

**THE RELATIONSHIP BETWEEN CREDIT RISK MANAGEMENT AND NON-  
PERFORMING LOANS IN COMMERCIAL BANKS IN KENYA**

**BY**

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## DECLARATION

I hereby declare that this research project is my original work and has not been presented in any other university for an award.

Signed ..... Date .....

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This research project has been submitted for examination with my approval as the university supervisor.

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## **DEDICATION**

This project is dedicated to my wife, son and daughter for their love, sacrifice, support and understanding without which the completion of this research project would not have been possible.

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## **LIST OF ABBREVIATIONS**

<b>CA</b>	Capital Adequacy
<b>CAPM</b>	Capital Asset Pricing Theory
<b>CAR</b>	Capital Adequacy Ratio
<b>CBK</b>	Central Bank of Kenya
<b>GDP</b>	Growth Domestic Product
<b>LA</b>	Loans and Advances
<b>LLP</b>	Loan Loss Provisions
<b>MFI</b>	Micro Finance Institutions
<b>MPT</b>	Modern Portfolio Theory
<b>NPA</b>	Non-Performing Asset
<b>NPLs</b>	Non-Performing Loans
<b>RAPMs</b>	Risk-adjusted Performance Measures
<b>RAROC</b>	Risk-Adjusted Return on Capital
<b>RARORAC</b>	Risk-adjusted Return on Risk-adjusted Capital
<b>ROA</b>	Return on Assets
<b>SACCOs</b>	Savings and Credit Co-operatives
<b>SPSS</b>	Statistical Package for Social Sciences
<b>US</b>	United States



## **ABSTRACT**

The study investigated the relationship between credit risk management and the level of non-performing loans in commercial banks in Kenya. The study adopted a descriptive survey design. Through use of descriptive and inferential statistics, this design was deemed the best design to fulfill the objective of the study. The target population of the study was all the 43 commercial banks in Kenya as registered by CBK by December 31, 2013. The census method was used for this study since the population was small and variable and the institutions are easily accessible; hence the sample size was all 43 commercial banks in Kenya. In order to achieve the set objectives of the study, both primary and secondary data was used. The primary data was collected using a questionnaire. The questionnaire had both closed and open-ended questions. The closed ended questions enabled the researcher to collect quantitative data while open-ended questions enabled the researcher to collect qualitative data. The secondary data was obtained from the annual reports of the banks. Data collected covered a period of 5 years, from 2009-2013. The study concluded that most bank have a sound credit risk management system and the senior management banks develop policies and procedures for identifying, measuring, monitoring and controlling credit risk. The study further concludes that most banks in Kenya operate under a sound credit risk management process that reduces loan default which leads to low non-performing loans. The study also concluded that banks take into consideration potential future changes in economic conditions when assessing individual credits and their credit portfolios. For proper credit management process, banks should have management information systems that provide adequate information on the composition of the credit portfolio. The study recommended that banks must respond to this by combining this information with different credit risk management techniques used to evaluate the clients by reviewing the lending terms and conditions of the clients. The overall responsibility of risk management vests in bank's board. The board should outline risk management strategy and formulate well-defined policies and procedures. Risk management department be made on portfolio or business line basis, to adopt a holistic approach judging the overall risk exposure in assessing and managing risk profile of the bank.

# CHAPTER ONE

## INTRODUCTION

### 1.1 Background of the Study

Risk management is recognized in today's business world as an integral part of good management practice (Haneef et al., 2012). It entails the systematic application of management policies, procedures, processes and practices to the tasks of identifying, analyzing, assessing, monitoring and managing risks. Financial institutions are exposed to various risks in pursuit of their business objectives; the nature and complexity of which has changed rapidly over time. The failure to adequately manage risks exposes financial institutions to adverse effects on their financial performance including reduced profitability and liquidity problems, ultimately rendering them unsuccessful in achieving their strategic business objectives. In the worst case, inadequate risk management may result in circumstances so catastrophic in nature that financial institutions cannot remain in business (Haneef et al., 2012).

Many researches on the cause of bank failures find that asset quality is a statistically significant predictor of insolvency (Barr & Siems, 1994, Demirguc-Kunt and Detragiache, 1998), and that failing financial institutions always have high level of non-performing loans prior to failure. It is argued that the non-performing loans are one of the major causes of the economic stagnation problems. Each non-performing loan in the financial sector is viewed as an obverse mirror image of an ailing unprofitable enterprise. Therefore the eradication of non-performing loans is a necessary condition to improve the economic status. If the non-performing loans are kept existing and continuously rolled

over, the resources are locked up in unprofitable sectors; thus, hindering the economic growth and impairing the economic efficiency (Biabani et al. 2012).

Credit risk is the potential that a bank borrower or counterparty fails to meet the obligations on agreed terms. There is always a possibility that a bank borrower will not repay his or her loan as obligated resulting into credit risk exposure or financial losses or otherwise known as non-performing loans. These losses could take the form outright default or alternatively, losses from changes in portfolio value arising from actual or perceived deterioration in credit quality that is short of default (Nocco & Stulz, 2006).

### **1.1.1 Credit Risk Management**

Basel committee define credit risk as the potential that a bank borrower or counterparty will fail to meet its obligations in accordance with agreed terms (Basel, 2000). Credit risk management is a structured approach to managing uncertainties through risk assessment, developing strategies to manage it, and mitigation of risk using managerial resources. The strategies include transferring to another party, avoiding the risk, reducing the negative effects of the risk, and accepting some or all of the consequences of a particular risk. The process of risk management is a two step process. The first is to identify the source of the risk, which is to identify the leading variables causing the risk. The second is to devise methods to quantify the risk using mathematical models, in order to understand the risk profile of the instrument. It is crucial for banks to have comprehensive risk management framework as there is a growing realization that sustainable growth critically depends on the development of a comprehensive risk management framework (Greuning & Iqbal, 2007).

Credit risk management forms a key part of a company's overall risk management strategy. Weak credit risk management is a primary cause of many business failures. Many small businesses, for example, have neither the resources nor the expertise to operate a sound credit management system (Richardson, 2002). The goal of credit risk management is to maximize a bank's risk-adjusted rate of return by maintaining credit risk exposure within acceptable parameters. Banks need to manage the credit risk inherent in the entire portfolio as well as the risk in individual credits or transactions. Banks should also consider the relationships between credit risk and other risks. The effective management of credit risk is a critical component of a comprehensive approach to risk management and essential to the long-term success of any banking organization (Hull, 2007). The main techniques for measuring credit risk include: credit scoring, development of a credit policy, assessment of credit exposure, determination of credit risk premium and credit ratings.

Credit risk is important in monetary and credit institution because resources applied for facilities are in debt of monetary institution (bank) to its shareholders and if the money doesn't have flow, power of giving credit and shareholders' capital return reduces (Jamaat & Asgari, 2010). The purpose of credit risk management is that by maintaining of credit risk in acceptable range; the ratio of return level banking facility to risk be maximized. Therefore, responsibilities in bank should be determined clearly thereby ensure that bank's policies and procedures in risk management are managed effectively.

### **1.1.2 Non-Performing Loans**

Non-performing loans (NPLs) are loans that are in default or close to being in default. Many loans become non-performing after being in default for 90 days, but this can

depend on the contract terms. A loan is non-performing when payments of interest and principal are past due by 90 days or more, or at least 90 days of interest payments have been capitalized, refinanced or delayed by agreement, or payments are less than 90 days overdue, but there are other good reasons to doubt that payments will be made in full (International Monetary Fund, 2005).

Prudential Guidelines (2006) defines non-performing loan as a loan that is no longer generating income. The guidelines state that loans are non-performing when: principal or interest is due and unpaid for 90 days or more; or interest payments for 90 days or more have been re-financed, or rolled-over into a new loan.

The literature identifies two sets of factors to explain the evolution of NPLs over time. One group focuses on external events such as the overall macroeconomic conditions, which are likely to affect the borrowers' capacity to repay their loans, while the second group, which looks more at the variability of NPLs across banks, attributes the level of NPLs to bank-level factors (Klein, 2013). For instance, Berger and DeYoung (1997), who studied the links between NPLs, cost efficiency and capitalization in the US commercial banks for the period 1985–94, found a two-way causality between cost efficiency to NPLs. While they explained the causality from NPLs to cost efficiency as “bad luck,” driven mainly by deterioration in macroeconomic conditions, they explained this causality from cost efficiency to NPLs through the hypothesis of “bad management.” In particular, this hypothesis argues that low cost efficiency is a signal of poor management practices, thus implying that as a result of poor loan underwriting, monitoring and control, NPLs are likely to increase.

An alternative hypothesis (“skimping”), that was also proposed by Berger and DeYoung (1997) suggests a possible positive causality between high cost efficiency and NPLs. In particular, they suggest that high cost efficiency may reflect little resources allocated to monitor lending risks and therefore may result in higher NPLs in the future. This hypothesis is consistent with the findings of Rossi, Schwaiger, and Winkler (2005) who looked at a sample of 278 banks from nine transition countries from 1995 to 2002.

Lastly, is the “moral hazard” hypothesis, which was discussed by Keeton and Morris (1987); they argue that banks with relatively low capital respond to moral hazard incentives by increasing the riskiness of their loan portfolio, which in turn results in higher non-performing loans on average in the future. Keeton and Morris (1987) indeed showed that excess loss rates were prominent among banks that had relatively low equity-to-assets ratio. The negative link between the capital ratio and NPLs was also found in Berger and DeYoung (1997), and Salas and Saurina (2002). Keeton and Morris (1987) argued that banks that tend to take more risks, including in the form of excess lending eventually absorbed higher losses. Their finding was supported by Salas and Saurina (2002) and Jimenez and Saurina (2005). This therefore shows that risks in the bank can result to or increase the level of non-performing loans.

### **1.1.3 Effects of Credit Risk Management on Non-Performing Loans**

Ekrami and Rahnama (2009) stated that the high amount of NPLs represents high credit risk in today bank system and this encounters banks with market risks and liquidity risk. Although banks are trying to control the risks within the organization, but high percentage of this risk and its consequences for the future could not be ignored. NPLs

create due to weak criteria of credit assays, ineffective policies, risk acceptance without regard to limitation of bankroll and wrong functional indicators (Morton, 2003).

