

**THE EFFECT OF FINANCIAL RISK MANAGEMENT ON THE
FINANCIAL PERFORMANCE OF COMMERCIAL BANKS IN
KENYA**

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DECLARATION

I hereby declare that this research project is my original work and it has not been presented for a degree in any University.

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

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DEDICATIONS

To my family, my dear wife Susan Githinji, my son Ryan Githinji and my newly born daughter Itzel Githinji (10/10/2013) for the continued encouragement and understanding while I undertook the project. Finally to my dear parents, Francis and Martha, for making me realize the unending value of knowledge.

ABSTRACT

In the last two decades, the financial risk management has gained an important role for financial institutions. Risk management is one of the most important practices to be used especially in banks in order to get higher returns. In today's dynamic environment, nothing is constant but risk. Banks are exposed to a variety of risks including credit risk, liquidity risk, foreign exchange risk, market risk and interest rate risk. An efficient risk management system is the need of time. Managing risk is one of the basic tasks to be done, once it has been identified and known. The risk and return are directly related to each other, which means that increasing one will subsequently increase the other and vice versa.

The purpose of this study was to analyze the effect of financial risk management on the financial performance of commercial banks in Kenya. In achieving this objective, the study assessed the current risk management practices of the commercial banks and linked them with the banks' financial performance. Return on Assets (ROA) was averaged for five years (2008-2012) to proxy the banks' financial performance. To assess the financial risk management practices, a self-administered survey questionnaire was used across the banks. The study used multiple regression analysis in the analysis of data and the findings were presented in the form of tables and regression equations.

The study found out that majority of the Kenyan banks were practicing good financial risk management and as a result the financial risk management practices mentioned herein have a positive correlation to the financial performance of commercial banks in Kenya. Although there was a general understanding about risk and its management among the banks, the study recommends that banks should devise modern risk measurement techniques such as value at risk, simulation techniques and Risk-Adjusted Return on Capital. The study also recommends use of derivatives to mitigate financial risk as well as develop training courses tailored to the needs of banking personnel in risk management.

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LIST OF ABBREVIATIONS

BCBS-	Basel Committee on Banking Supervision
CAMEL-	Capital adequacy, Asset quality, Management Efficiency and Liquidity
CAPM-	Capital Asset Pricing Model
CBK-	Central Bank of Kenya
CL-	Classified Loan
CRO-	Chief Risk Officer
FX-	Foreign Exchange
GCC-	Gulf Cooperation Council
IMF-	International Monetary Fund
KMV-	Kealhofer, McQuown and Vasicek
LA-	Loan and Advances
LLP-	Loan Loss Provision
MFC-	Mortgage Finance Company
MPT-	Modern Portfolio Theory
NPL-	Non-Performing Loan
RAROC-	Risk-Adjusted Return on Capital
RMI-	Risk Management Index
ROA-	Return on Asset
ROE-	Return on Equity
UAE-	United Arab Emirate

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CHAPTER ONE: INTRODUCTION

1.1 Background to the Study

In the epicenter of the modern financial theory we have paramount ideas that are relevant for managers planning risk management strategies. One such overriding idea is that investors require higher returns to take on higher levels of risk. Investors therefore require risk premium for the risk that they can't eliminate through diversification. Risk-taking is therefore an inherent element of banking and, indeed, profits are in part the reward for successful risk taking in business. Risk may be often referred as the systematic or unsystematic risk. Systematic risk also referred as un-diversifiable risk or market risk is the risk that is inherent to the entire market or market segment. Unsystematic risk also known as diversifiable risk is the risk which is specific to a firm. Diversifiable risk can be managed through appropriate diversification.

The term financial risk may be used like an umbrella term for multiple types of risk associated with financing, including financial transactions that include company loans in risk of default. Jorion and Khoury (1996) say that financial risk arises from possible losses in financial markets due to movements in financial variables. It is usually associated with leverage with the risk that obligations and liabilities cannot be met with current assets. Our focus in this study will use the term financial risks to broadly cover credit risk, market (price) risk, interest rate risk, liquidity risk and foreign exchange risk. Financial risk may be caused by variation in interest rates, currency exchange rates, variation in market prices, default risk and liquidity gap that affect the cash flows and,

therefore its financial performance and competitive position in product markets. Indeed most of the Kenyan Commercial banks outline credit risk, liquidity risk, market risk, interest rate risk and foreign exchange risk as the most important types of financial risks they face. The Basel committee defines credit risk as the potential that a bank borrower or counterparty will fail to meet its obligations in accordance with the agreed terms. Liquidity Risk arises due to insufficient liquidity for normal operating requirements reducing the ability of banks to meet its liabilities when they fall due. BCBS (2000) defines Foreign exchange (FX) settlement risk as the risk of loss when a bank in a foreign exchange transaction pays the currency it sold but does not receive the currency it bought. FX settlement failures can arise from counterparty default, operational problems, market liquidity constraints and other factors. Market risk is the risk originating in instruments and assets traded in well-defined markets.

Financial Risk management can therefore be defined as a set of financial activities that maximizes the performance of a bank by reducing costs associated with the cash flow volatility. The manager's behavior toward risk (risk appetite and risk aversion) and corporate governance can affect the choice of risk management activities. Iqbal and Mirakhor (2007) notes that a robust risk management framework can help banks to reduce their exposure to risks, and enhance their ability to compete in the market. Today, banks financial risk management is one of the most important key functions in banking operations as commercial banks are in the risk business. Al-Tamimi and Al-Mazrooei (2007) notes that in today's dynamic environment, all banks are exposed to a large number of risks such as credit risk, liquidity risk, foreign exchange risk, market risk and

interest rate risk, among others – the risks which may create some source of threat for a bank's survival and success.

Diffu (2011) notes that the crisis that affected global financial stability and the economy in 2007-09 has reinforced the need to rethink some of the approaches adopted by the financial community in assessing bank performance. To this end, it is important to obtain a comprehensive view of the key factors that may influence banks' performance, including the adequacy of business models in relation to risk appetite, and the question of how this adequacy is handled inside and outside banks through governance processes. Against this backdrop, appropriate benchmarks, sensitivity analyses as well as stress tests ought to be considered in order to assess the real capability of banks to face stressed market conditions and absorb consecutive shocks on the basis of their business strategy and degree of risk tolerance. On this study looked at the extent to which the Bank's financial performance was affected by the management of the financial risks.

1.1.1 Financial Risk Management

Managing financial risk involves setting appropriate risk environment, identifying and measuring the banks risk exposure, mitigating risk exposure, monitoring risk and constructing controls for protecting the bank from financial risk. BCBS (2001) defines financial risk management as a sequence of four (4) processes: (1) the identification of events into one or more broad categories of market, credit, operational and other risks into specific sub-categories; (2) the assessment of risks using data and risk model; (3) the monitoring and reporting of the risk assessments on a timely basis; and (4) the control of

these risks by senior management. Because of the vast diversity in risk that banking institutions take, there is no single risk management guidelines for banking institutions prescribed risk management system that works for all. Each banking institution should tailor its risk management program to its needs and circumstances. However, given the critical role of banks for a modern market economy, the opacity of banks' balance sheets, the dispersion of banks' creditors – typically many small depositors – and the maturity transformation banks perform converting short-term deposits into medium- to long-term assets there is need for regulations in the banks. To this end banking has therefore historically been one of the most regulated sectors, with regulation ranging from licensing requirements to on-going supervision to a bank-specific failure regime and deposit insurance. Some of the regulations include the Basel I Accord, Basel II Accord, Basel III Accord as well as local regulations in Kenya banking sector.

