementioned, Tabak et al. (2011) also indicates that diversification increases the risk in the Brazil and Italian banking sectors and reduces the performance of the banks in China, Germany and small European countries. This viewpoint, that diversification does not always reduce risks and improve returns, is also supported by other researchers like Winton (1999) and (Acharya, 2002). Some of the regulations governing central banks like maximum lending limits that apply to banks, promote diversification, whilst other regulations pertaining to aspects like branching, entry, and asset investments often encourage focus strategies (Berger et al., 2010). However, the existence of regulations that instigate

diversification may increase monitoring costs and reduce cost efficiency due to large numbers of individual customers and industries (Rossi et al., 2009). Furthermore, given that managers are risk averse, they may incur additional costs in their search for high quality loans to apply diversification. These factors may reduce diversification risk-return efficiency. A focus strategy opposed to a loan portfolio diversification strategy is effective when banks face information asymmetry (Acharya et al., 2002), Kamp et al. (2005),Berger et al. (2010), Tabak et al. (2011) and it serves as a contributing determinant of differences between banks in terms of their loan**.**

Diversification is a portfolio strategy designed to cut back risk by combining various investments. Diversification gain from shifting into non-interest income in bank's revenue and reduced volatility of bank profits (Stiroh, 2004). In investment planning and finance, diversification improved cost influence through lower risk from diversification if it occurred; it lowered the needed risk premiums on un-insured debt (Moon, 1996).Income supply diversification refers to banks shifting their financial gain sources into non- intercession financial gain generating activities as opposed to the normal inter-mediation financial gain generating activities.

Basel Compliance

The Basle Accord is a comprehensive documentation of international principles and regulations guiding the operations of banks in order to ensure soundness and stability (Kolapo *et al* 2015). Commenting on the features of Basel Accord, Chen and Pan (2016), upheld that, the new Basle Capital Accord explicitly places on banks, the onus to adopt sound internal credit risk management practices to assess their capital adequacy requirements. The Accord was introduced in 1988 in Switzerland, compliance with the accord means having the capacity to identify, track, collect and report on risk-related data in an integrated manner, with full auditability and transparency, thus creating the platform to improve the risk management processes of banks. The Basel Accord is international principles and regulations guiding the operations of banks to ensure soundness and stability. The Accord was introduced in 1988 in Switzerland. Compliance with the Accord means being able to identify, generate, track and report on risk-related data in an integrated manner, with full audit ability and transparency and creates the opportunity to improve the risk management processes of banks. The New Basel Capital Accord places explicitly the onus on banks to adopt sound internal credit risk management practices to assess their capital adequacy requirements (Chen and Pan, 2012).

In order to improve the flexibility of banks against the financial crisis in the global banking system, the Committee on Banking Regulations and Supervisory Practices later named as Basel Committee on Banking Supervision (BCBS) was formulated by the central bank governors of the G10 countries (Belgium, Canada, France, Germany, Italy, Japan, Netherlands, Sweden, Switzerland, the United Kingdom and the United States) after the breakdown of Bankhaus Herstatt in West Germany and Franklin National Bank in the United States in 1974 (Basel Committee, 2013). The Basel Committee has established an internationally accepted set of principles to cope with the various risks, officially known as the Basel Accords (Basel I, Basel II and Basel III). Initially, the Basel Accords were mainly designed for the G10 Countries. However, these guidelines have been planned in such a way that they might be applicable in the developed countries as well as the developing countries (Al-Tamimi, 2008). According to these principles, banks are required to maintain a prescribed level of capital against the operational and other financial risks. Van Rixtel, Alexopoulou and Harada (2004) proposed

that the implementation of the Basel Accords might have offered a positive impact on the risk management and amplify the financial solidity by providing risk-sensitive methodologies.

Credit Monitoring

Every bank has to develop and implement comprehensive procedures and Information systems to follow up the condition of individual credits. An effective loan monitoring system according to Odufuye (2007) will include measures to: Monitor compliance with established agreements, Assess, where applicable, collateral coverage, relative to creditor's current condition, Identify contractual payment delinquencies and classify potential credits on a timely basis, and, Direct actions at solving problems promptly for remedial management. Loan monitoring which is the work of the relationship manager in most cases is not a choice, but an imperative for effective and efficient credit administration in the banking sector. Problem loans can easily be spotted out. The banker's experience, knowledge of the customer's business and above all, faith in the customer can be a guide in taking a decision as to how far the customer can be supported before declaring the loan as bad. In some occasions, the customer may be in need of more support. Any or a combination of the following strategies can then be employed:

(1) Alteration or waiver of some of the terms and conditions of loan agreement in a way not to tamper with the bank's interest. However, this must be communicated to the credit department.

(2) Issuance of additional collateral security, if available.

(3) Granting of additional funds, if borrower's circumstances and analysis require the need.