Keeton and Morris (1987) present one of the earliest studies to examine or show the relationship between non performing loans and credit risk management. The authors examined the losses by 2,470 insured commercial banks in the United States (US) over the 1979-85. Using NPLs net of charge-offs as the primary measure of loan losses. Keeton and Morris reported that commercial banks with greater risk appetite tend to record higher losses. Several studies which followed the publication of Keeton and Morris have since proposed similar and other explanations for losses/non-performing loans in banks. For instance a study by Haneef et al (2012) concluded that non-performing loans are increasing due to lack of risk management which threatens the profitability of banks.

#### **1.1.4 Commercial Banks in Kenya**

In Kenya, the Banking Sector is composed of the Central Bank of Kenya, as the regulatory authority and the regulated Commercial Banks, Non-Bank Financial Institutions and Forex Bureaus. As at December 2013, Kenya had 43 licensed commercial banks and 1 mortgage company ([www.centralbank.go.ke/](http://www.centralbank.go.ke/)). Out of the 44 institutions, 31 are locally owned and 13 are foreign owned.

Over the last few years, the banking sector in Kenya has continued to grow in assets, deposits, profitability and products offering. The growth has been mainly attributed to the industry's wide branch network expansion strategy both in Kenya and in the East African community region, the automation of a large number of services, and a move towards

emphasis on the complex customer needs rather than traditional ‘off-the-shelf’ banking products. Players in this sector have experienced increased competition over the last few years resulting from increased innovations among the players and new entrants into the market (CBK, 2012).

Banks use various credit risk management methods such as credit limits, taking collateral, diversification, loan selling, syndicated loans, credit insurance, and securitization and credit derivatives. It is important for staff of banking institutions to understand the aspect of risk in the banking operations and the risks that are inherent and exposed in their business operations. Better understanding of risk management is also necessary especially in the financial intermediation activities where managing risk is one its important activities.

## **1.2 Research Problem**

Credit risk management is very important to banks as it is an integral part of the loan process. It maximizes bank risk, adjusted risk rate of return by maintaining credit risk exposure with view to shielding the bank from the adverse effects of credit risk. Banks are investing a lot of funds in credit risk management modeling (Jamaat & Asgari, 2010). Efficient management of credit risk is a part of comprehensive risk management method and the basic condition for long term success of each bank (Basel, 1999, 2004).

The liberalization of the Kenya banking industry in 1992 marked the beginning of intense competition among the commercial banks, which saw banks extend huge amounts of credit with the main objective of increasing profitability. According to Central Bank Supervision Report, (2005), many banks that collapsed in that time were as a result of the



poor management of credit risks which was portrayed in the high levels of non-performing loans. Since 2005 commercial banks embarked upon an upgrading of their risk management and control systems (CBK, 2010). This was after the issuance of the Risk Management Guidelines (RMGs) in 2005 and the adoption of the Risk Based Supervision approach of supervising financial institutions in 2005. This has also been necessitated by the drive to fully adopt Risk Based Supervision and to incorporate the international risk management best practices envisioned in the 25 Basel Core Principles for Effective Banking Supervision. Despite these new approaches in risk management in commercial banks in Kenya, it is not clear how the credit risk management practices adopted have impacted on the level on non-performing loans.

A study Haneef et al (2012) found out that non-performing loans are increasing due to lack of risk management which threatens the profitability of banks. A review of the local studies done in the study area shows that Gakure, Ngugi, Ndwiga and Waithaka, (2012) did a study on the effect of credit risk management techniques on the performance of unsecured bank loans employed commercial banks in Kenya; Kithinji (2010) did a study on credit risk management and profitability of commercial banks in Kenya; Muasya, (2013) conducted a study on the relationship between credit risk management practices and loans losses on Commercial Banks in Kenya. This therefore shows that there is no notable empirical evidence to show the relationship between credit risk management and the level of non-performing loans in commercial in Kenya. It is against this background therefore that the study seeks to fill that gap; the study will seek to answer the question; what is relationship between credit risk management and the level of non-performing loans in commercial banks in Kenya?

### **1.3 Objective of the Study**

To investigate the relationship between credit risk management and the level of non performing loans in commercial banks in Kenya.

### **1.4 Value of the Study**

This study will of value to commercial banks in Kenya as well as other financial institutions. By knowing the relationship that credit risk management has on non performing loans, the management in these institutions will be able to make sound decisions on credit risk management in their institutions.

This study may be important the policy makers and specifically the central bank of Kenya and Kenya Bankers Association, as they will obtain knowledge of the credit risk management in commercial banks in Kenya. They can therefore obtain guidance from this study in designing appropriate strategies and policies that may regulate the sector.

The study can provide information to potential and current scholars on credit risk management among commercial banks in Kenya. The study will add value and expand the body of knowledge on risk management in commercial banks and also identify areas of further study.

## **CHAPTER TWO**

### **LITERATURE REVIEW**

#### **2.1 Introduction**

This chapter presents the literature review. It covers the theoretical review which discusses the theories that guide the study. It also discusses the empirical review where research work by other researcher and authors in the field under study is discussed. Lastly, a summary of the chapter is provided.

#### **2.2 Theoretical Review**

The theoretical review seeks to establish some of the theories that are attributed by other researchers, authors and scholars and are relevant to credit risk management. The study was guided by the modern portfolio theory, capital asset pricing theory and the Risk-Adjusted Return on Capital theory.

##### **2.2.1 Modern Portfolio Theory**

Modern Portfolio Theory (MPT) is a theory of investment which tries to maximize return and minimize risk by carefully choosing different assets (Markowitz, 1952). The Primary principle upon which Modern Portfolio Theory is based (MPT) is the random walk hypothesis which states that the movement of asset prices follows an Unpredictable path: the path as a trend that is based on the long-run nominal growth of corporate earnings per share, but fluctuations around the trend are random (Chandra & Shadel, 2007). Since the 1980s, banks have successfully applied modern portfolio theory (MPT) to market risk. Many financial institutions are now using value at risk (VAR) models to manage their interest rate and market risk exposures. Unfortunately, however, even though credit risk

remains the largest risk facing most banks, the practical of MPT to credit risk has lagged (Margrabe, 2007).

Financial institutions recognize how credit concentrations can adversely impact financial performance. As a result, a number of sophisticated institutions are actively pursuing quantitative approaches to credit risk measurement, while data problems remain an obstacle. This industry is also making significant progress toward developing tools that measure credit risk in a portfolio context. They are also using credit derivatives to transfer risk efficiently while preserving customer relationships. The combination of these two developments has precipitated vastly accelerated progress in managing credit risk in a portfolio context over the past several years (Saunders & Cornett, 2007).

Traditionally, banks have taken an asset-by-asset approach to credit risk management. While each bank's method varies, in general this approach involves periodically evaluating the credit quality of loans and other credit exposures, applying a credit risk rating, and aggregating the results of this analysis to identify a portfolio's expected losses. The foundation of the asset-by-asset approach is a sound loan review and internal credit risk rating system. A loan review and credit risk rating system enable management to identify changes in individual credits, or portfolio trends in a timely manner. Based on the results of its problem loan identification, loan review, and credit risk rating system management can make necessary modifications to portfolio strategies or increase the supervision of credits in a timely manner (Saunders & Cornett, 2007).

While the asset-by-asset approach is a critical component to managing credit risk, it does not provide a complete view of portfolio credit risk, where the term risk refers to the

possibility that actual losses exceed expected losses. Therefore to gain greater insight into credit risk, banks increasingly look to complement the asset-by-asset approach with a quantitative portfolio review using a credit model. Financial institutions increasingly attempt to address the inability of the asset-by-asset approach to measure unexpected losses sufficiently by pursuing a portfolio approach. One weakness with the asset-by-asset approach is that it has difficulty identifying and measuring concentration. Concentration risk refers to additional portfolio risk resulting from increased exposure to a borrower, or to a group of correlated borrowers (Margrabe, 2007).

### **2.2.2 Capital Asset Pricing Theory**

Sharpe (1964) published the capital asset pricing theory (CAPM). Parallel work was also performed by Treynor (1961) and Lintner (1965). CAPM extended Markowitz's portfolio theory to introduce the notions of systematic and specific risk. For his work on CAPM, Sharpe shared the 1990 Nobel Prize in Economics with Markowitz and Miller, (1961).

In such a simple world, Tobin's (1958) super-efficient portfolio must be the market portfolio. All investors will hold the market portfolio, leveraging or de-leveraging it with positions in the risk-free asset in order to achieve a desired level of risk. CAPM decomposes a portfolio's risk into systematic and specific risk. Systematic risk is the risk of holding the market portfolio. As the market moves, each individual asset is more or less affected. To the extent that any asset participates in such general market moves, that asset entails systematic risk. Specific risk is the risk which is unique to an individual asset. It represents the component of an asset's return which is uncorrelated with general market moves (Lintner, 1965).

No matter how much we diversify our investments, it's impossible to get rid of all the risk. As investors, we deserve a rate of return that compensates us for taking on risk. The capital asset pricing model (CAPM) helps us to calculate investment risk and what return on investment we should expect. Here we look at the formula behind the model, the evidence for and against the accuracy of CAPM, and what CAPM means to the average investor (Sharpe, 1964).

When the CAPM was first introduced, the investment community viewed the new model with suspicion, since it seemed to indicate that professional investment management was largely a waste of time. It was nearly a decade before investment professionals began to view the CAPM as an important tool in helping investors understand risk. The key element of the model is that it separates the risk affecting an asset's return into two categories. The first type is called unsystematic, or company-specific, risk. The long-term average returns for this kind of risk should be zero. The second kind of risk, called systematic risk, is due to general economic uncertainty. The CAPM states that the return on assets should, on average, equal the yield on a risk-free bond held over that time plus a premium proportional to the amount of systematic risk the stock possesses (Markowitz, 1952).