The board and the senior management of the bank are responsible for creating the appropriate risk management environment. These include maintaining a risk management review process, appropriate limits on risk taking, adequate systems of risk measurement, a comprehensive reporting system, and effective internal controls. Procedures should include appropriate approval processes and limits and mechanisms designed to assure the bank's risk management objectives are achieved. In order to properly manage risks, an institution must recognize and understand risks that may arise from both existing and new business initiatives; for example, risks inherent in lending activity include credit, liquidity, interest rate and operational risks. Risk identification should be a continuing process, and should be understood at both the transaction and portfolio levels. Risk

identification is the basic step of risk management. This step reveals and determines the potential risks which are highly occurring and other events which occur very frequently. Risk is investigated by looking at the activity of organizations in all directions and attempting to introduce the new exposure which will arise in the future from changing the internal and external environment. Tcankova (2002) asserts that correct risk identification ensures risk management effectiveness.

Once risks have been identified, they should be measured in order to determine their impact on the banking institution's profitability and capital. This can be done using various techniques ranging from simple to sophisticated models. Accurate and timely measurement of risk is essential to effective risk management systems. An institution that does not have a risk measurement system has limited ability to control or monitor risk levels. Banking institutions should periodically test their risk measurement tools to make sure they are accurate. Good risk measurement systems assess the risks of both individual transactions and portfolios. After measuring risk, an institution should establish and communicate risk limits through policies, standards, and procedures that define responsibility and authority. These limits should serve as a means to control exposure to various risks associated with the banking institution's activities.

The most important risk management step is the risk mitigation where bank use all their expertise and different methods to mitigate their risk exposures. Risk can be mitigated through diversification and proper due diligence. Institutions may also apply various

mitigating tools in minimizing exposure to various risks. Institutions should have a process to authorize and document exceptions or changes to risk limits when warranted. Monitoring and review is an essential and integral step in the risk management process. Risk needs to be monitored to ensure the changing environment does not alter risk priorities and to ensure the risk management process is effective both in design and in operation. The organization should review at least on an annual basis.

Financial risk management has become a booming industry starting '90 as a result of the increasing volatility of financial markets, financial innovations (financial derivatives), the growing role played by the financial products in the process of financial intermediation, and important financial losses suffered by the companies without risk management systems (for example, Enron and WorldCom), Gheorghe and Gabriel (2008). Shafiq and Nasr (2010) also notes that Risk Management as commonly perceived does not mean to minimize risk; in fact, its goal is to optimize the risk-reward trade off. And, the role of risk management is to assure that an institution does not have any need to engage in a business that unnecessarily imposes risk upon it. Talel (2010) notes that risk management is still evolving in Kenya and therefore many institutions lack adequate information on effective risk management methodologies.

1.1.2 Financial Performance

Financial performance is the measuring of bank's policy and operations in monetary form. It also shows a bank's overall financial health over a period of time, and it helps to compare different banks across the banking industry at the same time. In his study

Toutou (2011) defined financial performance as a general measure of how well a bank generates revenues from its capital. Suka (2010) looked at financial performance as a subjective measure of how well a firm uses its assets from primary mode of business to generate revenue. In order to assess the financial performance of commercial banks there are a variety of indicators which may be used. Some of the major financial performance indicators include Return on Asset (ROA), Return on Equity (ROE), profitability and Risk-Adjusted Return on Capital (RAROC).

Return on Equity (ROE) is an internal performance measure of shareholder value, and it is by far the most popular measure of performance. ROE proposes a direct assessment of the financial return of a shareholder's investment. It is easily available for analysts, only relying upon public information; and it allows for comparison between different companies or different sectors of the economy.

$$\text{ROE} = \text{net income} / \text{average total equity}$$

ROE is sometimes decomposed into separate drivers known as the DuPont analysis,

Where:

$$\text{ROE} = (\text{result/turnover}) * (\text{turnover/total assets}) * (\text{total assets/equity}).$$

The first element is the net profit margin, the second element represents the efficiency of the assets and the last corresponds to the financial leverage multiplier. ROE reflects how effectively a bank management is using shareholders' funds. Thus, it can be deduced from the above statement that the better the ROE the more effective the management in utilizing the shareholders capital.

The Return on Assets (ROA) is the net income for the year divided by total assets, usually the average value over the year. ROA measures the ability of the bank management to generate income by utilizing company assets at their disposal. In other words, it shows how efficiently the resources of the company are used to generate the income. Khrawish, (2011) says that ROA indicates the efficiency of the management of a company in generating net income from all the resources of the institution.

Risk-Adjusted Return on Capital (RAROC) allows banks to allocate capital to individual business units according to their individual business risk. As a performance evaluation tool, it then assigns capital to business units based on their anticipated economic value added. RAROC is the key measures of bank profitability. The theoretical RAROC can be extracted from the one-factor CAPM as the excess return on the market per unit of market risk (the market price of risk). This measure takes into account the bank's cost of capital. RAROC adjusts the value-added in relation to the capital needed. However, literature is quite critical of this measure as a tool to analyse performance, essentially due to its thorough accounting basis, while it is then difficult to calculate RAROC without having access to internal data. Furthermore, it appears that RAROC may be appropriate for activities with robust techniques for measuring statistical risk, such as credit activity.

1.1.3 Effects of Financial Risk Management on Financial Performance

Efficient financial risk management is required in any organization as return and risk are directly related to each other meaning that increase in one will subsequently increase the other and vice versa. Fatemi and Fooladi (2006) notes that effective risk management

leads to more balanced trade-off between risk and reward, to realize a better position in the future. Shafiq and Nasr (2010) notes that the banking industry recognizes that an institution needs not do business in a manner that unnecessarily imposes risk upon it; nor should it absorb risk that can be efficiently transferred to other participants. Rather, it should only manage risks at the firm level that are more efficiently managed there than by the market itself or by their owners in their own portfolios. In short, it should accept only those risks that are uniquely a part of the bank's array of services.

Financial risk caused by variation in interest rates, currency exchange rates; default and poor liquidity management may have negative effects on the bottom-line of the bank. Athanasoglou et al. (2005) notes that bank risk taking has some effects on bank profits (Performance) as indicated by total assets, total deposit, net interest, margin and net income. Also Bobakovia (2003) notes that the profitability of a bank depends on its ability to foresee monitor and avoid risks, and possibility of provisions to cover losses brought about by risk that arises. Bikker & Metzmakers (2005) notes that the ultimate objective of risk management implementation is to maintain financial performance in the banking sector as aspects of financial risk management promote early warning system of monitoring relevant indicators; as well as stimulating and making provisions for possible realistic strains on the system by conducting stress testing.