(4) Extension of loan repayment period supported by fresh cash flow statement. Regardless of genuine efforts of parties to a loan, default can still occur. The recovery of loans should be a prerogative of the Recovery Unit to ensure that appropriate recovery strategies are implemented. Financial statements like the balance sheet and income statement do not covey relevant financial information necessary for any economic decision, as their figures are in their absolute terms. But when items in these statements are related to each other (inter or intra), a more relevant financial information is generated for an objective and reliable investments decision. This is where ratio comes in. Ratio is a tool used in generating financial information for an informed business decision and it is the relationship between two items expressed in Naira & Kobo in the financial statements. It is the relation that one item bears on another. Pandey (2005) in Okereke (2003) defined ratio as the process of identifying the financial strengths and weaknesses of the firm by properly establishing relationships between the items in the Balance Sheet and the Profit and Loss Account. This implies that different relationships are determined depending on the purpose for which the user wants. That is why the usefulness of ratios is limited. It requires the user or analyst to select the right figures or group of figures from the financial statements for proper relationship depending on the need at any given time. For the lending banker, he may be interested in liquidity, profitability, management, activity or leverage of the borrower. Hence, we have liquidity ratios, profitability ratios, activity ratios, leverage ratios, etc. Each of these ratios analyses the components of the profit and loss account or/and the balance sheet.

Internal Credit Policy

The management of any loan starts with credit policy, the formulation of which is the responsibility of which is the bank board of directors and management. It is the base for

determining what type of credit to grant to customers. Nwankwo (1980) defines credit policy as a blue print containing management guidelines for use by line officer of a bank in the handling of credit applications. Its objective is to provide corporate direction through a standardized procedure, derived from operational interest of the bank, in satisfying the customer credit need but with full cognizance of the prevented monetary and fiscal policy guidelines of the government. Adekanye (2010) however identifies three basic types of credit policy. They are the restrictive credit policy, moderate credit policy and liberal credit policy. A restrictive credit policy is adopted by a bank that has no plan to grow at a rate that is more than minimal. Such a bank is not willing to take any risk more than minor one and prefer to do business with customer whose paying habit almost never varies within terms. Moderate credit policy is a mixture of restrictive and liberal policy approaches to credit. It tends to match receivable to provide adequate cash flow, while a liberal policy is a high risk policy with the probability of heavy loss of receivable the danger of such bank survival can be real because they are usually prone to undercapitalization and occasionally liquidity problem. Therefore, to minimize risks, enhance lending and maintain standard, the loan policy should specify the quantity of loan to be made the type of securities to be accepted and limits for the different types of loan.

Credit Appraisal

Pursuance of all alternatives to maximize recovery, including placing customers into receivership or liquidation as may be appropriate. Ensuring that adequate and timely loan loss provisions are made based on actual and expected losses and Regular review of deteriorating loans. It should be emphasized that after a loan has been classified as substandard, it should be assigned to a specific Account Manager in the Recovery Unit. The Account Manager serves as the primary customer contact during the recovery process. A number of methods exist for recovering debts owed by banks. Some of these, according to Ademu (2009) are:

(1) Appeals to debtors
(2) Threats and blackmail
(3) Legal action
(4) Use of debt-factoring companies
(5) Invoice discounting
(6) Seizure and sale of collaterals
(7) Use of Nigerian Deposit Insurance Corporation's services

Financial analysis is a quantitative exposition of the strengths and weaknesses of the operations of business enterprise Okereke, (2003). This means that the performance (good or bad) of the enterprise is exposed to the user(s) in quantitative terms upon which an interpretation is carried out and informed decision taken. Financial analysis is objective and scientific since it is based on facts and standards. It is multidimensional. The performance of a company in a specific area say, profitability may be of interest to one user but may not be of interest to another. Thus, financial analysis varies according to the specific interests and needs of the users. For instance, bankers, and other creditors, is highly interested in the liquidity and profitability of the borrower(s) while investors in shares of a company are interested in present and expected future earnings and the stability of these earnings in relation to other companies in the same industry. Management of the company has a different interest from government, etc. Interpretation of financial statements starts from where the analysis stopped. It is a deliberate attempt to explain the result of an analysis in such a way that information content is effectively communicated to

the user. It explains the broad trend of the business. While analysis is in mathematical form, interpretation is in qualitative.

Bad Loans

A debt is said to be bad when there is no hope of recovering the amount from the debtor. As soon as a debt is recognized to de bad, it should be transferred from the debtor's account to the debit of an account called Non-performing loans Account (Inanga et al, 2001). In banks, a bad debt is normally written off as a loss and classified as an expense because the debt owed the bank is unable to be collected and all reasonable efforts have been exhausted to collect the amount owed. Before a debt can become bad it will be doubted by the bank of recovery. After the bank is sure that the debt is irrecoverable, then it becomes a bad debt. Kent (1960) agreed that an account does not become bad overnight at it must have shown some red signs for some time. He pointed out that it is the banker's duty to show considerable interest in such accounts because large volume of credit is likely going to give rise to a large account of non-performing loans if the credit is not well analyzed and managed. Therefore a credit manager should focus on desirable loan. According Holden (1995), a loan is desirable when it falls within the operation area of the bank. A profitable loan or lending is the one that will be repaid and would not be detrimental to the growth and development of the bank in particular but which would also promote the economic growth and development of the community in general. Generally, loan is desirable and suitable only if it is in accordance with the government directive and bank policy. This was buttressed by Nwankwo (1991) who stated that effective lending is that which maximizes profitability, liquidity and security requirements of the banker and the development of the economy.