The treatment of risk in the CAPM refines the notions of systematic and unsystematic risk developed by Markowitz in the (1950s). Unsystematic risk is the risk to an asset's value caused by factors that are specific to an organization, such as changes in senior management or product lines. For example, specific senior employees may make good or bad decisions or the same type of manufacturing equipment utilized may have different

reliabilities at two different sites. In general, unsystematic risk is present due to the fact that every company is endowed with a unique collection of assets, ideas and personnel whose aggregate productivity may vary.

### **2.2.3 Risk-Adjusted Return on Capital Theory**

An increasingly popular model used to evaluate the return on a loan to a large customer is the Risk-Adjusted Return on Capital (RAROC) Model. This model, originally pioneered by Bankers Trust (acquired by Deutsche Bank in 1998) is now adopted by virtually all the large banks in Europe and the US, although with some differences among them (Saunders & Cornett, 2007). The essential idea behind RAROC is that rather than evaluating the actual promised annual cash flow on a loan as a percentage of the amount lent or (ROA), the lenders balance the loan's expected income against the loan's expected risk.

According to Christopher (1996), the immediate purpose of the RAROC risk measurement systems is to provide bank managements with a more reliable way to determine the amount of capital necessary to support each of their major activities and, thus, to determine the overall leverage for the bank as a whole. RARORAC (Risk-adjusted Return on Risk-adjusted Capital) is an indicator measuring efficiency in value creation as a function of risk. It belongs to the category of Risk-adjusted Performance Measures (RAPMs) together with the Return on Risk Adjusted Capital (RORAC) and the Risk-Adjusted Return on Capital (RAROC), among other indicators.

The RAPM approaches, aim to improve traditional valuation measures for business unit or portfolio profitability by quantifying the risk elements associated to uncertain factors.

The terminology used for the definition of this methodological framework is wide and sometimes confusing (Saita, 2007). Frequently, this is just the result of using different names for the same indicator, although occasionally the same indicator is defined and implemented in different forms. The RARORAC combines RAROC and RORAC to propose a measure accounting for the risk dimension corresponding in the returns of a business line or on the profitability of investments.

## **2.3 Determinants of Non-Performing Loans**

According to Basel (1999) a sound and comprehensive credit risk management program need to address these four areas: (i) establishing an appropriate credit risk environment; (ii) operating under a sound credit granting process; (iii) maintaining an appropriate credit administration, measurement and monitoring process; and (iv) ensuring adequate controls over credit risk. Although specific credits risk management practices may differ among banks depending upon the nature and complexity of their credit activities. These practices should also be applied in conjunction with sound practices related to the assessment of asset quality, the adequacy of provisions and reserves, and the disclosure of credit risk.

### **2.3.1 Establishing an Appropriate Credit Risk Environment**

In establishing a proper credit risk environment, the first principle is that the board of directors should have responsibility for approving and periodically (at least annually) reviewing the credit risk strategy and significant credit risk policies of the bank. The strategy should reflect the bank's tolerance for risk and the level of profitability the bank expects to achieve for incurring various credit risks. The second principal is that the



senior management should have responsibility for implementing the credit risk strategy approved by the board of directors and for developing policies and procedures for identifying, measuring, monitoring and controlling credit risk. Such policies and procedures should address credit risk in all of the bank's activities and at both the individual credit and portfolio levels. Lastly, the banks should identify and manage credit risk inherent in all products and activities. Banks should ensure that the risks of products and activities new to them are subject to adequate risk management procedures and controls before being introduced or undertaken, and approved in advance by the board of directors or its appropriate committee (Basel, 1999).

### **2.3.2 Operating under a Sound Credit Granting Process**

Basel Committee (1999) also agrees that, to have a sound credit granting processes banks must operate within sound, well-defined credit-granting criteria. These criteria should include a clear indication of the bank's target market and a thorough understanding of the borrower or counterparty, as well as the purpose and structure of the credit, and its source of repayment. Banks should establish overall credit limits at the level of individual borrowers and counterparties, and groups of connected counterparties that aggregate in a comparable and meaningful manner different types of exposures, both in the banking and trading book and on and off the balance sheet.

Another principle is that banks should have a clearly-established process in place for approving new credits as well as the amendment, renewal and re-financing of existing credits. Also, all extensions of credit must be made on an arm's-length basis. In particular, credits to related companies and individuals must be authorised on an

exception basis, monitored with particular care and other appropriate steps taken to control or mitigate the risks of non-arm's length lending (Basel, 1999).

### **2.3.3 Maintaining an Appropriate Credit Administration, Measurement and Monitoring Process**

To maintain an appropriate credit administration measurement, monitoring process, Basel (1999) sets out a number of principals. One is that Banks should have in place a system for the ongoing administration of their various credit risk-bearing portfolios. Banks must have in place a system for monitoring the condition of individual credits, including determining the adequacy of provisions and reserves; and third, they are encouraged to develop and utilise an internal risk rating system in managing credit risk. The rating system should be consistent with the nature, size and complexity of a bank's activities.

Another principle to guide in maintaining an appropriate credit process is that banks must have information systems and analytical techniques that enable management to measure the credit risk inherent in all on- and off-balance sheet activities. The management information system should provide adequate information on the composition of the credit portfolio, including identification of any concentrations of risk. Moreover, banks must have in place a system for monitoring the overall composition and quality of the credit portfolio. Lastly, banks should take into consideration potential future changes in economic conditions when assessing individual credits and their credit portfolios, and should assess their credit risk exposures under stressful conditions (Basel, 1999).

Therefore, to have a sound credit risk management system, it is necessary to establish a proper credit risk environment, sound credit granting processes, appropriate credit administration, measurement, monitoring and control over credit risk, policy and strategies that clearly summarize the scope and allocation of bank credit facilities as well as the approach in which a credit portfolio is managed i.e. how loans are originated, appraised, supervised and collected, a basic element for effective credit risk management (Basel, 1999).

## **2.4 Empirical Review**

Ahmed (2006) did an investigation of the relationship between non-performing loans, macroeconomic factors, and financial factors in context of private commercial banks in Bangladesh. The empirical analysis evaluates as to how banks' non-performing loans are influenced by three major sets of economic and financial factors, i.e., terms of credit, bank size induced risk preferences and macroeconomic shocks. The study selected 15 banks. The findings prove support to the hypotheses that bank size and horizon of loan maturity has negative influence on non-performing loan. The other variables considered do not have any significant influence on non-performing loan.

Mwithi (2010) conducted a study to determine the relationship between credit risk management practices and the level of non-performing loans of microfinance institutions in Nyeri County, Kenya. The study found out that the level of credit risk assessment and management was high in the MFIs. It was also found out that effective management of their institutions was affected by liquidity and profitability, and that asymmetric information in loan market affects the effective management of NPLs in MFIs in Nyeri County. The study found that inability to enforce covenants leads to NPLs among MFIs

in Nyeri County to a very large extent. The study concluded that the relationship between credit risk management approaches employed by Micro Finance Institutions in Nyeri County and the level of Non-Performing Loans was a negative correlation i.e. the higher the level of credit risk management, the lower the level of NPLs.

Kithinji (2010) conducted a study on credit risk management and profitability of banks in Kenya. Data on the amount of credit, level of nonperforming loans and profits were collected for the period 2004 to 2008. Amount of credit was measured by loan and advances to customers divided by total assets, nonperforming loans was measured using nonperforming loans/ total loans, and profits were measured using ROTA (Return on Total assets). The findings reveal that the level of credit was high in the early years of the implementation of Basle II but decreased significantly in 2007 and 2008, probably when the Basle II was implemented by commercial banks. The findings reveal that the bulk of the profits of commercial banks is not influenced by the amount of credit and nonperforming loans suggesting that other variables other than credit and nonperforming loans impact on profits. The model does not establish a relationship between profits, amount of credit and the level of non-performing loans. The study concluded that Commercial banks that are keen on making high profits should concentrate on other factors other than focusing more on amount of credit and non-performing loans.

Musyoki and Kadubo (2011) conducted a study on the impact of credit risk management on the financial performance of Banks in Kenya for the period 2000 – 2006. The objective of study was to assess various parameters pertinent to credit risk management as it affects banks' financial performance. Such parameters covered in the study were; default rate, bad debts costs and cost per loan asset. Financial reports of 10 banks was

used to analyze profit ability ratio for seven years (2000-2006) comparing the profitability ratio to default rate, cost of debt collection and cost per loan asset which was presented in descriptive, regression and correlation was used to analyze the data. The study revealed that all these parameters have an inverse impact on banks' financial performance, however the default rate is the most predictor of bank financial performance vis-à-vis the other indicators of credit risk management. The recommendation is to advise banks to design and formulate strategies that will not only minimize the exposure of the banks to credit risk but will enhance profitability and competitiveness of the banks.

Haneef et al. (2012) did a study to investigate the impact of risk management on non-performing loan and profitability of banking sector of Pakistan. Five banks were selected for data collection and whole data was secondary in nature. The result of this study reveals that there is no proper mechanism for risk management in banking sector of Pakistan. Study also concluded that non-performing loans are increasing due to lack of risk management which threatens the profitability of banks. They further concluded that risk management encompasses risk identification, assessment, measurement, monitoring and controlling all risks inherent in the business of banking. The basic principles relating to risk management that are applicable to every financial institution, irrespective of its size and complexity.

Biabani et al. (2012) conducted a study on the assessment of effective factors on non-performing loans (NPLs) creation, an empirical evidence from Iran (2006-2011). This study is an assessment of effective factors on Non-Performing Loans (NPLs) for preventing NPLs, increasing possibility of new income and improvement of scheduling

power for using resources. Banks documents were investigated for collecting data. These data were analyzed with SPSS and results have shown that all hypothesized except one of them were supported. This means that there are significant relationships between collaterals, bounced check, credit background of customers, duration of loans payment and average of account quantity with NPLs. Relation between having several deposit accounts with NPLs was not supported.