1.1.4 Commercial Banks in Kenya

Commercial banks are financial intermediary institutions that take deposits and gives credit amongst other financial services. In Kenya, the banking sector plays a dominant

role in the financial sector, particularly with respect to mobilization of savings and provision of credit. As per Bank Supervision Annual Report (2012) the banking sector consisted of the Central Bank of Kenya, as the regulatory authority, 44 banking institutions (43 commercial banks and 1 mortgage finance company -MFC). Out of the 44 banking institutions, 31 locally owned banks comprise 3 with public shareholding and 28 privately owned while 13 are foreign owned. The foreign owned financial institutions comprise of 9 locally incorporated foreign banks and 4 branches of foreign incorporated banks. During the period 2008-2012, the Kenyan banking system showed resilience, which was attributed in part to the low financial integration in the global financial market and the intensive supervision and sound regulatory reforms (Bank Supervision Annual Report ,2009).

1.2 Research Problem

This subsection covers the conceptual discussion, contextual discussion and research studies on financial risk management and financial performance in commercial banks leading to the research question.

Commercial banks adopt different risk management practices majorly determined by; ownership of the banks (privately owned, foreign owned, publicly owned), risk policies of banks, banks regulatory environment and the caliber of management of the banks. Banks may however have the best financial risk management policies but may not necessarily record high financial performance. In addition although the Central Bank of Kenya issues regulating guidelines on financial risk management, risk management in banks may have different characteristics. Looking at the emphasis that is laid on financial

risk management by commercial banks in their financial statements, the level of contribution of this factor to financial performance need not to be underestimated.

The recent global financial crisis revealed the importance of bank regulations to hedge against high risks attributed to imbalances in banks' balance. René Stulz (2008) argued that there are five ways in which financial risk management systems can break down, all exemplified in the global crisis and other recent ones: failure to use appropriate risk metrics; miss-measurement of known risks; failure to take known risks into account; failure in communicating risks to top management; failure in monitoring and managing risks. Central Bank Supervision Report, 2005) indicates that many banks that collapsed in Kenya in the late 1990's were as a result of the poor management of credit risks which was portrayed in the high levels of nonperforming loans. It's important therefore to study how banks are managing the broader financial risk.

Oludhe (2010) in study for impact of credit risk management on financial performance of commercial banks in Kenya found that there was strong impact between CAMEL components on financial performance. The study mainly focused on one element of financial risk-credit risk. However there is little study that has been done in Kenya to establish how the broader financial risk management affects the financial performance of commercial banks in Kenya. This study therefore seeks to assess whether or not risk management is beneficial to commercial in Kenya. Specifically, the study aims to

empirically analyze the question: Does financial risk management practices have effect in the financial performance of the banks in Kenya?

1.3 Research Objective

To establish the effect of financial risk management on the financial performance of the commercial banks in Kenya.

1.4 Value of the Study

The study will contribute to the evolution of the important subject of financial risk management. Specifically, the study will explain the extent to which theoretical risk models such Value at Risk(VAR) are used by banks to measure the risks.

The study will provide insight in the most successful strategies banks use to handle financial risk. The findings of the study will assist Central Bank of Kenya in formulating guidelines that will enhance financial risk management in the banking sector. The study will also be important to the commercial banks that will be able to understand the risk management practices that contribute to financial performance of commercial banks and ensure that they undertake acceptable banking practices and procedures.

Academicians will benefit from the information of the study as the study will contribute to existing body of knowledge. The study will further provide the background information to research organizations and scholars and identify gaps in the current research for further research.

CHAPTER TWO: LITERATURE REVIEW

2.1 Introduction

This Chapter presents a review of literature related to the theme of the study; the first sub-section introduces theoretical review relating to risk management practises. The second sub-section is an overview of related empirical researches. Sub-section three looks at determinants of financial performance in banks.

2.2 Theoretical Literature Review

The section covers three most applicable theories of risk management. Subsection one will introduce the Modern Portfolio Theory. The other two subsection will cover the Moral Hazard Theory and Merton's Default risk Model.

2.2.1 Modern Portfolio Theory (MPT)

Modern portfolio theory (MPT) is a theory of finance that attempts to maximize portfolio expected return for a given amount of portfolio risk, or equivalently minimize risk for a given level of expected return, by carefully choosing the proportions of various assets. Prior to Markowitz's work, "Portfolio Selection," published in 1952 by the Journal of Finance, investors focused on assessing the risks and rewards of individual securities in constructing their portfolios intuitively. Markowitz formalized this intuition. Detailing mathematics of diversification, he proposed that investors focus on selecting portfolios based on those portfolios' overall risk-reward characteristics instead of merely compiling portfolios from securities that each individually has attractive risk-reward characteristics. This means that investors should select portfolios not individual securities. Treating

single-period returns for various securities as random variables, we could assign them expected values, standard deviations and correlations. Based on these, we can calculate the expected return and volatility of any portfolio constructed with those securities. We may treat volatility and expected return as proxies for risk and reward. Out of the entire universe of possible portfolios, certain ones will optimally balance risk and reward. These comprise what Markowitz called an efficient frontier of portfolios. An investor should select a portfolio that lies on the efficient frontier.

Tobin (1958) expanded on Markowitz's work by adding a risk-free asset to the analysis. This made it possible to leverage or deleverage portfolios on the efficient frontier. This led to the notions of a super-efficient portfolio and the capital market line. Through leverage, portfolios on the capital market line are able to outperform portfolio on the efficient frontier. Sharpe (1964) formalized the capital asset pricing model (CAPM). This makes strong assumptions that lead to interesting conclusions. Not only does the market portfolio sit on the efficient frontier, but it is actually Tobin's super-efficient portfolio. According to CAPM, all investors should hold the market portfolio, leveraged or deleveraged with positions in the risk-free asset. CAPM also introduced beta and relates an asset's expected return to its beta.

Portfolio theory provides a context for understanding the interactions of systematic risk and reward. It has shaped how institutional portfolios are managed and motivated the use of passive investment techniques. The mathematics of portfolio theory is used in financial risk management and was a theoretical precursor for today's value-at-risk measures.

2.2.2 Moral Hazard Theory

A moral hazard is where one party is responsible for the interests of another, but has an incentive to put his or her own interests first. For example one might take risks that someone else will have to bear. Moral hazards such as these are a pervasive and inevitable feature of the financial system and of the economy more generally. Krugman (2009) described moral hazard as "any situation in which one person makes the decision about how much risk to take, while someone else bears the cost if things go badly."

The inadequate control of moral hazards often leads to socially excessive risk-taking—and excessive risk-taking was certainly a recurring theme in the recent global financial crisis. In the subprime scandal, the would-be borrower didn't have much chance of getting a mortgage. However, banks originated mortgages with a view to selling it on (i.e., securitizing it), this incentive was seriously weakened. In fact, when the bank sold on the mortgage to another party it had no interest in whether the mortgage defaulted or not, and was only concerned with the payment it would get for originating the loan. The originating bank was now happy to lend to almost anyone, and it ended up in the patently unsound situation where mortgages were being granted with little or no concern about the risks involved. The subprime scandal was merely illustrative of a much broader and deeper problem—namely, that moral hazard in the financial sector has simply been out of control.

Wolf (2008) aptly put it, no other industry but finance “has a comparable talent for privatizing gains and socializing losses. Instead of “creating value,” as we were repeatedly assured, the practices of financial engineering (including structured finance and alternative risk transfer), huge leverage, aggressive accounting and dodgy credit rating have enabled their practitioners to extract value on a massive scale—to walk away with the loot, not to put too fine a point on it— while being unconstrained by risk management, corporate governance, and financial regulation, all of which have proven to be virtually useless. Financial bailouts of lending institutions by governments, central banks or other institutions can encourage risky lending in the future if those that take the risks come to believe that they will not have to carry the full burden of potential losses.