One major factor considered by most of the financial institutions in Nigeria in making loan facility accessible to the borrowers is the ability to honour the loan obligation. To lessen the risks of loan default, most banks try as much as possible to ensure that the debts are well secured. Even though the facility are normally given based on the ability of the borrower to pay back the facility, and not on the ability to secure its with enough security in the event of default, it would be commendable if facility granted out to all clients and personnel of the banks are well secured. This situation will ensure that the various financial institutions could utilize the property secured for the facility in the events of defaults of the loan to lessen the impact of the financial loss (Banking Act, 2004). Therefore banks ought to take into consideration the value of the property which is being used as collateral in acquiring the loan to establish the level of provision to be used. The regulations of the Central Bank of Nigeria shows that certain amount of provisions are made on the total arrears of all current advances, and the total net unsecured balance of all other categories (Onoh, 2002).

i. Licensed banks are mandated to make accurate provision for perceived loses based on the credit portfolio classification system prescribe on paragraph 2 in order to reflect true financial condition. Two types of provision (that is specified and general) are considered adequate to achieve the objective. Specific provisions are made in the basis of perceived risk of default on specific credit facilities while general provision are made on recognition of the fact that even performing credit facilities harbors same risk of loss no matter how small. Consequently, all licensed banks shall be required to make specific provision for non-performing credit as specified below:
ii. For facilities classified as sub-standard, doubtful, or lost

iii. Interest overdue by more than 90 days should be suspended and recognized on the basis only
iv. Principal repayment that are overdue by more than 90 days should be fully provided for and recognized on cash basis only
v. For principal payments not yet due in non-performing credit facilities, provision should be made as follows:-
vi. Sub-standard credit facilities: 10% of the outstanding balances
vii. Doubtful credit facilities: 50% of the outstanding balance
viii. Lost credit facilities: 100% of the outstanding balance

For prudential purpose, provisioning as prescribed section 3.1 of BOFIA Act section 12 should only take cognizance of realizable tangible security (with perfected legal title) in course of collection or realization, consequently, collateral value should be recognized six months following outstanding un-provided principle should not exceed 50% of the estimated net realizable value of the collateral security.

i. For credit exposure where the principle payment is in arrears by more than one year, there should be an outstanding un-provided portion to the credit facility irrespective of the estimated net realized value of the security held.
ii. For credit exposure secured by a leased change or by an unprotected or equitable change over tangible security, it should be treated as an unsecured credit and no account should be taken to such security held in determining the provision for loss to be made Osiegbu (2005).

General Provision

Each bank that is licensed is mandated to make general provision of at least 1% of risk assets not specifically provided for.

Credit Portfolio Disclosure Requirement

i. Each licensed banks is required to provide in its audited financial statement, an analysis of its credit portfolio into performing and non-performing as defined in paragraphs 2.2 and 2.4 of prudential guideline for licensed banks.
ii. The amount of provision for deterioration in credit quality (that is, losses) should be separated between principle and interest.
iii. A maturity profile of credit facilities based on contracted repayment programme should be provided along with the maturity profile of deposit liabilities in the financial statement.

Interest Accrual

It is the responsibility of bank management to recognize revenues when they are earned or realized and make provision for all losses as soon as they can be reasonably estimated. However experience revealed a wide density, amongst licensed banks on income recognition. When a few banks cease accruing interest on nonperforming credit facilities after three months, some after six months or one year and some do not like the need to suspend interest in such facilities. In other to ensure the reliability to publish operating results, the following criteria should be adopted by all bank licensed for the treatment of interest on non-performing credit facilities:

i. All categories of non-performing credit facilities should automatically be placed in un-accrual status that is, interest thereon should not be recognized as income.
ii. All interest previously accrued and uncollected but taken into revenue should be reversed and credited into suspense account specifically created for this purpose which should be called "unless paid in cash by the borrower. Future interest changes should also be credited into same account until such facilities begin to perform.
iii. Once the facilities begin to perform, interest previously suspended and provision previously made against principal debts should be recognized on cash basis a; lf Before a "non-performing facilities" can be reclassified as "performing" unpaid interest outstanding should not exceed 90 days.

Sub -Standard

This type of loan advance shows a distinct loan weakness that endangers the insolvency of the debt incurred. It normally include loans granted to debtors who are having cash flow element that is not enough in meeting the current maturing debt, loans to borrowers which are significantly undercapitalized, and loans to borrowers lacking sufficient working capital to meet their operating needs. Substandard loan advances are not secured by the current sound worth and paying capacity of the client. NPLs and receivables which are more or up to ninety days overdue but not up to the 180 days unpaid are also substandard loan. Thus loan advances become unpaid when the principal or interest component is due and unpaid for 30 days or more (Onoh, 2002).The following objective and subjective criteria should be used to identify sub-standard credit facilities.

i. Objective criteria: facilities as defined in paragraph of BOFIA (b) on which unpaid principal and/or interest remain outstanding for more than 90 days but less than 180 days.
ii. Subjective criteria: credit facilities which display well defined weakness which could affect the ability of borrowers to repay such as inadequate cash flow to serve debt under capitalization or insufficient working capital absence of adequate financial information or collateral documentations, irregular payment of principal and or interest, and inactive accounts, where withdrawal exceed payments or where repayments can hardly cover interest changes. This type of loan advances indicates all the weakness features shown in the substandard loan category with other added features that the loan are not well-secured and the limitation making the liquidation in full on the basis of the facts currently existing together with the conditionality, values which could be highly doubtful. Even though the probability of loss is very high, the existence of certain strong indicative factors may work to the advantage and strengthening of the repayment, deferring its estimated loss categorization until more exact status determined (Onoh, 2002). NPLs and receivables having 180 days or more unpaid period but not up to the 360 days unpaid period are classified as doubtful loan advance. The following objective and subjective criteria should be used to identify doubtful credit facilities.

i. Objective criteria: Facilities on which unpaid principal and/or interest remain outstanding for at least 180 days but less than 360 days and are nor legal titled to leased assets or perfected realizable collateral in the process of collection or realization.
ii. Subjective criteria: facilities which, in addition to the less strength associated with sub-standard credit facilities – reflect that full payment of the debt is not certain or that realizable collateral value will be insufficient to cover banks' exposure.