Negera (2012) assessed the determinants of non-performing loans. The mixed research approach was adopted for the study. Survey was conducted with professionals engaged in both private and state owned Banks in Ethiopia holding different positions using a self administered questionnaire. In addition, the study used structured review of documents and records of banks and in-depth interview of senior bank officials in the Ethiopian banking industry. The findings of the study shows that poor credit assessment, failed loan monitoring, underdeveloped credit culture, lenient credit terms and conditions, aggressive lending, compromised integrity, weak institutional capacity, unfair competition among banks, willful default by borrowers and their knowledge limitation, fund diversion for unintended purpose, over/under financing by banks ascribe to the causes of loan default. However, the study outcome failed to support the existence of relationship between banks size, interest rate they charge and ownership type of banks and occurrences of nonperforming loans

Gakure et al. (2012) conducted a study to investigate the effect of credit risk management techniques on the performance of unsecured bank loans by commercial banks in Kenya. The target population of this study was management staff working in commercial banks of the top, middle and low level management ranks. The sample size was 39 respondents.

The data collection instruments were questionnaires. Quantitative data collected was analyzed by descriptive statistics using SPSS and presented through percentages, means, standard deviations and frequencies. A regression model was also used to measure the effect. The research found that risk identification affects the performance of unsecured bank loans to a moderate extent while inspection by branch managers affected the performance of unsecured bank loans to a great extent. The study concludes that risk identification affects the performance of unsecured bank loans to a great extent and that inspection by branch managers affected the performance of unsecured bank loans to a great extent. Risk measurement affects the performance of unsecured bank loans to a great extent and that risk analysis and assessment comprises identification of the outcomes also affected the performance of unsecured bank loans to a great extent. The study also concluded that credit approval guidelines and monitoring of borrowers affect the performance of unsecured bank loans to a great extent and that clear established process for approving new credits and extending the existing credits has been observed to be very important while managing Credit Risks in banks

Afriyie and Akotey (2013) conducted a study to examine the impact of credit risk management on the profitability of rural and community banks in the Brong Ahafo Region of Ghana. We used the annual financial statements of ten rural banks from the period of 2006 to 2010 (five years) for our analysis. The panel regression model was employed for the estimation. In the model, definition of Return on Equity (ROE) and Return on Asset (ROA) were used as profitability indicators while Non-Performing Loans (NLP) and Capital Adequacy Ratio (CAR) as credit risk management indicators.

The findings indicate a significant positive relationship between non-performing loans and rural banks' profitability revealing that, there are higher loan losses but banks still earn profit. This indicates that, rural banks do not have sound and effective credit risk management practices. Theoretically, non-performing loans reduce the profit levels of rural banks but in a situation where non-performing loans are increasing proportionately to profitability, then it means that rural banks do not have effective institutional measures to deal with credit risk management.

Muasya (2013) investigated the relationship between credit risk management practices and loans losses - a study on commercial banks in Kenya. Descriptive research design was utilized in this study as it aimed to see if there is a relationship between credit risk management practices and loan portfolio losses in commercial banks in Kenya. The study utilized a standard questionnaire to collect primary data from the credit managers/officers through the drop and pick method where thirty six (36) responses were received. The data was then analyzed and the findings presented using tables giving descriptive statistics including frequencies, mean and percentages. Research findings indicated that a significant number of commercial banks in Kenya had not put in place credit risk management information systems to effectively measure, monitor, control and identify risk, and that majority of management of commercial banks in Kenya recognized the need for information sharing among players within the industry in order to mitigate the risk. It was concluded that credit risk management practices are common among most of the commercial banks in Kenya and that management of these commercial banks appreciated government legislation relating to credit risk management through the introduction of the credit sharing information Act, and that there is a significant negative



relationship between credit risk management practices and loans losses in commercial banks in Kenya.

Abiola and Olausi (2014) did a study to investigate the impact of credit risk management on the performance of commercial banks in Nigeria. Financial reports of seven commercial banking firms were used to analyze for seven years (2005 – 2011). The panel regression model was employed for the estimation of the model. In the model, Return on Equity (ROE) and Return on Asset (ROA) were used as the performance indicators while Non-Performing Loans (NPL) and Capital Adequacy Ratio (CAR) as credit risk management indicators. The findings revealed that credit risk management has a significant impact on the profitability of commercial banks' in Nigeria.

## **2.5 Summary of the Literature Review**

A review of empirical studies discussed in this study shows that there are mixed results on how credit risk management practices adopted by financial institutions impact on non-performing loans. In some instances, some studies shows that credit risk management has a significant impact on the profitability of commercial banks while on the other hand, results show that credit risk management was found to have a negative impact on banks' profitability. There is therefore need for a study in the Kenyan context for comparison of results. Moreover, though there is increased literature on credit risk management and financial performance of commercial banks in developing countries; the literature on the Kenyan context is scare. There are few studies conducted on this context. It is based on these indentified gaps that this study seeks to fill these knowledge gaps by conducting a study on the relationship between credit risk management and the level of non-performing loans in commercial banks in Kenya.



## **CHAPTER THREE**

### **RESEARCH METHODOLOGY**

#### **3.1 Introduction**

This chapter discusses the methodology to be adopted by the researcher in carrying out the study. The chapter presents the population to be studied, the methods to be used to sample it, the instruments to be used in data collection and procedures that will be used in data analysis.

#### **3.2 Research Design**

The study adopted a descriptive survey design. According to Robson (2002), descriptive study portrays an accurate profile of persons, events or situation. Furthermore, Chandran (2004) states descriptive study describes the existing conditions and attitudes through observation and interpretation techniques. These writer claim the descriptive research design is one of the best methods for conducting research in human contexts because of portraying accurate current facts through data collection for testing hypothesis or answering questions to conclude the study (Robinson 2002, Chandran 2004). Through use of descriptive and inferential statistics, thus this design was deemed the best design to fulfill the objective of this study.

#### **3.3 Population**

The target population of the study was all the 43 commercial banks in Kenya as registered by CBK by December 31, 2013. The list of the banks is provided in Appendix I.

Since the population is small and variable, the study adopted a census study approach. According to Cooper and Schindler (2006) a census is feasible when the population is small and necessary when the elements are quite different from each other. When the population is small and variable, any sample we draw may not be representative of the population from which it is drawn. Therefore since the target population for this study was small and variable, it was appropriate for researcher to choose census method to be used because the population is small and the institutions are easily assessable to be reached, hence the sample size was all 43 banks commercial banks in Kenya.

### **3.4 Data Collection**

In order to achieve the set objectives of the study, both primary and secondary was used. The data was collected using a questionnaire. The questionnaire had both closed and open-ended questions. The closed ended questions will enable the researcher to collect quantitative data while open-ended questions enabled the researcher to collect qualitative data.

The secondary data was obtained from the annual reports of the banks. Data to be collected covered a period of 5 years, from 2009-2013. The data to be collected included the Amount of Credit, number of non-performing loans, number and value of total loans.

#### **3.4.1 Data Validity and Reliability**

A pre-test of the questionnaire was out prior to the actual data collection. The developed questionnaire will be checked for its validity and reliability through pilot testing. Reliability test helped establish the internal consistency of the instrument. Test re-test method was used to pilot the questionnaires, which do not form sample of the study.

Reliability was tested by the Cronbach's alpha test which was calculated with the help of Statistical Package for Social Sciences (SPSS). Cronbach's alpha was used to determine the reliability whereby a co-efficient of above 0.7 implied that the instruments were sufficiently reliable for the measurement.

Validity of the questionnaire was established by the research and supervisor reviewing the items. The objectives of pre-testing was to allow for modification of various questions in order to rephrase, clarify and or clear up any shortcomings in the questionnaires before administering them to the actual respondents. It helped the researcher to correct inconsistencies arising from the instruments, which ensured that they measure what is intended.

### **3.5 Data Analysis**

The whole process which starts immediately after data collection and ends at the point of interpretation and processing data is data analysis (Cooper & Schindler, 2003). The collected data was analyzed through descriptive and inferential statistics. The Statistical Package for Social Sciences (SPSS) version 20 was used to analyze data. The results will be presented in tables, bar charts and bar graphs.

#### **3.5.1 Analytical Model**

The study further adopted the following regression model to establish the form of relationship between credit risk management and the level of non-performing loans. The equation will take the following form;

$$Y = \beta_0 + \beta_1 \chi_1 + \beta_2 \chi_2 + \beta_3 \chi_3 + \beta_4 \chi_4 + \beta_5 \chi_5 + \epsilon$$

Where: Y = Non-performing loans

$\chi_1$  = Risk identification

$\chi_2$  = Risk monitoring

$\chi_3$  = Risk analysis and appraisal

$\chi_4$  = Bank size

$\chi_5$  = Interest Rates

$\beta_0$  = the constant

$\beta_{1-n}$  = the regression coefficient or change included in Y by each  $\chi$

$\epsilon$  = error term

**Table 3.1: Operationalization of Variables**

<b>Dependent Variable</b>	<b>Indicators/Measures</b>
Non-performing loans	<ul style="list-style-type: none"> <li>• Ratio of Non-performing loan to loan Advances (NPL/LA)</li> </ul>
<b>Independent Variable</b>	
Credit Risk Management	<ul style="list-style-type: none"> <li>▪ Credit Risk Environment</li> <li>▪ Credit Granting Process</li> <li>▪ Credit Administration, Measurement and Monitoring Process</li> </ul>
<b>Control Variables</b>	
Bank Size	<ul style="list-style-type: none"> <li>▪ Measured as log of total assets in Kshs.</li> </ul>
Interest Rate	<ul style="list-style-type: none"> <li>▪ Central Bank Rate</li> </ul>

**Source, Researcher**

### **3.5.2 Test of Significance**

The R squared which is the co-efficient of determination showed the variation between the dependent and the independent variable. The Analysis of Variance (ANOVA) established the significance of the regression model in providing reliable results (confidence levels). The F-test was used to test for joint significance of all coefficients.

The significance of the variables in the regression model was measured or determined by the p value; whereby, if the p value of the variable is 0.05 (5%) and below, then the variable is deemed significant while where the p value co-efficient of the variable is above 0.05, then the relationship of the variables is deemed to be insignificant. The beta explained whether the relationship between the dependent and the independent variable was high or low, positive or negative; this was revealed by the value of the beta co-efficient.

## CHAPTER FOUR

### DATA ANALYSIS, RESULTS AND DISCUSSIONS

#### 4.1 Introduction

This chapter discusses the interpretation and presentation of the findings obtained from the field. The chapter presents the background information of the respondents, findings of the analysis based on the objectives of the study that included the relationship between credit risk management and non-performing loans in commercial banks in Kenya.