2.2.3. Merton’s Default Risk Model

The quantitative modeling of credit risk initiated by Merton (1974) shows how the probability of company default can be inferred from the market valuation of companies. The original Merton model was based on some simplifying assumptions about the structure of the typical firm’s finances. The event of default was determined by the market value of the firm’s assets in conjunction with the liability structure of the firm. When the value of the assets falls below a certain threshold (the default point), the firm is considered to be in default. A critical assumption is that the event of default can only take place at the maturity of the debt when the repayment is due. Many theoretical studies suggested models that relax some of the restrictive assumptions in the Merton model. However, empirical literature mainly focused on the application of the original model.

A major benchmark in these studies is the KMV (Kealhofer, McQuown and Vasicek), a San Francisco-based quantitative risk management firm model. KMV was founded in 1989 offering a commercial extension of Merton's model using market-based data. In 2002 it was acquired by Moody's and became Moody's-KMV. Hillegeist, Keating, Cram, and Lundstedt (2004) compared the predictive power of the Merton model to Altman (1968) and Ohlson (1980) models (Z-score and O-score) and came to the conclusion that the Merton model outperforms these models. Duffie et al (2007) showed that macroeconomic variables such as interest rate, historical stock return and historical market return have default prediction ability even after controlling for Merton model's distance to default.

Campbell et al (2007), using a hazard model, combined Merton model probability of default with other variables relevant to default prediction. They also found that Merton model probabilities had relatively little contribution to the predictive power. Bharath and Shumway (2008) presented a "naïve" application of Merton model that outperformed the complex application of Merton model (based on presumably Moody's-KMV specifications).

2.3 Determinants of Banks Financial Performance

The financial performance of commercial banks can be determined by either internal factors or external factors. Internal factors could be bank specific determinants while external factors are Industry specific determinants and Macroeconomic determinants. Bank specific indicators include: growth in bank assets, capital adequacy, operational

efficiency, and liquidity. Industry specific factors include: ownership, bank size, bank concentration index. While on the other hand, the key macroeconomic variables include: growth in GDP, GDP-per-capita, inflation expectation, interest rate and its spread.

Peng (2006), using data for the 14 largest banks in China for the period 1993-2003, studies the determinants of commercial bank performance in China. The study concluded that, performance of commercial banks in China was mainly determined by firm-level factors such as cost management capability and risk management capability. The study on Malaysian banks by Guru et al. (2001) also show that efficient management is among the most important factors that explain high bank profitability. Smirlock (1985) found a positive and significant relationship between size and bank profitability. Allen and Saunders (2004) provided evidence of the importance of macroeconomic factors in determining the profitability of banks. Ongore (2012) concluded that the financial performance of commercial banks in Kenya was driven mainly by board and management decisions, while macroeconomic factors had insignificant contribution.

2.4 Empirical Literature Review

Studies on the relationship between risk management and financial performance of banks mostly have been conceptual in nature, often drawing the theoretical link between good risk management practices and improved bank performance.

Al-Tamimi and Al-Mazrooei (2007) provided a comparative study of Bank's Risk Management of UAE National and Foreign Banks. This research helped them to find that the three most important types of risks facing the UAE commercial banks were foreign

exchange risk, followed by credit risk and then operating risk. They found that the UAE banks were somewhat efficient in managing risk; however the variables such as risk identification, assessment and analysis proved to be more influencing in risk management process. Finally, the results indicated that there was a significant difference between the UAE National and Foreign banks in practicing risk assessment and analysis, and in risk monitoring and controlling.

Hassan, (2009), made a study “Risk Management Practices of Islamic Banks of Brunei Darussalam” to assess the degree to which the Islamic banks in Brunei Darussalam implemented risk management practices and carried them out thoroughly by using different techniques to deal with various kinds of risks. The results of the study showed that, like the conventional banking system, Islamic banking was also subjected to a variety of risks due to the unique range of offered products in addition to conventional products. The results showed that there was a remarkable understanding of risk and risk management by the staff working in the Islamic Banks of Brunei Darussalam, which showed their ability to pave their way towards successful risk management. The major risks that were faced by these banks were Foreign exchange risk, credit risk and operating risk. A regression model was used to elaborate the results which showed that Risk Identification, and Risk Assessment and Analysis were the most influencing variables and the Islamic banks in Brunei needed to give more attention to those variables to make their Risk Management Practices more effective by understanding the true application of Basel-II Accord to improve the efficiency of Islamic Bank’s risk management systems.

Juanjuan et al (2009) in their study on credit risk management and profitability in commercial banks in Sweden highlighted that credit risk management has effect on profitability. The analysis further indicated that the impact of the credit risk management on profitability for the 4 commercial banks sampled was not the same. The study was limited to identifying the relationship of credit risk management and profitability banks in Sweden.

Kithinji (2010), did a study “Credit Risk Management and Profitability of Commercial Banks in Kenya”, to assess the degree to which the credit risk management in practice had significantly contribute to high profits in commercial banks of Kenya. Data on the amount of credit, level of non-performing loans and profits were collected for the period 2004 to 2008. The results of the study showed that, there was no relationship between profits, amount of credit and the level of nonperforming loans. The findings reveal that the bulk of the profits of commercial banks were not influenced by the amount of credit and nonperforming loans suggesting that other variables other than credit and nonperforming loans impact on profits. Commercial banks that are keen on making high profits should concentrate on other factors other than focusing more on amount of credit and nonperforming loans. A regression model was used to elaborate the results which showed that there was no significance relationship between the banks profit and credit risk management proxied by level of Nonperforming Loans and Loans and Advances/Total assets.

Ellu and Yerramilli (2010) investigated on whether a strong and independent risk management is significantly related to bank risk taking and performance during the credit crisis in a sample of 74 large bank holding companies. They constructed a risk management index (RMI) which was based on five variables relating to the strength of banks risk management: dummy variable whether the bank has a designated CRO who is member of the executive board, a dummy variable whether the CRO is among the top five highly paid executives, the ratio of the CRO's total compensation to the Chief Executive Officer's total compensation, a dummy variable whether at least one of the non-executive directors of the bank's risk committee has banking experience, and a dummy variable whether the bank's risk committee met more frequently in the respective year as compared to the average value across the other sample banks. Their findings indicated that banks with high RMI value in 2006 had lower exposure to private-label mortgage-backed securities, were less active in trading off-balance sheet derivatives and had a smaller fraction of non-performing loans, a lower downside risk and a higher Sharpe Ratio during the crisis years 2007-2008.

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

assets while the only risk that affects profitability when measured by return on equity is liquidity risk.

Saleem (2011) on his paper “Do Effective Risk Management Affect Organizational Performance” assesses the current practices of risk management in Pakistani software development sector. Based on the data, collected from 25 organizations working in software development sector, the results indicated that risk management practices were not widely used by the organization(s); moreover most of the organizations did not have documented risk management policy properly. Therefore, these organizations could not deal with the risks systematically and sometimes faced negative consequences for the non-systematic approaches. However, few companies had implemented certain risk management techniques and are enjoying high performance.