Loss are said to be uncollectible and of such little value that their continuation as recoverable advances is not warranted. However, this does not indicates that there is no recovery value of the loan advance, but the practicability to defer writing off this type of loan even though partial retrieval may be hampered in the future. This type of loan advance includes liquidated or insolvent companies with bad current asset and cash flow. Financial institutions should however not keep this loan advances within their records no matter the long term effort made in recouping the advances (Onoh, 2002). Losses should be taken in the period in which they surface as uncollectible. The NPLs and the receivables having the 365 days unpaid period or more are all termed as a loss.

The following objective and subjective criteria should be sued to identify lost credit facilities:

Objective criteria: Facilities on which unpaid principal and/or interest remain outstanding for 360 days or more and not secured by legal title to has assets a perfected realized collateral in the cause of collection or realization.

Subjective criteria: Facilities which in addition to the weakness associated with doubtful credit facilities, are considered uncollectible and are of such little reduce that continuation as a bankable assets is unrealistic such as facilities that have been abandoned, facilities secured with unremarkable and unrealizable securities and facilities extend to judgment debtor with no means or for closable collateral to settle debts. Banks are required to adopt the criteria specific in paragraphs in PGBL classify them credit portfolios in true accounting value of their credit facilities. Licensed banks should note that the central bank of Nigeria reserves the right to object to the classification of any credit facilities and to prescribe the classification it considers appropriate for such credit facilities.

Non- performing loans and Banking System

Non-performing loans can be defined as default loans, which banks are unable to profit from. Non-performing loans are loans that have not expired, but it is uncertain whether the borrowers would be to repay their debts. Customers of banks in Nigeria consist of business people, civil servants, contractors, petty traders, government at large. Each in one way or another contributes to the poor performance of loans in the banking system. Goldstein and Turner (1996) stated " the accumulation of NPLs is generally attributable to a number of factors, including economic downturn, macroeconomic volatility, high interest rate, excessive reliance on overly high-priced inter-bank borrowings, insider borrowing and moral hazard. Civil servants who borrowed facilities from banks, when their salaries are delayed or denied for a specific period, their loans will stop performing and the consequence is rising non-performing loans. The non-payment of such gratuity and due pensions has frequently resulted in non-performing loans and non- performing loans. Many contractors borrowed from the banks to execute their projects, some of these projects are often abandoned due to none or poor mobilizations from the government or individual who own the projects; the loans borrowed have also been classified as non- performing loans adding to the existing bad loans. Government who also borrowed from banks for some projects but due to the poor priority of projects, most of these projects are often abandoned and repayment of such borrowed amount often became difficult.

The NDIC 1998 Report

In their 1998 Report, the Nigeria Deposit Insurance Corporation (NDIC) had shown clearly that both distressed and potentially distressed banks controlled 4.9 per cent of the total assets of the Nigerian banking industry. Their total deposits portfolio was 4.4 per cent of the industry, while loans and advances, including leases constituted 7.4 per cent. However, the non-performing loans, advances and leases accounted for 29.5 per cent of the industry total. In the distressed banks the proportion of non-performing loans and leases was 7.9 per cent, while it was 60.2 percent in the potentially distressed banks. The high proportion of classified loans and leases in distressed banks can be distinguished from the 19.5 per cent classified loan portfolio recorded in the entire banking industry.

Another interesting part of the NDIC Report is that the distressed and potentially distressed banks had a recapitalisation requirement of N16.2 billion in 1998, with the NDIC level of risk exposure fixed at N9.3 billion. The NDIC level of risk exposure is determined by the forced market value of total assets of distressed banks plus recoverable loans and advances minus total deposits and other liabilities. In the present circumstance of increasing loan crisis and deteriorating bank liquidity, the NDIC level of risk exposure is likely to increase, with the new capital adequacy requirement of N2 billion for each bank by the end of 2004.

Although average liquidity ratios were 421.3 per cent for distressed banks and 107.4 per cent for potentially distressed banks, the average liquidity of the entire banking industry declined by 7.7 percent. This has two major implications for the banking industry. First, most financially troubled banks held most of their liquid assets in cash and bank balances, and with an expending portfolio for non-performing loans and advances, they depleted their core deposit base, thus necessitating distress borrowing from money market sources. This could have culminated in their inability to fund sudden deposit withdrawals. Second the deteriorating liquidity profile of banks generally could have been due to unfriendly monetary policy stance of the Central Bank of Nigeria (CBN) through the issuance of stabilisation securities, which are non-discountable.

With the elimination of the 26 terminally distressed banks from the banking system in January, 1998, total assets of distressed banks decreased by almost 47 per cent, from N56.3 billion in 1997 to N29.9 billion in 1998. This also reflected a drop in the ratio of distressed banks' assets to total assets of the banking industry from about 9.0 per cent to 4.0 per cent. The Report also shows that the total loans, advances and leases of distressed banks also declined from N47.5 billion in 1997 to N21.2 billion in 1998. Non- performing loans and leases also dropped by more than one-half representing about 27 per cent of total non-performing loans of the banking industry, down from N35.9 billion of 51.9 per cent in 1997.