##### 4.1.1 Response Rate of the Study

**Table 4.1: Response rate of the study**

<b>Response</b>	<b>Frequency</b>	<b>Percentage</b>
Response	37	86.0
Non response	6	14.0
<b>Total</b>	<b>43</b>	<b>100.0</b>

**Source: Research Findings**

From the table above, the study targeted a population size of 43 respondents from which 37 filled in and returned the questionnaires making a response rate of 86%. This response rate was satisfactory to make conclusions on the relationship between credit risk management and non-performing loans in commercial banks in Kenya. According to Mugenda and Mugenda (2003), a response rate of 50% is adequate for analysis and reporting; a rate of 60% is good and a response rate of 70% and over is excellent. Based on the assertion, the response rate was considered to excellent.



## 4.2 Credit Risk Environment

### 4.2.1 Whether the Bank has a Sound Credit Risk Management System

**Table 4.2: Whether the bank has a sound credit risk management system**

<b>Response</b>	<b>Frequency</b>	<b>Percentage</b>
Yes	29	78.4
No	8	21.6
<b>Total</b>	<b>37</b>	<b>100.0</b>

**Source: Research Findings**

From the table above on whether the bank has a sound credit risk management system, the study found out that 78.4% of the respondents indicated the banks have sound financial systems while 21.6% indicated the banks did not have. The above information shows that most banks have a sound financial system.

### 4.2.2 Rate of Agreement on Establishment of Proper Credit Risk Environment

**Table 4.3: Establishment of proper credit risk environment**

<b>Response</b>	<b>Mean</b>	<b>Standard Deviation</b>
The board of directors approves the credit risk strategy and significant credit risk policies of the bank	3.92	.363
The banks credit risk strategy reflect the banks tolerance of risk	4.16	.553
The senior management in our bank develops policies and procedures for identifying, measuring, monitoring and controlling credit risk	4.38	.594
The senior management in our bank strictly implements the credit risk strategy approved by the board of directors	4.11	.809
The credit risk policies and procedures developed address credit risk in all the banks activities and at both the individual credit and portfolio levels	4.30	.618
Our bank identifies and manages credit risk inherent in all products and activities	4.35	.588
The bank subjects new credit products and activities to adequate risk management procedures and controls before being introduced or undertaken	4.43	.603

**Source: Research Findings**

Table 4.3 illustrates the respondents' rate of agreement on establishment of proper credit risk environment. According to the table, the majority of banks subject new credit products and activities to adequate risk management procedures and controls before being introduced or undertaken as shown by mean obtained from the study of 4.43. Also, the study found out that the majority of senior management in the commercial banks develops policies and procedures for identifying, measuring, monitoring and controlling credit risk as shown by the mean of 4.38. The study also shows majority that majority of the commercial banks identify and manage credit risk inherent in all products and activities as shown by mean of 4.35. The study also reveals that majority of credit risk policies and procedures developed by the commercial banks address credit risk in all the banks activities and at both the individual credit and portfolio levels as shown by a mean of 4.30.

The studies further showed that majority of the banks' credit risk strategy reflect the banks tolerance of risk as shown by the mean of 4.16 and that the senior management in the bank strictly implements the credit risk strategy approved by the board of directors as shown by a mean of 4.11 and the board of directors approves the credit risk strategy and significant credit risk policies of the bank as shown by a mean of 3.92.

### **4.2.3 The Extent the Banks have Established an Appropriate Credit Risk Environment**

**Table 4.4: Extent Banks Have Established an Appropriate Credit Risk Environment**

<b>Response</b>	<b>Frequency</b>	<b>Percentage</b>
Very Great Extent	5	13.5
Great extent	15	40.5
Moderate extent	13	35.1
Little extent	4	10.8
<b>Total</b>	<b>37</b>	<b>100.0</b>

**Source: Research Findings**

Table 4.4 illustrates the respondents' rate of agreement on the extent the banks have established appropriate credit risk environments. From the table, majority of the respondents agreed to a great extent that banks have established an appropriate credit risk environment as shown by 40.5%, 35.1% agreed to a moderate extent, 13.5% agreed to a very great extent while 10.8% agreed to a little extent. The above information shows that banks have established an appropriate credit risk environment.

### **4.2.4 How Lack of an Appropriate Credit Risk Environment Affect Non-performing Loans**

The study found that lack of appropriate credit risk environment leads to lack of evaluation of the borrowers, failure to account for risk associated with loan defaults and lack of use of credit reference Bureaus hence increasing the chances of loan defaults hence increase in the non-performing loans.

### 4.3 Sound Credit Granting Process Effect on Non-performing Loans

In this section, the study sought to establish whether commercial banks in Kenya had a Sound Credit Granting Process and how this affected the level of non-performing loans.

The findings are presented below.

#### 4.3.1 Whether Credit Risk Management System Operate under a Sound Credit Granting Process

**Table 4.5: Credit Risk Management System Operate Under a Sound Credit Granting Process**

<b>Response</b>	<b>Frequency</b>	<b>Percent</b>
Yes	30	81.1
No	7	18.9
<b>Total</b>	<b>37</b>	<b>100.0</b>

**Source: Research Findings**

From the table above on whether credit risk management system operate under a sound credit granting process, the study found out that 81.1% of the respondents indicated the credit risk management system operate under a sound credit granting process while 18.9% indicated it does not. The above information shows that most banks' credit risk management system operates under a sound credit granting process. The poor credit granting process leads to increase in loan default hence reducing the revenue of most of the banks. The poor credit granting process is due to poor banks' policies on lending and credit risk assessment.

### 4.3.2 Extent of Agreement with Statements Relating to Operating Credit Process

**Table 4.6: Extent of agreement with statements relating to operating credit process**

<b>Response</b>	<b>Mean</b>	<b>Standard Deviation</b>
Our bank must operate within sound, well defined credit granting criteria	3.92	.493
Our bank has established overall credit limits both at individual borrowers and counterparties level	4.11	.567
Our bank has a clearly established process for approving new and refinancing of existing credits	4.11	.516
All extensions of credit must be made on an arms' length basis	4.38	.594

**Source: Research Findings**

From the extent of agreement with statements relating to operating credit process, the study found that all extensions of credit must be made on an arms length basis as shown by mean of 4.38, the bank has established overall credit limits both at individual borrowers and counterparties level and bank has a clearly established process for approving new and refinancing of existing credits as shown by the mean of 4.11 and that the bank must operate within sound, well defined credit granting criteria as shown by mean of 3.92.

### 4.3.3 The Extent that a Sound Credit Granting Process Affects Non-performing loans

**Table 4.7: Extent a sound credit granting process affects non-performing loans**

<b>Response</b>	<b>Frequency</b>	<b>Percent</b>
Very great extent	1	2.7
Great extent	17	45.9
Moderate extent	16	43.2
Little extent	3	8.1
<b>Total</b>	<b>37</b>	<b>100.0</b>

**Source: Research Findings**

From the findings on the extent that a sound credit granting process affects non-performing loans, the study found that majority of the respondents agreed to a great extent that a sound credit granting process affects non-performing loans as shown by 45.9%, 43.2% agreed to a moderate extent, 8.1% agreed to a little extent while 2.7% agreed to a very great extent. The above information shows that a sound credit granting process affects non-performing loans.

#### **4.4 Credit Administration, Measurement and Monitoring Process**

In this section, the study sought to determine the extent to which banks maintains an appropriate credit administration measurement and monitoring process; and how it affects the level of non-performing loans.

##### **4.4.1 Extent that the Bank Maintains an Appropriate Credit Administration Measurement and Monitoring Process**

**Table 4.8: Maintaining an appropriate credit administration measurement and Monitoring Process**

<b>Response</b>	<b>Frequency</b>	<b>Percent</b>
Very Great Extent	7	18.9
Great extent	14	37.8
Moderate extent	11	29.7
Little extent	5	13.5
<b>Total</b>	<b>37</b>	<b>100.0</b>

**Source: Research Findings**

From the findings on the extent that the bank maintains an appropriate credit administration measurement, monitoring process, the study found that majority of the

respondents agreed to a great extent that a sound credit granting process affects non-performing loans as shown by 37.8%, 29.7% agreed to a moderate extent, 18.9% agreed to a very great extent while 13.5% agreed to a little extent. The above information shows that bank maintains an appropriate credit administration measurement, monitoring process.

#### **4.4.2 The Challenges Experienced in Maintaining Appropriate Credit Administration Measurement, Monitoring Process in the Banks**

The study revealed the challenges experienced in maintaining appropriate credit administration, measurement, monitoring process in the banks include lack of clients to disclose full information regarding their purpose of the loans and some clients take unsecured loans and then default.

#### **4.4.3 The Extent Credit Risk Management Influence the Level of Non-performing Loans**

**Table 4.9: Credit Risk Management and Level of Non-Performing Loans**

<b>Response</b>	<b>Mean</b>	<b>Std. Deviation</b>
Our bank has a system for monitoring the condition of individual credits, including determining the adequacy of provisions and reserves	3.76	.597
The rating system is consistent with the nature, size and complexity of our banks activities	3.81	.660
Our bank have information systems and analytical techniques that enable management to measure the credit risk inherent in all on and off balance sheet activities	4.05	.705
The management information system should provide adequate information on the composition of the credit portfolio	4.08	.759
Our bank take into consideration potential future changes in economic conditions when assessing individual credits and their credit portfolios	4.19	.739

**Source: Research Findings**

From the extent of agreement with statements relating to extent that credit risk management influence the level of non-performing loans, the study established majority of the respondents agreed that bank take into consideration potential future changes in economic conditions when assessing individual credits and their credit portfolios as shown by a mean of 4.19. The management information system should provide adequate information on the composition of the credit portfolio as shown by a mean of 4.08. Bank have information systems and analytical techniques that enable management to measure the credit risk inherent in all on and off balance sheet activities as shown by a mean of 4.05. Bank has a system for monitoring the condition of individual credits, including determining the adequacy of provisions and reserves as shown by mean of 3.76. The rating system is consistent with the nature, size and complexity of our banks activities as shown by the mean of 3.81; and that the bank must operate within sound, well defined credit granting criteria as shown by mean of 3.92.