Anguka (2012) did a study on “The Influence of Financial Risk Management on The Financial Performance of Commercial Banks in Kenya”. The study sought to assess the influence of financial risk management practices namely; Risk aggregation and Capital Allocation practices, Supervision and Regulation, Disclosures and Funded and Unfunded Credit protection on the Financial Performance on Commercial Banks in Kenya. The specific objectives were to determine the influence that these practices have had on the financial performance of commercial banks in Kenya and to establish the relationship between Financial Risk Management and Financial Bank performance. The study used a descriptive survey of commercial banks in Kenya. The credit and management staff of

the forty two commercial banks and one mortgage company formed the target population with a sample size of one hundred and seven staff randomly chosen for the study. Primary data through close ended questions was collected in this study on the financial risk management practices employed and their influence on the financial performance of the commercial banks.

Data was analyzed using correlation analysis and regression models with the strength of the model being tested using Cronbach's Co-efficient Alpha. The study found that most commercial banks had highly adopted financial risk management practices to manage financial and credit risk and as a result the financial risk management practices mentioned herein have a positive correlation to the financial performance of commercial banks of Kenya. The study recommended that commercial banks should seek and obtain information consistently so as to permit them to detect potential problems at an early stage and identify trends not only for particular institutions, but also for the banking system as a whole, while also ensuring transparency of banking activities and the risks inherent in those activities, including credit risk.

Kolapo (2012) on his study "Credit Risk And Commercial Banks' Performance In Nigeria: A Panel Model Approach." carried out an empirical investigation into the quantitative effect of credit risk on the performance of commercial banks in Nigeria over the period of 11 years (2000 - 2010). Five Commercial banking firms were selected on a cross sectional basis for eleven years. The traditional profit theory was employed to

formulate profit, measured by Return on Asset (ROA), as a function of the ratio of Non - performing loan to loan & Advances (NPL/LA), ratio of Total loan & Advances to Total deposit (LA/TD) and the ratio of loan loss provision to classified loans (LLP/CL) as measures of credit risk.

Panel model analysis was used to estimate the determinants of the profit function. The results showed that the effect of credit risk on bank performance measured by the Return on Assets of banks is cross - sectional invariant. That is the effect is similar across banks in Nigeria, though the degree to which individual banks are affected is not captured by the method of analysis employed in the study. A 100 percent increase in non - performing loan reduces profitability (ROA) by about 6.2 percent, a 100 percent increase in loan loss provision also reduces profitability by about 0.65percent while a 100 percent increase in total loan and advances increase profitability by about 9.6 percent. Based on the study findings, the study recommended that banks in Nigeria should enhance their capacity in credit analysis and loan administration while the regulatory authority should pay more attention to banks' compliance to relevant provisions of the Bank and other Financial Institutions Act (1999) and prudential guidelines.

Ogilo (2012) provided a comparative study of Credit Risk Management on Financial Performance of Commercial Banks in Kenya. A causal research design was undertaken in this study and this was facilitated by the use of secondary data which was obtained from the Central Bank of Kenya publications on banking sector survey. The study used

multiple regression analysis in the analysis of data and the findings were presented in the form of tables and regression equations. The study found out that there was a strong impact between the CAMEL components on the financial performance of commercial banks. The study also established that capital adequacy, asset quality, management efficiency and liquidity (CAMEL) had weak relationship with financial performance (ROE) whereas earnings had a strong relationship with financial performance. The study concluded that CAMEL model can be used as a proxy for credit risk management.

Ongore and Kusa (2013) on their study “Determinants of Financial Performance of Commercial Banks in Kenya” assessed on moderating effect of ownership structure on bank performance. To fill this glaring gap in this vital area of study, the authors used linear multiple regression model and Generalized Least Square on panel data to estimate the parameters. The findings showed that bank specific factors significantly affect the performance of commercial banks in Kenya, except for liquidity variable. But the overall effect of macroeconomic variables was inconclusive at 5% significance level. The moderating role of ownership identity on the financial performance of commercial banks was insignificant. Thus, they concluded that the financial performance of commercial banks in Kenya was driven mainly by board and management decisions, while macroeconomic factors have insignificant contribution.

2.4 Summary of Literature Review

From this chapter the financial risk management in the banking sector cannot be understated. Risk management is nowadays considered as a key activity for all

companies. Many of the disastrous losses through the bank crisis would have been avoided if good risk management practices have been in place. All the previous studies established that banks should have proper risk management function and better risk management techniques so as to lead to better financial performance.

CHAPTER THREE: RESEARCH METHODOLOGY

3.1. Introduction

This chapter describes the methodology that was adopted to achieve the research objectives of the study. The first subsection covers research design. Subsection two covers the unit of analysis followed by the data collection methods. Lastly we look at how data was analysed.

3.2. Research Design

The research used a descriptive research design. Descriptive survey research portrays an accurate profile of persons, events, or account of the characteristics, for example behaviour, opinions, abilities, beliefs, and knowledge of a particular individual, situation or group (Burns and Grove 2003). The descriptive survey method was preferred because it would ensure complete description of the situation (in depth study of financial risk management), making sure that there was minimum bias in the collection of data.

3.3. Population

Target population refers to the entire group of individuals or objects from which the study seeks to generalize its findings. The target population comprised of the forty three (43) commercial banks and one Mortgage Company making it 44 Banks as per appendix I. The study was a census study.

3.4. Data Collection

The study used both primary data and secondary data. The purpose of using primary source data was to get respondents' perception towards the risk management practices

followed by the commercial banks in Kenya. The primary data for this study was collected using personally administered questionnaires. See Appendix I. The questionnaire was adapted from Khan and Ahmed (2001) and Ariffin et al. (2009). The questionnaire consisted of six sections. The first section was designed to gather the institutional information. The second section was designed to gather information about the risk management environment. The other sections gathered information about risk measurement followed by risk monitoring, risk mitigation and internal control techniques adopted by the commercial banks. The questionnaire was designed to consist of 5 likert scale point, 5 for strongly agree, 4 for agree, 3 for no opinion, 2 for disagree and 1 for strongly disagree. The secondary data was collected from the various CBK Bank Supervision Annual Reports. The five years (2008-2012) annual ROA ratio was averaged to form the dependent variable (financial performance).

3.4.1 Data Validity & Reliability

A pilot study was carried out to pre-test and validate the questionnaire. To establish the validity of the research instrument the opinions of risk experts in the banking sector was sought. This facilitated the necessary revision and modification of the research instrument thereby enhancing validity. A pilot group of 5 individuals from the target population was done to test the reliability of the research instrument. The pilot data was not included in the actual study. The pilot study allowed for pre-testing of the research instrument. The clarity of the instrument items to the respondents was established so as to enhance the instrument's validity and reliability. The pilot study assisted in being familiar with research and its administration procedure as well as identifying items that require

modification. The results helped to correct inconsistencies arising from the instruments, which ensured that they measured what was intended.

3.5 Data Analysis

Descriptive statistics was used to describe the data and examine the relationships between the variables under investigation. Descriptive statistics used included Frequency distributions, measures of central tendency (mean and standard deviation), and pie charts that described the data.

Inferential statistics was used to examine the casual relationships between the financial risk management and the banks financial performance. An F-test was used to assess how well the set of independent variables, as a group, explains the variation in the dependent variable/ effectiveness of the model as a whole in explaining the dependent variable. We used a t-test to assess the significance of the individual regression parameters/assessing whether the individual coefficients were statistically significant. We tested for multicollinearity (two or more independent variables in a multiple regression model are highly correlated) using formal detection-tolerance or the variance inflation factor (VIF). All the above analysis was done through Statistical Package for the Social Sciences – SPSS.