NDIC 2003 Report

The NDIC (2003) Report indicates that a total of N9.38 billion fraud cases were recorded in 2003 in the Nigerian banking industry. However, about N8.6 billion representing 92 per cent of the fraud cases were recorded in just 10 of the banks. Also, the 2003 figures represent a decrease from the N12.919 billion recorded in 2002. The Report also indicates that in 2003 NDIC paid the sum of N5.284 billion or 53 per cent as liquidation dividends out of the total declared dividend of N9.9 billion for 32 out of the 34 banks in liquidation as at December 31,

2003. The figure compared favourably with the dividend payment of N3.8 billion and the declared dividend of N7.479 billion, respectively for the year 2002. In raising an alarm over banks' insurance cover, the NDIC 2003 Report notes that only 49 operators could survive crisis in the industry, resulting from insider frauds and forgeries in the system. Following the prevalent distress syndrome in the industry in the late 1980s, licensed banks which insure their deposits with NDIC Act (1988) to provide insurance bond coverage and renew it annually. The required minimum insurance coverage for each bank is fixed at 15 per cent of its paid-up capital at the end of each year. However, the Report notes that the rate of compliance had declined both in absolute figures and percentage terms from the rate in 2002.

Analysis of the Report shows that 56 insured banks representing 63 per cent of the total operators compiled with the requirements of fidelity insurance coverage indicating a significant drop from the 74 or 82.2 per cent that complied in 2002. Further analysis of the returns to the Corporation, however, showed that only 49 banks of the 89 banks in operation had adequate insurance coverage as against the 55 that had it in 2002.

Modern Portfolio Theory

Markowitz (1952) Modern portfolio theory (MPT) is one of the most important and powerful economic theories dealing with finance and investment. Modern portfolio theory measures the benefits of diversification, known as not putting all your eggs in one basket. Modern portfolio theory (MPT) is an investment theory which tries to explain how investors could maximize their returns and minimize their risks by diversifying in different assets. Tobin (1958) expanded the theory of Markowitz's by adding the analysis of risk free assets which made it possible to affect portfolios on the efficient frontier. Markowitz (1952) and Tobin (1958) showed that it was possible to identify the composition of an optimal portfolio of risky securities, given forecasts of future returns and an appropriate covariance matrix of share returns.

The portfolio theory approach is the most relevant and plays an important role in bank performance studies (Atemnkeng and Nzongang, 2006). According to the Portfolio balance model of asset diversification, the optimum holding of each asset in a wealth holder's portfolio is a function of policy decisions determined by a number of factors such as the vector of rates of return on all assets held in the portfolio, a vector of risks associated with the ownership of each financial assets and the size of the portfolio. It implies portfolio diversification and the desired portfolio composition of commercial banks are results of decisions taken by the bank management.

The ability to obtain maximum profits depends on the feasible set of assets and liabilities determined by the management and the unit costs incurred by the bank for producing each component of assets (Atemnkeng and Nzongang, 2006). Commercial Banks should consider diversifying investments portfolio to minimize risk of credit takers defaulting in loans repayments and causing non-performing loans portfolios that affects profitability. The concept of revenue diversifications follows the concept of portfolio theory which states that individuals can reduce firm-specific risk by diversifying their portfolios. The proponents of activity diversification or product mix argue that diversification provides a stable and less volatile income, economies of scope and scale, and the ability to leverage managerial efficiency across products and for the case of commercial banks, reduce non-performing Loans and increase Return on Assets which is a measure of profitability.

Risk Management Theory

David (1997) developed this theory aiming to study why risk management was required, and outlines theoretical underpinning under contemporary bank risk management; its emphasis is on market and credit risks. The theory indicates that market and credit risks would have either direct or indirect effect on banks survival (Eichhorn, 2004). One would expect the credit risk indicators to influence banks profitability if there is no effective and efficient credit risk management (Ngugi, 2001). This theory identifies major source of value loss as Market risk being a change in net value of asset due to change in interest rate, exchange rate, equity and commodity prices (Wu & Olson, 2010). Regulators are concerned with overall risk and have minimum concern with individual risk of portfolio components as managers are capable of window dressing the bank position. The need for total risk show that measurement of risk cannot be centralized as risk of a portfolio is not just a sum of component as per Markowitz theory. This implies that portfolio risk must be driven by portfolio return which is invariant to changes in portfolio composition (Beverly, 2015). Regulatory requirements and alternative choices require managers to consider risk return trade off, Measurement of risk is costly thus bank managers compromise between precision and cost (Sovan, 2009).