#### **4.4.4 How an Appropriate Credit Administration Measurement, Monitoring Process Affect the Non-performing Loans**

An appropriate credit administration measurement and monitoring process leads to evaluation of the borrowers before lending the loans, incorporation of a certain rate to incorporate risk defaults and incorporating different rates on different clients depending on their risks of default, this would lead to decrease in the number of non-performing loans.



#### **4.4.5 The Extent that Credit Risk Management Practices Adopted by the Bank Influence the Level of Non-performing Loans**

**Table 4.10: Credit Risk Management Practices and Level of Non-performing Loans**

<b>Response</b>	<b>Frequency</b>	<b>Percent</b>
Very Great Extent	7	18.9
Great extent	15	40.5
Moderate extent	11	29.7
Little extent	4	10.8
<b>Total</b>	<b>37</b>	<b>100.0</b>

**Source: Research Findings**

From the findings on the extent that credit risk management practices adopted by the bank influence the level of non-performing loans, the study found that majority of the respondents agreed to a great extent that credit risk management practices adopted by the bank influence the level of non-performing loans as shown by 40.5%, 29.7% agreed to a moderate extent, 18.9% agreed to a very great extent while 10.8% agreed to a little extent. The above information shows that credit risk management practices adopted by the bank influence the level of non-performing loans.

#### **4.5 Regression Analysis**

In this study, a multiple regression analysis was conducted to test the influence among predictor variables. The research used statistical package for social sciences (SPSS V 20) to code, enter and compute the measurements of the multiple regressions.

**Table 4.11: Regression Analysis Model Summary**

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.887	.787	.752	.26548

**Source: Research Findings**

From the table above, R is the correlation coefficient which shows the relationship between the study variables, from the findings shown in the table below there was a strong positive relationship between the study variables as shown by R 0.887 at 5% significance level. The Adjusted R squared is coefficient of determination which tells us the variation in the dependent variable due to changes in the independent variable, from the findings in the table below the value of adjusted R squared was 0.752 an indication that there was variation of 75% on non - performing loans due to changes in credit risk environment, credit granting process and credit administration, measurement and monitoring process at 95% confidence interval. This is an indication that 75% of the changes in credit risk management could be accounted for by the independent variables.

**Table 4.12: Analysis of Variance Table**

Model	Sum of Squares	df	Mean Square	F	Sig.	
	Regression	3.256	4	0.814	3.524	
	Residual	7.854	34	0.231		
	<b>Total</b>	<b>11.11</b>	<b>38</b>			

**Source: Research Findings**

From the table above, the processed data, which is the population parameters, had a significance level of 2.6% which shows that the data is ideal for making a conclusion on the population's parameter as the value of significance (p-value) is less than 5%. The F critical at 5% level of significance, 4 d.f, 34 d.f was 2.65, while F computed was 3.524, since F calculated is greater than the F critical (value = 2.65), this shows that the overall model was significant.

**Table 4.13: Coefficients Results**

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	.410	.440		3.209	.000
Risk Identification	-.316	.129	-.026	-1.115	.018
Risk Monitoring	-.325	.112	-.152	-1.121	.026
Risk analysis and appraisal	-.397	.125	-.262	-1.863	.033
Bank Size	.346	.118	.197	1.773	.025
Interest rates	.417	.134	.271	1.934	.039

**Source: Research Findings**

$$Y = 0.410 - 0.316 X_1 - 0.325 X_2 - 0.397 X_3 + 0.346X_4 + 0.417X_5$$

From the regression equation above it was found that holding risk identification, risk monitoring, risk analysis and appraisal, bank size and interest rates to a constant zero, non-performing loans will be 0.410, a unit increase in risk identification would lead to decrease in non-performing loans by 0.316 units, a unit increase in risk monitoring would lead to decrease in non-performing loans by 0.325 units, a unit increase in risk analysis and appraisal would lead to decrease in non-performing loans by 0.397 units, a unit increase in bank size would lead to increase in non-performing loans by 0.346 units

while a unit increase in interest rates would lead to increase in non-performing loans by 0.417 units.

At 5% level of significance and 95% level of confidence, risk identification had a 0.018 level of significance; risk monitoring had a 0.026 level of significance, risk analysis and appraisal had a 0.033 level of significance, bank size had 0.029 while interest rates 0.039. All the variables were significant ( $p < 0.05$ ).

#### **4.6 Interpretation of the Findings**

The study found out that the banks identified and managed credit risk inherent in all products and activities. The study also found out that the senior management of the banks developed policies and procedures for identifying, measuring, monitoring and controlling credit risk. The senior management in the bank also strictly implemented the credit risk strategy approved by the board of directors and the board of directors approves the credit risk strategy and significant credit risk policies of the bank. This is in line with Basel (1999), who revealed that in establishing a proper credit risk environment, the board of directors and the senior management have responsibility for approving, reviewing for implementing the credit risk strategy procedures in the banks.

The study further found out that most banks had established an appropriate credit risk environment, and that the banks operated under a sound credit granting process. The respondents further agreed to a great extent that a sound credit granting process affects non-performing loans. This is also in line with Basel Committee (1999) who revealed that banks must operate within sound, well-defined credit-granting criteria. These criteria should include a clear indication of the bank's target market and a thorough

understanding of the borrower or counterparty, as well as the purpose and structure of the credit, and its source of repayment.

The study also found out that poor credit granting process leads to increase in loan default hence reducing the revenue of most of the banks. The poor credit granting process is due to poor banks' policies on lending and credit risk assessment. These findings are in agreement with those of Haneef et al. (2012) who revealed that non-performing loans are increasing due to lack of risk management which threatens the profitability of banks. The findings also conforms with those Negera (2012) who indicated that poor credit assessment, failed loan monitoring, underdeveloped credit culture, lenient credit terms and conditions, aggressive lending, compromised integrity led to loan default.

The study found out that an appropriate credit administration measurement and monitoring process leads to evaluation of the borrowers before lending the loans, incorporation of a certain rate to incorporate risk defaults and incorporating different rates on different clients depending on their risks of default, this would lead to decrease in the number of non-performing loans. According to Basel (1999), banks should have in place a system for the ongoing administration of their various credit risk-bearing portfolios. Banks must have in place a system for monitoring the condition of individual credits, including determining the adequacy of provisions and reserves; and third, they are encouraged to develop and utilise an internal risk rating system in managing credit risk.

## **CHAPTER FIVE**

### **SUMMARY, CONCLUSION AND RECOMMENDATIONS**

#### **5.1 Introduction**

This chapter presents the discussion of key data findings, conclusion drawn from the findings highlighted and recommendation made there-to.

#### **5.2 Summary**

The study findings show that most bank have a sound credit risk management system, that the bank subjects new credit products and activities to adequate risk management procedures and controls before being introduced or undertaken. The senior management of the banks develops policies and procedures for identifying, measuring, monitoring and controlling credit risk. Bank identifies and manages credit risk inherent in all products and activities. The credit risk policies and procedures developed address credit risk in all the banks activities and at both the individual credit and portfolio levels. The banks credit risk strategy reflects the banks tolerance of risk. The senior management in the bank strictly implements the credit risk strategy approved by the board of directors and the board of directors approves the credit risk strategy and significant credit risk policies of the bank. The study further established that most banks have established an appropriate credit risk environment, lack of appropriate credit risk environment leads to lack of evaluation of the borrowers, failure to account for risk associated with loan defaults and lack of use of credit reference Bureaus hence increasing the chances of loan defaults hence increase in the non-performing loans.

The study revealed that most banks in Kenya operate under a sound credit granting process. The poor credit granting process leads to increase in loan default hence reducing the revenue of most of the banks. The poor credit granting process is due to poor banks' policies on lending and credit risk assessment. The study found that all extensions of credit must be made on an arm's length basis, the bank has established overall credit limits both at individual borrowers and counterparties level and bank has a clearly established process for approving new and refinancing of existing credits and that the bank must operate within sound, well defined credit granting criteria represented by mean of 3.92 and a sound credit granting process affects non-performing loans.

The study established that majority of the respondents agreed to a great extent that a sound credit granting process affects non-performing loans represented by 37.8%, 29.7% agreed to a moderate extent, 18.9% agreed to a very great extent while 13.5% agreed to a little extent. The above information shows that bank maintains an appropriate credit administration measurement, monitoring process. The study revealed the challenges experienced in maintaining appropriate credit administration, measurement, monitoring process in the banks include lack of clients to disclose full information regarding their purpose of the loans and some clients take unsecured loans and then default.

The study established majority of the respondents agreed to a great extent that bank take into consideration potential future changes in economic conditions when assessing individual credits and their credit portfolios. The management information system should provide adequate information on the composition of the credit portfolio. Banks have information systems and analytical techniques that enable management to measure the credit risk inherent in all on and off balance sheet activities. Bank has a system for

monitoring the condition of individual credits, including determining the adequacy of provisions and reserves. The rating system is consistent with the nature, size and complexity of our banks activities and that the bank must operate within sound, well defined credit granting criteria. The study further revealed that an appropriate credit administration measurement and monitoring process leads to evaluation of the borrowers before lending the loans, incorporation of a certain rate to incorporate risk defaults and incorporating different rates on different clients depending on their risks of default, this would lead to decrease in the number of non-performing loans. The study further revealed that credit risk management practices adopted by the bank influence the level of non-performing loans to a great extent.

Finally the study revealed that risk identification, risk monitoring and risk analysis and appraisal would lead to decrease in non-performing loans while bank size and interest rates would lead to increase in non-performing loans.

### **5.3 Conclusion**

The study concluded that most banks have a sound credit risk management system and the senior management of the banks develop policies and procedures for identifying, measuring, monitoring and controlling credit risk. Most banks have established an appropriate credit risk environment, lack of appropriate credit risk environment leads to lack of evaluation of the borrowers, failure to account for risk associated with loan defaults and lack of use of credit reference Bureaus hence increasing the chances of loan defaults hence increase in the non-performing loans. The study further concludes that most banks in Kenya operate under a sound credit granting process and poor credit granting process leads to increase in loan default hence reducing the revenue of most of



the banks. The challenges experienced in maintaining appropriate credit administration, measurement, monitoring process in the banks include lack of clients to disclose full information regarding their purpose of the loans and some clients take unsecured loans and then default.