3.5.1 Model Specification

The study utilised the regression analysis with the equation of the form. The model provided a statistical technique for estimating the relationship between the financial risk management and the financial performance of the banks.

$$Y = \alpha + b_1 X_1 + b_2 X_2 + b_3 X_3 + b_4 X_4 + b_5 X_5 + \varepsilon$$

Where:

α = constant/the interception point of the regression line and the y-axis

b_1, b_2, \dots, b_5 are the coefficients of the independent variables that will be determined.

Y=Financial performance measured by the simple average ROA (2008-2012)

X_1 = Risk Management Environment.

X_2 =Risk Measurement.

X_3 =Risk Mitigation.

X_4 =Risk Monitoring.

X_5 = Adequate Internal Control.

ε = disturbance term or error term

The independent variables X_1, X_2, \dots, X_5 were operationalized and measured using the questions posted in the questionnaire.

3.5.2 Operationalization of the Study Variables

To measure the financial risk management practices, five important components in reference to Basel Committee on Banking Supervision (1999 and 2001b) were used to formulate the questionnaire. The five components were Risk Management Environment, Risk Measurement, Risk Mitigation, Risk Monitoring and Adequate Internal Control. All these five components were then linked with the mean of ROA for the five years (2008-2012).

The variables were measured as follows:

Table 3.1: Operationalization of the Study Variables

Variable	Measurement
ROA	Return on Asset was measured as the ratio of net income to average total assets for the respective bank. A simple average ROA for the five years (2008-2012) was used.
Risk Management Environment.	To come up with the quantitative assessment of Risk Management Environment the quantification points were assigned (using likert scale) for the different questions in the section and adding them up to get the total numerical score of 100%.The resulting index gave an indication of the overall status of risk management in the bank.
Risk Measurement	The quantitative assessments of Risk Measurement points were assigned (using likert scale) for the different questions in the section and adding them up to get the total numerical score of 100%. The resulting index gave an indication of the overall status of risk management in the bank.
Risk Mitigation	The quantitative assessment of Risk Mitigation the quantification points were assigned (using likert scale) for the different questions in the section and adding them up to get the total numerical score of 100%. The resulting index gave an indication of the overall status of risk management in the bank.
Risk Monitoring	The quantitative assessment of Risk Monitoring the quantification points were assigned (using likert scale) for the different questions in the section and adding them up to get the total numerical score of 100%. The resulting index gave an indication of the overall status of risk management in the bank.
Adequate Internal Control	The quantitative assessment of Adequate Internal Control the quantification points were assigned (using likert scale) for the different questions in the section and adding them up to get the total numerical score of 100%. The resulting index gave an indication of the overall status of risk management in the bank.

CHAPTER FOUR: DATA ANALYSIS, RESULTS AND DISCUSSIONS

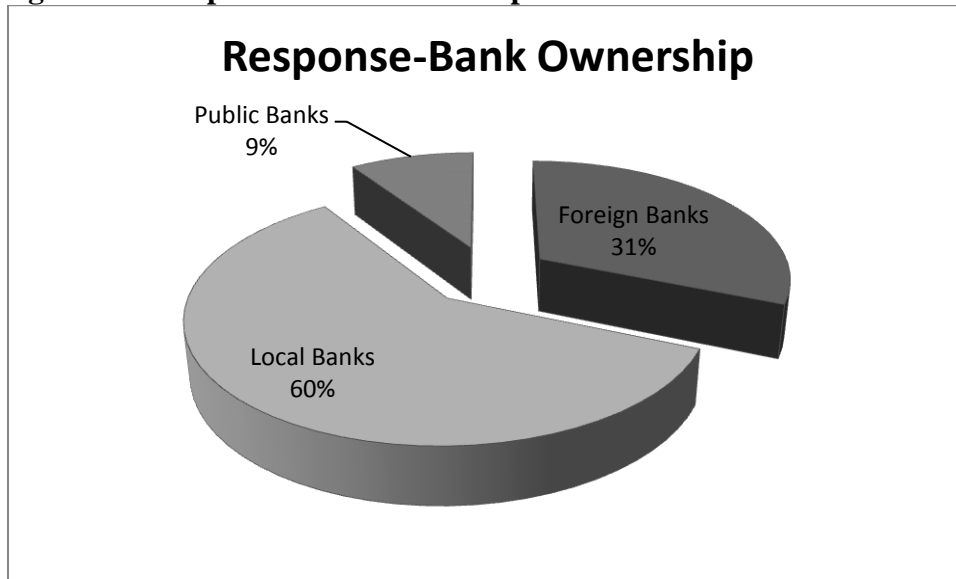
4.1. Introduction

This chapter presents the data that was collected on financial risk management and financial performance from the respective banks. This study made use of Likert scale in collecting and analysing financial risk management practices, where a scale of 5 points were used in computing the means and standard deviations there-to computed. The findings were then presented in tables and appropriate explanations were given in prose. The results of financial performance for the banks were presented in a table and a brief explanation was given. To measure the effects of financial risk management on the financial performance, regression analysis was carried out as well as correlation analysis. The chapter concludes with a brief interpretation of the findings.

4.2. Response Rate

Of the total 44 banks targeted, 32 banks responded to the questionnaires, representing a response rate of 73% which is within Mugenda and Mugenda's (2003) prescribed significant response rate for statistical analysis which they established at a minimal value of 50%. This commendable response rate was made possible after the researcher personally administered the questionnaire and made further visits to remind the respondents to fill-in and return the questionnaires as well as constant telephone reminders. The pie chart below presents the ownership profile of the banks in the study. As shown in the pie chart, 60% of the respondents were local banks, 31% were foreign banks and 9% were public owned banks.

Figure 4.1: Response-Bank Ownership



Source; Research Findings

4.3. Financial Risk Management Practices in Kenyan Banks

To assess the level of financial risk management practices in the Kenyan commercial banks by using the descriptive tests, the study used the 5-Likert scale approach in the questionnaire. The higher the scale indicated that the respondent strongly agreed to such practices adopted by their banks. Financial risk management practices were covered in five parts: Risk Management Environment, Risk Measurement Practices, Risk Mitigation Practices, Risk Monitoring Practices and Internal Control Practices as suggested by the Basel Committee on Banking Supervision (1999 and 2001b).

4.3.1. Risk Management Environment

With regard to “Risk Management Environment”, the results as in Table 4.2 show that all the respondents agree with almost all item statements. Majority of the respondents (with a mean of over 4.5) strongly agreed with seven items, namely item : There is a formal system of Risk Management in the bank; item: The Board of directors outline the overall

risk objectives; item: There is a section/department responsible for identifying, monitoring, and controlling various risks; item: The bank have internal guidelines/rules and concrete procedures with respect to the risk management system; item: The bank has the policy of diversifying investment across different sectors; item: Your Bank has adopted and utilised Revised CBK Financial Risk management Guidelines; and item: Your Bank has adopted and utilised Revised CBK Prudential Guidelines.