Empirical Review

Siyanbola and Adebayo (2021) examined the effect of credit risk management on the financial sustainability of listed deposit money banks in Nigeria. The study adopted an Ex-post facto research design. The population consisted of all 14 listed Deposit Money Banks (DMBs) in Nigeria as at December 31, 2019 out of which a sample of 12 banks were purposively selected based mainly on availability of complete data for ten years period (2010 – 2019). Secondary data extracted from the financial statements were analyzed using descriptive and inferential analyses. The population of 14 banks accounted for 53.85% of banks in operation. The study found that credit risk management (CRM) proxied by Loan Deposit Ratio (LDR), Non-performing Loan (NPL) and Assets Growth Percentage (AGP) had a positive significant effect on CAR of listed DMBs in Nigeria (Adj. R2 = 0.0969, F (3,105) = 13.66; P < 0.05). Bank Size (BS) significantly moderated the relationship between the CRM and CAR of listed DMBs in Nigeria (ΔAdj. R2 = 0.0814, ΔF (3,116) = 12.19; P < 0.05). However, CRM had no significant effect on ROCE of listed DMBs in Nigeria (Ad R2 = 0.1873, F (3,105) = 2.73; P > 0.05). BS significantly modified the relationship between the CRM and ROCE positively (ΔAdj. R^2 = 0.1779, ΔF (3,116) = 22.88; P < 0.05). Overall, CRM positively and significantly affected the financial sustainability of listed DMBs in Nigeria. The study concluded that credit risk management has a positive significant effect on financial sustainability of listed DMBs in Nigeria. This study recommended that regulators should adopt a risk based approach in determining capital adequacy requirements and give special attention to banks that are too big to fail while DMBs' managements should ensure that all the board members and executive managements amongst other stakeholders are trained to appreciate the functions and responsibilities of credit risk management.

Anetoh, Nwadialor, Anetoh and Okeke (2021) adopted an ex-post facto research design. The target population of the study was all the deposit money banks listed in Nigeria Stock Exchange. The study used secondary sources of data from Central Bank of Nigeria as well as from annual reports and financial statement of accounts of deposit money banks under review from 2010-2019. The Structural Equation Modeling was used to test the formulated hypotheses

at 5% level of significance. The findings showed that credit risk had a significant but negative effect on firm value of deposit money banks in Nigeria. Operational risk had a significant and positive effect on firm value of deposit money banks in Nigeria. The study recommends that banks should ensure that their credit exposures are adequately secured through proper scrutiny of loan processing in order to identify viable projects so as to reduce loan defaults by bank customers. They should continue to employ qualified and competent workers who are experts in banking professionalism as well as ICT competence in order to reduce unsound banking practices.

Ramazan and Gulden (2019) analyzed the impact of credit risk on banks performance. Data was collected from financial report of 26(Twenty-six) commercial banks operating in Turkey between 2005-2017. Three panels' data are considered respectively state-owned banks, privately-owned banks and foreign banks in order to compare banks according to their ownership structure. Return on Asset (ROA) and Return on Equity (ROE) were used as surrogate for financial performance pointers while Non-Performing Loans (NPLs) was used as credit risk pointer. The estimation results showed that there is a negative relationship between credit risk and ROA as well as between credit risk and ROE. Their findings showed that there is a relationship between credit risk management and profitability of Turkish deposit banks from the period of 2005 to 2017. The study recommends that banks should focus more on credit risk management, especially on the control and monitoring of nonperforming loans. Also, managers should focus more on modern credit risk management techniques.

Gadzo, Kportorgbi and Gatsi (2019) assessed the effect of credit and operational risk on the financial performance of universal banks in the context of the structural equation model (SEM). Data were collected from all the 24 universal banks in Ghana using the PLSSEM, the results showed that credit risk influences financial performance negatively contrary to the empirical study but in line with the information asymmetry tenant of the lemon theory. It was also found that operational risk influences the financial performance of the universal banks in Ghana negatively. Furthermore, the study indicated that bank specific variables measured by (asset quality, bank leverage, cost to income ratio and liquidity) significantly influence credit risk, operational risk as well as the financial performance of the universal banks positively. The study recommends that banks be encouraged to cut-down their lending rates in other to decrease credit risk and boost profitability. Regarding operational risk, banks should reduce leverage and have their portfolio more concentrated on liquid investment income so as to boost profitability.

Bishnu (2019) investigated the effect of credit risk on the financial performance of commercial banks in Nepal. The balance panel data of ten commercial banks with 160 observations for the period of 2001 to 2016 have been used for the analysis. The study employed capital adequacy ratio (CAR), non-performing loan ratio (NPLR), management quality ratio (MQR), credit to deposit ratio (CDR) and risk sensitivity (RS) as proxies for credit risk while ROA was used as proxy for financial performance. The regression results revealed that capital adequacy ratio (CAR), non-performing loan ratio (NPLR), and management quality ratio (MQR) have significant relationship with the financial performance (ROA) of the commercial banks in Nepal. Similarly, credit to deposit ratio (CDR) and risk sensitivity (RS) has no significant impact on the financial performance of the commercial banks in Nepal.

Nwude and Okeke (2018) investigated the impact of credit risk management on the performance of deposit money banks in Nigeria using five banks that had highest asset base. Ex-post facto research design was adopted using dataset for the period 2000–2014 collated from the annual reports and financial statement of the selected deposit money banks. Three

hypotheses were proposed and tested using ordinary least square regression model. The findings reveal that credit risk management had a positive and significant impact on total loans and advances, the return on asset and return on equity of the deposit money banks. The study recommended that bank managers need to put more efforts to control the non-performing loan by critically evaluating borrowers' ability to pay back.