The study finally concludes that banks take into consideration potential future changes in economic conditions when assessing individual credits and their credit portfolios. The management information system should provide adequate information on the composition of the credit portfolio. Credit risk management practices adopted by the bank influence the level of non-performing loans to a great extent and that risk identification, risk monitoring and risk analysis and appraisal would lead to decrease in non-performing loans while bank size and interest rates would lead to increase in non-performing loans.

#### **5.4 Recommendations for Policy**

The Kenyan market is currently experiencing an improvement in information sharing following the implementation of credit reference bureaus. This will over time reduce information asymmetries that exist in the market today for most banks. However banks must respond to this by combining this information with different credit risk management techniques used to evaluate the clients by reviewing the lending terms and conditions of the clients.

The overall responsibility of risk management vests in bank's board. The board should outline risk management strategy and formulate well-defined policies and procedures. Risk management department be made on portfolio or business line basis, to adopt a

holistic approach judging the overall risk exposure in assessing and managing risk profile of the bank.

Wherever possible risks exists risks should be quantitatively measured and reported, the risk review function should be independent of those who take risk and banks should have contingency plans for any abnormal or worst case scenarios.

### **5.5 Limitations of the study**

The researcher experienced some challenges that could have limited the achievement of the study objectives. One of the limitations was lack of cooperation from the respondents in terms of availing the information in time, some never responded. Some of the commercial banks were unwilling to give information. However, the researcher overcame this challenge by informing the management of the banks on the actual purpose of the study.

On the other hand, some respondents limited the information they gave. This was probably because credit risk is a sensitive issue to the banks and thus limiting some of the information that they gave. However, researcher also assured the respondents and the management at large that the information would be used for academic purposes only.

Others only gave scanty information on some questions were not allowed to give deep details or information and they feared being victimized by Management for giving such information. In order to ensure that such occurrences were not experienced, all identities of each respondent were concealed. This entailed using questionnaires that was not prompt the disclosure of lots of one's identity.

## **5.6 Suggestions for Further Research**

The study suggests that a further study should be undertaken to investigate the effect of the Credit Referencing Bureau in Kenya on the Access of Credit Facilities from Kenyan commercial banks. Further analysis should also be carried out to find out the credit risk management strategies that commercial banks use.

## REFERENCES

- Abiola, I., & Olausi, A.S. (2014). The Impact Of Credit Risk Management On The Commercial Banks Performance In Nigeria. *International Journal of Management and Sustainability*, 3(5): 295-306
- Afriyie, H.O., & Akotey, J.O. (Credit Risk Management and Profitability of Rural Banks in the Brong Ahafo Region of Ghana. *European Journal of Business and Management*. Vol.5, No.24.
- Ahmed, J.U. (2010). *An Empirical Estimation of Loan Recovery and Asset Quality of Commercial Banks; The NEHU Journal*, Vol.8 (1).
- Ahmed, S.Z (2006). *An investigation of the relationship between Non-performing loans, macroeconomic factors, and financial factors in context of private commercial banks in Bangladesh*. Independent University, Bangladesh.
- Al-Tamimi, H. & Al-Mazrooei M., (2007), Banks' Risk Management: A Comparison Study of UAE National and Foreign Banks, *The Journal of Risk Finance*, Vol. 8 No.4, pp. 394-409.
- Anthony, M.C. (1997). "*Commercial Bank Risk Management; An analysis of the Process*". The Wharton school. University of Pennsylvania. Financial institutions Centres.
- Barr, R.L.S. & Siems, T. (1994), "Forecasting Banking Failure: A Non-Parametric Frontier estimation Approach", *Researches Economiques de Lovain* (60): 417-429
- Basel Committee on Banking Supervision (1999). "*Principles for the Management of Credit Risk*", CH – 4002 Basel, Switzerland Bank for International Settlements.
- Basel Committee on Banking Supervision (2001). "*Risk Management Practices and Regulatory Capital: Cross-sectional Comparison*". Basel Committee on Banking Supervision, [www.bis.org](http://www.bis.org)
- Basel Committee on Banking Supervision (2006). "*Studies on Credit Risk Concentration*", An Overview of the Issues and a Synopsis of the Results' from the research Task Force Project. [www.bis.org](http://www.bis.org)
- Basel Committee on Banking Supervision, (1999). "*Principles for the management of credit risk*", available at: [www.bis.org/publ/pcbs54.htm](http://www.bis.org/publ/pcbs54.htm)

- Basel Committee on Banking Supervision, (2000). "Credit rating and complementary sources of credit quality information", working paper, No.3.
- Berger, A.N. & DeYoung, R (1997). "*Problem loans and cost efficiency in commercial banks*," *Journal of Banking & Finance*, Elsevier, vol. 21(6), pages 849-870, June.
- Bessis, J. (2002): *Risk Management in Banking*, John Wiley & Sons,
- Biabani, S., Gilaninia, S., Mohabatkhah, H., (2012). Assessment of Effective Factors on Non-Performing Loans (NPLs) Creation: Empirical Evidence from Iran (2006-2011). *Journal of Basic and Applied Scientific Research*, 2(10)10589-10597
- Borbora. (2007). *Management of Non-Performing Assets (NPAs) in the Urban Cooperative Banks (UCBs)*, Reserve Bank of India, [Online], URL: <http://www.cab.org.in/Lists/Knowledge%20Bank/Attachments/26/NPA%20MANAGEMENT.pdf>
- Brownbrige, M. (1998), "*The Causes of Financial Distress in Local Banks in Africa and Implications for Prudential Policy*", UNCTAD OSG/DP/132
- Central bank of Kenya Annual Report (2010).
- Central Bank of Kenya, (2005). *Risk Management Survey for the Banking Sector*. CBK, Nairobi.
- Central Bank of Kenya, (2010). *Bank Supervision Annual Report*. CBK, Nairobi.
- Central Bank of Kenya, (2010). *Risk Management Survey for the Banking Sector*. CBK, Nairobi.
- Chand, S., (2002). *Financial Sector Development and Economic Growth in Pacific Island Countries*. Pacific Economic Bulletin, 17(1), 117-133.
- Chandra, S., & Shadel, W.G. (2007). "Crossing disciplinary boundaries: Applying financial portfolio theory to model the organization of the self-concept". *Journal of Research in Personality* 41 (2): 346–373.
- Chandran, E. (2004). *Research methods: A quantitative approach*. Nairobi: Daystar University
- Christopher, J. (1996). Scholarly article on "*an analysis of commercial bank exposure to credit risk*". Wharton school center for financial institutions.

- Collins, N.J., & Wanjau, K. (2011). The Effects of Interest Rate Spread on the Level of Non-Performing Assets: A Case of Commercial Banks in Kenya, *International Journal of Business and Public Management*, Vol. 1(1).
- Cooper, D.R. & Schindler, P.S. (2006). Business research methods (9th ed.). Boston: McGraw-Hill/Irwin.
- Cooper, D.R. and Schindler, P.S. (2003). *Business research methods*. (8th ed.). New Delhi: Tata Mc Graw-Hill Publishing Company Ltd.
- Crowley, J., 2007. *Interest Rate Spreads in English-Speaking Africa*. IMF Working Paper. April 2007, 123-45
- Demirguc-Kunt, A., & Detragiache, E. (1998), "The Determinants of Banking Crises in Developing and Developed Countries", IMF Staff Paper 45 (1): 81-109
- Dickson, G.C.A., & Hastings, W.J. (1989), Corporate Risk Management, Witherby & Co., London,
- Ekrami, M. & Rahnema, E. A. (2009). "Investigating of effecting factors in NPLs creation", economic researches, 6: 195-216
- Gakure R.W., Ngugi, J.K., Ndwiga P.M., Waithaka, S.M. (2012). Effect of credit risk management techniques on the performance of unsecured bank loans employed commercial banks in Kenya. *International Journal of Business and Social Research (IJBSR)*, Volume -2, No.-4.
- Gastineau G. L. (1992). *Dictionary of Financial Risk Management*, Swiss Bank Corporation, Chicago.
- Greene, M.R., & Trieschmann, J.S. (1984), *Risk and Insurance*, South-Western Publishing Co., Cincinnati, OH.
- Greenidge, K., & Grosvenor, T., (2010). Forecasting non-performing loans in Barbados. *Journal of Business, Finance and Economics in Emerging Economies*, 5, 80-107
- Greuning, H., & Iqbal, Z. (2007), "Banking and Risk Environment" in Archer, S. and Karim, R. A. A. 2007, "Islamic Finance: The Regulatory Challenge", John Wiley & Son (Asia) Pte Ltd.
- Haneef, S., Riaz, T., Ramzan, M., Rana, M. A. Ishaq, H. M. and Karim Y. (2012). Impact of Risk Management on Non-Performing Loans and Profitability of Banking

Sector of Pakistan. *International Journal of Business and Social Science* Vol. 3  
No. 7.

Heffernan, S., (1996). *Modern banking in theory and practice*, John Wiley and Sons,  
Chichester

Hull, J.C. (2007), "Risk Management and Financial Institutions", Pearson Education,  
New Jersey.

International Monetary Fund, (2005). Clarification and Elaboration of Issues Raised by  
the December 2004 Meeting of the Advisory Expert Group of the Intersecretariat  
Working Group on National Accounts. <http://www.imf.org/external/pubs/ft/bop/2005/05-29.pdf>

IRM & AIRMIC & ALARM, (2002). Risk Management Standard, London, UK: Institute  
of Risk Management (IRM), The Association of Insurance and Risk Managers  
(AIRMIC) and The National Forum for Risk Management in the Public Sector  
(ALARM), [http://www.theirm.org/publications/documents/Risk\\_Management\\_Standard\\_030820.pdf](http://www.theirm.org/publications/documents/Risk_Management_Standard_030820.pdf)

Jamaat, A., & Asgari, F. (2010). "Credit risk management in banking system with data  
mining approach", quarterly magazine of quantity studies in management,  
1(3):115-126

Jimenez, G., and Saurina, J. (2005), "Credit cycles, credit risk, and prudential  
regulation", Banco de Espana, May 2007.