Table 4.2 also depicts that the lowest mean is for item “Your bank complies with Basel committee standards.” which means that the respondents do not perceive or are not clear if the Kenyan banks are abiding to Basel committee standards in investing across different countries. This could be attributed to the nature of ownership of most of the Kenyan banks being selected in this study, which are very much relying on the domestic guidelines from the CBK. Lastly, item, “There is a budgetary allocation to the risk management function” also scored a low mean depicting that majority of the respondents had no opinion on whether there was specific budget allocation to risk management function. This may be an indication that risk management sections are not taken as cost centres or that they are aggregated with other cost centres.

Table 4.2: Risk Management Environment

Descriptive Statistics					
	N	Minimum	Maximum	Mean	Std. Deviation
There is a formal system of Risk Management in the bank.	32	4.00	5.00	4.6562	.48256
The Board of directors outlines the overall risk objectives.	32	3.00	5.00	4.8125	.47093
There is a section/department responsible for identifying, monitoring, and controlling various risks.	32	4.00	5.00	4.8750	.33601
The bank have internal guidelines/rules and concrete procedures with respect to the risk management system.	32	4.00	5.00	4.8438	.36890
The bank has the policy of diversifying investment across different sectors.	32	1.00	5.00	4.5000	.98374
Your bank complies with Basel committee standards.	32	3.00	4.00	3.0312	.17678
Your Bank has adopted and utilized Revised CBK Financial Risk management Guidelines	32	3.00	5.00	4.8125	.47093
Your Bank has adopted and utilized Revised CBK Prudential Guidelines	32	3.00	5.00	4.8125	.47093
There is a budgetary allocation to the risk management function.	32	2.00	5.00	3.0312	.69488
Valid N (listwise)	32				

Source; Research Findings

4.3.2. Risk Measurement

Moving on to the risk measurement practices, as shown in Table 4.3, only three items statement scored a mean of 4, that is the respondents agreed on the items statement. The item statements were; the bank regularly conducts simulation analysis and measure benchmark (interest) rate risk sensitivity; the bank uses Maturity Matching Analysis and item statement; the bank uses Estimates of Worst Case scenarios/stress testing for risk analysis. This is an indication that the risk measurements techniques are still developing in the Kenyan banks.

Value at Risk analysis , Risk Adjusted Rate of Return on Capital (RAROC) were not common measurements of risk in the Kenyan Banks as they scored a mean of 2 which showed that majority of the respondents were not aware of the techniques. Majority of the banks also confirmed that there were no internal risk rating systems as well as computerized support system for estimating the variability of earnings and risk management. These areas may need improvement in order to assist the bank in managing the risks efficiently.

Table 4.3: Risk Measurement

Descriptive Statistics					
	N	Minimum	Maximum	Mean	Std. Deviation
There is a computerized support system for estimating the variability of earnings and risk management.	32	1.00	4.00	2.3750	.75134
The bank regularly conducts simulation analysis and measure benchmark (interest) rate risk sensitivity.	32	1.00	5.00	4.0938	1.30407
The bank uses Gap Analysis	32	2.00	5.00	3.3438	1.15310
The bank uses Duration Analysis	32	1.00	5.00	3.4375	1.34254
The bank uses Maturity Matching Analysis	32	2.00	5.00	4.1562	.84660
The bank uses Value at Risk analysis	32	1.00	3.00	1.8750	.49187
The bank uses Estimates of Worst Case scenarios/stress testing for risk analysis.	32	1.00	5.00	4.2500	.91581
The bank use Risk Adjusted Rate of Return on Capital (RAROC)	32	1.00	2.00	1.5313	.50701
The bank use has other Internal Risk Rating System	32	1.00	4.00	1.9375	1.13415
Valid N (listwise)	32				

Source; Research Findings

4.3.3. Risk Mitigation

Table 4.4 presents the perception on risk mitigation practices in Kenyan banks. For risk mitigation practices, majority of item statements scored a mean 3.5-4.3 which are considered good. However, item; “there are derivatives instruments to mitigate financial risk” scored a mean of 1.4 meaning majority of the respondents did not agree that Kenyan banks use derivative instruments to mitigate financial risk. This area may need improvement in order to assist the banks in managing the risks efficiently.

Table 4.4: Risk Mitigation

Descriptive Statistics					
	N	Minimum	Maximum	Mean	Std. Dev.
There are Derivatives instruments to mitigate financial risk.	32	1.00	2.00	1.4375	.50402
The credit limits for individual counterparty are set by a committee.	32	2.00	5.00	4.2812	.77186
There are mark-up rates on assets set taking account of the risk factors or asset grading.	32	1.00	5.00	3.8750	.79312
The bank regularly (weekly) compiles a maturity ladder chart according to settlement date and monitor cash position gaps.	32	1.00	5.00	3.5000	.87988
The bank regularly conducts simulation analysis and measure benchmark (interest) rate risk sensitivity.	32	2.00	5.00	4.0000	.87988
The bank has a quantitative support system for assessing customers' credit standing	32	1.00	5.00	3.7812	1.09939
There is credit rating of prospective investors.	32	3.00	5.00	4.2500	.76200
Valid N (listwise)	32				

Source; Research Findings

4.3.4. Risk Monitoring

Table 4.5 on the frequency of generating risk reports indicate that majority of the banks generates monthly risk reports. This can as well be classified as good risk management technique.

Table 4.5: Risk Reporting

Descriptive Statistics					
	N	Minimum	Maximum	Mean	Std. Deviation
Credit risk report	32	3.00	5.00	3.5625	.61892
Market risk report	32	2.00	5.00	3.2812	.95830
Interest rate risk report	32	1.00	5.00	3.0000	1.13592
Liquidity risk report	32	2.00	5.00	3.4375	.98169
Foreign exchange risk report	32	1.00	5.00	3.7188	.99139
Capital at Risk	32	1.00	4.00	2.5000	.62217
Valid N (listwise)	32				

Source; Research Findings

Moving on to the risk monitoring practices, as shown in Table 4.6, all the items statement scored a mean of 3.5-4.6. This is a good indication of risk management.

Table 4.6: Risk Monitoring

Descriptive Statistics					
	N	Minimum	Maximum	Mean	Std. Deviation
The bank periodically reappraises collateral (asset).	32	1.00	5.00	4.3125	.82060
The bank confirms a guarantor's intention to guarantee loans with a signed document.	32	1.00	5.00	4.6250	.87067
For international loans, the bank regularly reviews country ratings.	32	1.00	5.00	3.5000	1.50269
The bank monitors the borrower's business performance after loan extension.	32	1.00	5.00	4.5312	.84183
Valid N (listwise)	32				

Source; Research Findings

4.3.5. Adequate Internal Control

As per Table 4.7, for internal control practices, the respondents strongly agreed in all items. This can be considered as good practice.

Table 4.7: Adequate Internal Control

Descriptive Statistics					
	N	Minimum	Maximum	Mean	Std. Deviation
The bank have put in place an internal control system capable of swiftly dealing with newly recognized risks arising from changes in environment, etc.,	32	4.00	5.00	4.3750	.49187
There is a separation of duties between those who generate risks and those who manage and control risks.	32	4.00	5.00	4.4688	.50701
The bank have countermeasures (contingency plans) against disasters and accidents.	32	4.00	5.00	4.5937	.49899
The Internal Auditor verifies the authenticity of accounts and risk reports prepared.	32	3.00	5.00	4.2500	.50800
The bank has backups of software and data files.	32	4.00	5.00	4.8125	.39656
There is a Risk Committee in the Board Level.	32	4.00	5.00	4.5000	.50800
Valid N (listwise)	32				

Source; Research Findings

Overall, for the Kenyan banks as shown in table 4.8, the best financial risk management practice is for Adequate Internal Controls Practice which obtained the highest mean of 90 per cent, followed by Risk Management Environment Practices (mean of 88 per cent). The Risk Monitoring Practice showed a mean of 73 per cent while Risk Mitigation

practices recorded a mean of 72 per cent. The Risk Measurement practices recorded the lowest mean of 60 per cent.