Hyun and Yo (2017) examined the relationship between the default risk, as measured by the Altman K-Score and firm value as measured by the Return on Assets of shipping and logistics firms in Korea and compared the impact of default risk on firm value between good financial health firms and poor financial health firms. The period covered span from 2003-2012. The study employed panel data analysis model to analysis data collected from financial statement and accounts of 281 Korean shipping and logistic firm. As the trends of K-Scores over a ten-year period, shipping and logistics firms in Korea register weak-to-moderate financial healthy rage. The study found out that Altman K-Score is significantly linked with firm value and also higher performing firms as measured by the ROA exhibit higher financial health as measured by K-Score. The study proposes that systematic financial alert system of Korean shipping and logistics industry should be required to decrease default risk reflecting significantly on Korean economy.

Oluwaseyi, Yusoff and Md. Aminul (2018) investigated on Operational Risk in Commercial Banks: Empirical Evidence from Nigeria. Data was obtained from audited financial reports of selected sixteen (16) commercial banks over the period of 2009 to 2015 making up to 112 observations. Panel data approach was employed in the study for the analytical model which run Hausman test for random or fixed effect choice and hypothesis testing. Firm performance was measured by net interest margin while operational risk was proxied using cost to income and total operating expenses to total assets ratio. The controlled variables used in this study were bank size and GDP growth rate. The study found that bank efficiency ratio had a negative significant effect on firm performance, suggesting that the lower the cost to income ratio, the better the bank performance in terms of net interest margin. Operating expenses ratio has a positive significant effect on firm performance. The study suggests that further study can explore the effects of operational risks on banks efficiency using wider time-frame.

Muriithi and Waweru (2017) employed the qualitative research design and ordered logistic model to explore the effect of operational risk on the firm value of commercial banks in Kenya using data obtained from 43(forty-three) registered commercial banks in Kenya in the month of November 2015. The study measured operational risk using internal and external fraud (IEF), clients, products and business practices (CPBP), business disruption and system failure and execution (BDSF) delivery and process management (EDPM). Results revealed that operational risk has an inverse relationship with firm value. Muriithi and Muigai (2017) investigated the effect of operational risk on the firm value of commercial banks in Kenya covering a period of 10(ten) years from 2005 to 2014 for all the 43 registered commercial banks in Kenya. Operational risk was measured by cost income ratio while firm value was measured by Tobin Q. Panel data techniques of random effects estimation and generalized method of moments (GMM) were used to analysis the data collect from accounts/financial statement of the banks under review. Findings indicate that cost income is negatively associated with bank value both in the long run and short run.

METHODOLOGY

The study employed the ex-post factor research design which entails the utilization of historical/past data to forecast future trends employing econometric or analytical techniques. This form of research design is reliable as it provides objective estimates of study variable relationships free from subjective errors. Thus, the Ex-Post Facto Design will be considered to be the right research design for the study. This is because the phenomena under scrutiny have already happened and the variables are obtained and analysed "as it is" and not subject to control or interference from the researcher. The use of ex-post facto design enables researchers to analyze past trends and explain the relationship between the dependent and independent variables. The population is further pruned to a sample of 13 banks as the study is focused on Banks that are listed on the floors of the Nigeria Stock Exchange. The rationale for the sample size the relative ease in getting relevant and reliable data for the study from the annual reports submitted to the exchange. The research used secondary data. Secondary data were collected from annual reports and various databases of the banks for financial statement for the period 2013 to 2022. The method of data analysis to be used in this study was the panel data multiple linear regressions using Ordinary Least Square (OLS) method. This approach, which is a quantitative technique, includes tables and the test of the hypotheses formulated by using ordinary least square regression analysis at 5% level of significance. To arrive at a result that will not lead to spurious regressions, the study will test for stationarity at different levels in the variables making up the model. Other tests that will be carried out on the model include test of Normality, Durbin Watson Test of serial correlation, test of heteroskedasticity and test of model specification so as to achieve the objectives of our study as well as answer the research question and hypotheses. Moreover, in order to undertake a statistical evaluation of our analytical model, so as to determine the reliability of the results obtained and the coefficient of correlation (r) of the regression, the coefficient of determination (r^2), the student T-test and F-test will be employed.

Model Specification

$$BL = f(CR, DFR, INTR, MKTR) \quad 1$$

$$BL = \alpha_0 + \beta_1 CR + \beta_2 DFR + \beta_3 INTR + \beta_3 MKTR + \mu \quad 2$$

Where:

BL = Bad debt proxy by non-performing loans of Commercial Banks in Nigeria
CR = Credit Risk Proxy by the Ratio of Non-Performing Loans to Total Loans
DFR = Default Risk Proxy by Loan Loss Provision to Total Loans
INTR = Interest Rate Risk Proxy by Change in Interest Rate to changes in Rate of Money Supply
MKTR = Market Risk Proxy by Total Loans Loss to Gross Domestic Product
ε_i = Stochastic Error Term

Hausman Test

The Hausman test YairMundlak (1978) is the most commonly used method for evaluating fixed and random effects. If variables are statistically correlated, then the fixed-effects estimation is consistent and efficient, whereas the random- effects estimation is inconsistent, and the fixed-effects model should be adopted. Conversely, if the variables are statistically uncorrelated, then the random-effects estimation is consistent and efficient, whereas the fixed-effects estimation is consistent but inefficient, and the random-effects model should be adopted.