Keeton, W. & Morris, C.S. (1987). "Why Do Banks' Loan Losses Differ?" Federal  
Reserve Bank of Kansas City, Economic Review, (May): 3-21.

Kithinji, M.A. (2010). *Credit Risk Management and Profitability Of Commercial Banks  
In Kenya*. University of Nairobi MBA Project.

Klein, N. (2013). *Non-Performing Loans in CESEE: Determinants and Macroeconomic  
Performance*, IMF Working Paper, WP/13/72. <http://www.imf.org/external/pubs/ft/wp/2013/wp1372.pdf>

Kumbirai, M., & Webb, R. (2010). A financial Ratio Analysis of Commercial Bank  
Performance in South Africa, *African Review of Economics and Finance*, Vol. 2  
No.1, pp. 30-53.

- Lintner, J. (1965). The valuation of risk assets and the selection of risky investments in stock portfolios and capital budgets, *Review of Economics and Statistics*, 47, 13-37.
- Margrabe, W. (2007). *Credit risk management of commercial loan portfolio*.
- Markowitz, H. (1952). Portfolio Selection. *Journal of Finance*, 12, 71-91.
- Matten, C. (2000). *Managing bank capital: Capital allocation and performance measurement* (2 ed.). New York: John Wiley & Sons, Ltd.
- Morton, G. (2003). “*Managing Bank Risk*”, Academic Press.
- Muasya, A.M (2013). *The Relationship between Credit Risk Management Practices and Loans Losses - A Study on Commercial Banks in Kenya*. Unpublished Research Project, University of Nairobi.
- Mwithi, S. (2012). *Practices and the level of non-performing loans of Microfinance institutions in Nyeri County*. Unpublished Research Project, University of Nairobi.
- Ngugi, R.W., (2001). An Empirical Analysis of Interest Rate Spread in Kenya. African Economic Research Consortium, Research Paper 106
- Nocco, B.W. and Stulz, R.M. (2006), *Enterprise Risk Management: Theory and Practice*, Ohio State University
- Panta, R., (2007). Challenges in Banking: A Nepalese Diaspora, Socio-Economic Development Panorama, Vol. 1(2), 9 -22
- Pausenberger, E., & Nassauer, F. (2002), *Governing the Corporate Risk Management Function*, in Frenkel, M. Hommel, U. and Rudolf, M. 2005, Risk Management: Challenge and Opportunity, Springer.
- Prudential Guidelines (2006). <https://www.centralbank.go.ke/index.php/regulations-and-guidelines>
- Ranjan & Dhal, (2003), “*Non-Performing Loans and Terms of Credit*”, RBI Occasional Papers, winter, Vol. 24, No. 3, pp. 81-121
- Richardson, D.C (2002) PEARLS Monitoring system World Council information center. Maddison, WI, WOCCU Toolkit series NO.4
- Robson, C. (2002). *Real World Research*. Blackwell, (2nd edition)



- Rossi, S., Schwaiger, M., & Winkler, G. (2005), “*Managerial Behaviour and Cost/Profit Efficiency in the Banking Sectors of Central and Eastern European Countries.*” Working Paper No. 96, Austrian National Bank.
- Rouse C. N. (1989). *Bankers’ Lending Techniques*, Chartered Institute of Bankers Publication.
- Saita, F. (2007). *Value at Risk and Bank Capital Management. Risk Adjusted Performances, Capital Management, and Capital Allocation Decision Making.* Academic Press Advances Financial Series, 2007, Elsevier Inc.
- Salas, V., & Saurina, J. (2002), “Credit Risk in Two Institutional Regimes: Spanish Commercial and Savings Banks.” *Journal of Financial Services Research* 22 (3): 203–24.
- Saunders, A., & Cornett, M. (2007). *Financial Markets and Institutions; an Introduction to the Risk Management Approach.* McGraw Hill Pub.
- Sharpe, William F. (1964). Capital asset prices: A theory of market equilibrium under conditions of risk, *Journal of Finance*, 19 (3), 425-442.
- Simkovic, M., & Kaminetzky, B., (2011). Leveraged Buyout Bankruptcies, the Problem of Hindsight Bias, and the Credit Default Swap Solution (August 29, 2010). *Columbia Business Law Review*, Vol. 2011, No. 1, p. 118.
- Strutt, J. (2003). *Risk assessment and management: the engineering approach*, Centre for Industrial Safety and Reliability, Cranfield University, unpublished paper.
- Tchankova, L. (2002). Risk Identification – Basic Stage in Risk Management, Environmental. *Management and Health*, Volume 13, Number 3, pp. 290-297.
- Tobin, J. (1958). Liquidity preference as behavior towards risk, *The Review of Economic Studies*, 25, 65-86.
- Treynor, Jack (1961). Towards a theory of market value of risky assets, unpublished manuscript.

**Appendix I: Questionnaire**

**Instructions:** Tick appropriately or write down your answer in the space provided. Your cooperation and feedback is valued and highly appreciated.

**Section A: Credit Risk Environment**

1. Does your bank have a sound credit risk management system?

Yes ( ) No ( )

b). Explain your answer.....  
 .....  
 .....

2.To what extent do you agree with the following statement on establishing a proper credit risk environment in your bank? Rate using a scale of 1 to 5 where 5 is strongly agree, 4 is Agree, 3 is Neutral, 2 is Disagree and 1 is Strongly disagree.

<b>Credit Risk Environment</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>
The board of directors approves the credit risk strategy and significant credit risk policies of the bank.					
The banks credit risk strategy reflect the bank’s tolerance for risk					
The senior management in our bank strictly implements the credit risk strategy approved by the board of directors					
The senior management in our bank develops policies and procedures for identifying, measuring, monitoring and controlling credit risk.					
The credit risk policies and procedures developed address credit risk in all the bank’s activities and at both the individual credit and portfolio levels.					
Our bank identifies and manages credit risk inherent in all products and activities.					
The bank subjects new credit products and activities to adequate risk management procedures and controls before being introduced or undertaken					

3. On overall, to what extent has your bank established an appropriate credit risk environment?

Very great extent ( )      Great extent ( )      Moderate extent ( )

Little extent ( )      No extent ( )

4. How does lack of an appropriate credit risk environment affect non-performing loans?.....

.....  
.....

**Section B: Sound Credit Granting Process**

5. a). Does your credit risk management system operate under a sound credit granting process

Yes ( )      No ( )

b). If No above, how does a poor credit granting process affect non-performing loans in your bank? .....

.....  
.....

c). If No in 5 (a) above, what are the hindering factors? .....

.....  
.....

6. To what extent do you agree with the following statements about the on the operating credit process in your bank? Rate using a scale of 1 to 5 where 5 is strongly agree, 4 is Agree, 3 is Neutral, 2 is Disagree and 1 is Strongly disagree.

<b>Risk analysis</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>
Our bank must operates within sound, well-defined credit-granting criteria					
Our bank has established overall credit limits both at individual borrowers and counterparties level.					
Our bank has a clearly established process for approving new and re-financing of existing credits					
All extensions of credit must be made on an arm's-length basis.					

7. On overall, to what extent does a sound credit granting process affects non-performing loans in your bank?

Very great extent ( )      Great extent ( )      Moderate extent ( )  
 Little extent ( )      No extent ( )

b) Explain your answer.....  
 .....  
 .....

**Section C: Credit Administration, Measurement and Monitoring Process**

8. To what extent does bank maintain an appropriate credit administration measurement, monitoring process?

Very great extent ( )      Great extent ( )      Moderate extent ( )  
 Little extent ( )      No extent ( )

9. Which are the challenges experienced in maintain an appropriate credit administration measurement, monitoring process in your bank?

.....  
 .....  
 .....

10. To what extent does the following credit risk management influence the level of non-performing loans? Use a scale of 1 to 5 where to a very great extent, 4 is to a great extent, 3 is to a moderate extent, 2 is to a little extent while 1 is to no extent

	1	2	3	4	5
Our bank has a system for monitoring the condition of individual credits, including determining the adequacy of provisions and reserves					
The rating system is consistent with the nature, size and complexity of our bank's activities					
Our bank have information systems and analytical techniques that enable management to measure the credit risk inherent in all on- and off-balance sheet activities					
The management information system should provide adequate information on the composition of the credit portfolio.					
Our bank take into consideration potential future changes in economic conditions when assessing individual credits and their credit portfolios					

11. How does an appropriate credit administration measurement, monitoring process affect the non-performing loans? .....

.....  
 .....

12. On overall, to what extent does the credit risk management practices adopted by your bank influence the level of non-performing loans?

- To a very great extent ( )      To a great extent ( )  
 To a moderate extent ( )      To a little extent ( )  
 To no extent ( )

**THANK YOU FOR YOUR PARTICIPATION**

## **Appendix II: Licensed Commercial Banks in Kenya**

1. African Banking Corporation
2. Bank of Africa
3. Bank of Baroda
4. Bank of India
5. Barclays Bank of Kenya
6. Cfc Stanbic bank
7. Chase bank
8. Charter House Bank(Under statutory Management)
9. Citibank
10. Credit Bank
11. Co-operative bank of Kenya
12. Commercial Bank of Africa
13. Consolidated bank
14. Development bank of Kenya
15. Diamond Trust bank
16. Dubai bank
17. Eco bank
18. Equatorial Commercial Bank
19. Equity bank
20. Family bank
21. Fidelity Commercial bank
22. Fina bank
23. First Community Bank
24. Giro commercial bank
25. Guardian bank
26. Gulf African Bank
27. HabibA.G.Zurich
28. Habib bank
29. Imperial Bank
30. Investment and Mortgages bank

31. K-Rep bank
32. Kenya Commercial bank
33. Jamii Bora Bank
34. Middle East bank
35. National bank of Kenya
36. National Industrial Credit bank
37. Oriental Commercial bank
38. Paramount Universal bank
39. Prime Bank
40. Standard Chartered bank
41. Trans-National bank
42. UBA Kenya Limited
43. Victoria Commercial bank

**Source:** Central Bank of Kenya (CBK) Website