ANALYSIS OF RESULTS AND DISCUSSION OF FINDINGS

Table 1: Estimated Regression Results

Variable	Coefficient	Std. Error	t-Statistic	Prob.
CR	126.1485	42.28262	2.983459	0.0057
DFR	1.814536	1.027397	1.766148	0.0919
INTR	-14.19227	17.41702	-0.814851	0.4218
MKTR	-10.86906	78.20259	-0.138986	0.8904
C	1059645.	1551140.	0.683140	0.4999

Effects Specification

Cross-section fixed (dummy variables)

R-squared	0.729370	Mean dependent var	8587320.
Adjusted R-squared	0.701373	S.D. dependent var	11754569
S.E. of regression	6423490.	Akaike info criterion	34.30203
Sum squared resid	1.20E+15	Schwarz criterion	34.48343
Log likelihood	-561.9836	Hannan-Quinn criter.	34.36307
F-statistic	26.05239	Durbin-Watson stat	1.673601
Prob(F-statistic)	0.000000		

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LS BL CR DFR INTR MKTR C

Estimation Equation:

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BL= C(1) + C(2)*CR + C(3)*DFR + C(4)*INTR+ C(5)*MKTR

Substituted Coefficients:

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BL = 1059645. + 126.1485*CR +1.814536*DFR -14.19227*INTR -10.86906*MKTR

Source: Extracted by Researcher from E-View 9.0 (2023)

In determining the effect of the independent variables risk management on the incidence of bad debt of the quoted commercial banks , three functional forms of estimation techniques were used; the pooled ordinary least squares (OLS). The fixed effect model (FEM) and the Random Effect Models Estimation. The study found that risk diversification, Basel compliance have negative effect on bad debt while credit monitoring.

The results of the estimated regression are that 72.9% of R^2 and 70.1% of adjusted R^2 variation in the bad debt of Nigerian quoted commercial banks can be explained by the predictor or the explanatory variables in the study while the remaining 28.1% and 29.9% can be explained by factors not captured in the model known as stochastic error. The regression intercept is positive with the coefficient of 1059545. This indicates the dependent variable at constant. The F-statistics of 26.05239 at the probability of 0.00000 proved that significance of the model while the Durbin Watson (D.W) statistics of 1.673601 showed the presence of autocorrelation. However, the β coefficient of the variables proved that credit risk has positive relationship with bad debt of the listed commercial banks, with the coefficient of 126.1485. This implies that an increase of 1%in the currency reserve will lead to increase of 1% will lead to increase of 126.1486 to the bad debt of the banks. Default risk has a positive relationship with the bad debt of the banks with the coefficient of 1.814536DFR; this implies that an increase of 1% or unit increase will lead to increase in bad debt by 18.1%. However, interest rate risk and market risk

have negative effect on bad debt with the coefficient of -14.19227INTR and -10.86906MKTR which implies that an increase of 10% will lead to decrease in bad debt by 10.8% and 14.1%.

However, interest rate risk and market risk were found to have a negative relationship with the bad loans of the commercial banks. This finding confirm the a-priori expectation of the study that operational efficiency of the commercial banks for instance Toby (2006) noted that the banking sector crises that led to the collapse of some commercial banks in the 1990s was traced to market risk and high profile of interest rate risk of the commercial banks. The negative effect of the variables confirm the findings of Hosna Manzura and Juanjuan (2009) found that Non-performing loans indicator affected on profitability as measured by (ROE) more than capital adequacy ratio, and the effect of credit risk management on bad loans was not the same for all the banks included in their study. Njanike (2009) found that the absence of effective credit risk management led to occurrence of the banking crisis, and inadequate risk management systems caused the financial crisis. Aduda and Gitonga (2011) found that the credit risk management effected on bad loans at a reasonable level. Aruwa and Musa (2012) investigated the effects of the credit risk, and other risk components on the banks' financial performance. They found a strong relationship between risk components and the banks' financial performance. Boahene, Dasah and Agyei (2012), they found a positive relationship between credit risk and bad loans. Gakure, Ngugi, Ndwiga and Waithaka (2012) investigated the effect of credit risk management techniques on the banks' performance of unsecured loans. Kolapo, Ayeni and Oke (2012) showed that the effect of credit risk on bank performance measured by ROA was cross-sectional invariant, though the degree to which individual banks were affected was not captured by the method of analysis employed in the study. Poudel (2012) explored the various credit risk management indicators that affected banks' financial performance; he found that the most indicators affected the bank financial performance was the default rate.

CONCLUSION AND RECOMMENDATIONS

Conclusion

The objective of this study is to investigate the existing relationship between various components of credit risk on the bad loans of quoted commercial banks. Commercial banks profitability performance is proxy by bad loans while credit risk, default risk. Findings from the study revealed that credit risk and default risk has positive and significant relationship; while interest rate risk and market risk have negative and insignificant relationship with bad loans. The coefficient of determination R^2 and adjusted R^2 are 72.9% and 70.1% respectively variation in return on investment can be explained by the independent variables in the model, while the F-statistics revealed 26.05239 with probability of 0.00000. From the above, the research concludes that credit risk has a significant relationship with the bad loans of the quoted commercial banks.

Recommendations

From the findings of the study, the following are recommended:

i. There should be sound and internal and lending policies in the commercial banks such as adequate appraisal techniques and monitoring to avert bad loans.
ii. There is need to comply and regulation guiding bank lending such as the Basel accord risk management policy. Also, full compliance should be given to rules and regulation guiding bank lending as specified by BOFIA.

iii. Prudential measures should be adopted in the commercial banks to manage financial and non-financial risk in the banking industry.
iv. The credit management department should be effective in risk management such that it will enhance risk management process of the commercial banks.

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