Table 4.8: Overall Financial Risk Management Practices

	N	Minimum	Maximum	Mean	Std. Deviation
	Statistic	Statistic	Statistic	Statistic	Statistic
Average Return on Asset (2008-2012)	32	-.0227	.0688	.028100	.0218123
Risk Management Environment	32	.6667	.9556	.875000	.0609807
Risk Measurement	32	.3111	.7333	.599997	.0934363
Risk Mitigation	32	.4571	.8286	.717862	.1075927
Risk Monitoring	32	.4800	.9000	.729375	.0935307
Adequate Internal Controls	32	.8000	.9667	.899994	.0561724
Valid N (listwise)	32				

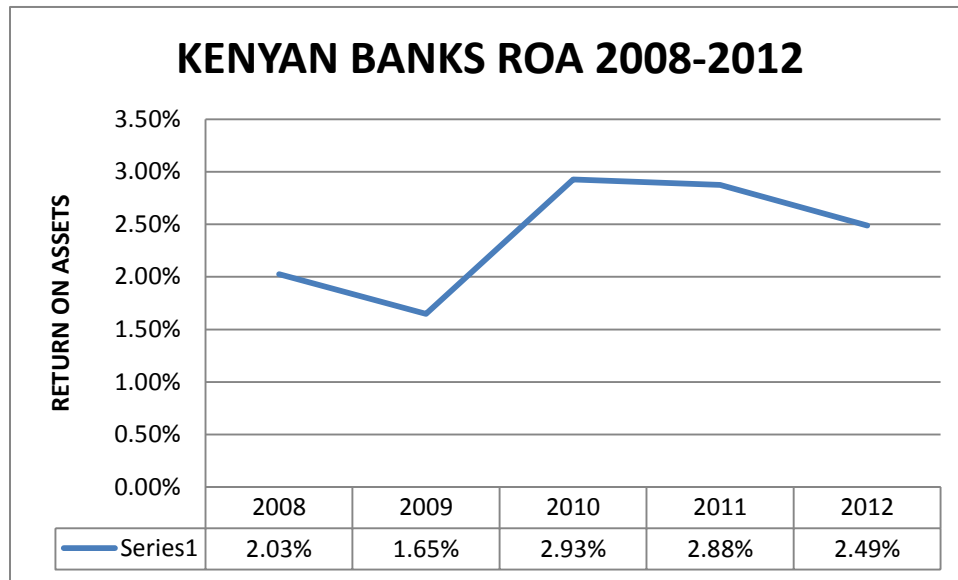
Source; Research Findings

4.4. Financial Performance of the Commercial Banks in Kenya 2008-2012

The comprehensive Return on Asset for the Kenyan banks is on appendix II. Average returns on assets (ROA) for the Kenyan banks in 2008 was 2.03 per cent, 2009 was 1.65 per cent, 2010 was 2.93 per cent, 2011 was 2.88 per cent and 2012 was 2.49 per cent. Thus on average the return on assets of the banking industry decreased during the period 2010 to 2012. Notably Jamii Bora Bank Limited was converted into a bank in 2010 while UBA Kenya Bank Limited started its operations on 2009. Charterhouse Bank Limited was excluded from the survey as it's under statutory management. The average figures

for each year take into account the number of institutions that were in operation in each of the years.

Table 4.9: Return on Assets 2008-2012



Source; Research Findings

4.5. Regression and Correlation Analysis

Correlation Coefficients and regression analysis was used to analyse the effects between the financial risk management and financial performance.

4.5.1 Correlation Coefficient

As a key assumption of regression model, the study sought to establish whether there was linearity between independent and dependent variables. Pearson correlation was used to analyse the correlations between the variables and financial performance. Table 1 reveals the correlation coefficients between the variables and financial performance. Table 4.10 show that Risk Measurement has a correlation coefficient of 0.795 with financial

performance. The correlation coefficient between Risk Management Environment and financial performance is 0.469. Risk Mitigation also has correlation coefficient of 0.846 with financial performance. A correlation was also established between Risk Monitoring and financial performance of 0.384. A correlation was also observed between Adequate Internal Controls and financial performance of 0.536. The coefficient matrix reveals a strong relationship between the dependent factor (financial performance) and the independent factors (financial risk management).

Table 4.10: Correlations Matrix

Pearson Correlation	Average Return on Asset (2008-2012)	Risk Management Environment	Risk Measurement	Risk Mitigation	Risk Monitoring	Adequate Internal Controls
Average Return on Asset (2008-2012)	1.000	.469	.792	.846	.384	.536
Risk Management Environment	.469	1.000	.249	.348	-.213	.474
Risk Measurement	.792	.249	1.000	.658	.220	.191
Risk Mitigation	.846	.348	.658	1.000	.281	.330
Risk Monitoring	.384	-.213	.220	.281	1.000	.090
Adequate Internal Controls	.536	.474	.191	.330	.090	1.000

Source; Research Findings

4.5.2 Goodness of Fit Statistics

Table 4.11 illustrates that the strength of the relationship between financial performance(ROA) and independent variables (Risk Management Environment, Risk Measurement, Risk Mitigation, Risk Monitoring and Adequate Internal Controls). The correlations results depicted a linear relationship between the dependent and the

independent variables aggregates with R having value of 0.964 The determination coefficients, denoted by R² had higher values of 0.916. All these show that the model is very reliable.

Table 4.11: Goodness Fit Statistics

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.964 ^a	.929	.916	.0063403	2.628

Source; Research Findings

The study also used Durbin Watson (DW) test to check that the residuals of the models were not auto correlated. Being that the DW statistics were close to the prescribed value of 2.0 for residual independence, it can be noted that there was no autocorrelation.

Table 4.12: Analysis of Variance

ANOVA^b

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	.014	5	.003	68.178	.001 ^a
	Residual	.001	26	.000		
	Total	.015	31			

a. Predictors: (Constant), Adequate Internal Controls , Risk Monitoring , Risk Measurement , Risk Management Environment , Risk Mitigation

b. Dependent Variable: Average Return on Asset (2008-2012)

Source; Research Findings

From the Analysis of variance table 4.12, the F-test of 68.178 per cent indicates regressions explanatory power on the overall significance was strong.

4.5.3 Multicollinearity Test

The study conducted formal detection tolerance and the variance inflation factor (VIF) for multicollinearity. For tolerance, value less than 0.1 suggest multicollinearity while values of VIF that exceed 10 are often regarded as indicating multicollinearity Table 4.13 shows that the values of tolerance were greater than 0.1 and those of VIF were less than 10. This shows lack of multicollinearity among independent variables. It would be in appropriate, therefore, to omit variables with insignificant regression coefficients.

Table 4.13: Multicollinearity Test

Model	Collinearity Statistics	
	Tolerance	VIF
(Constant)		
Risk Management Environment	.627	1.595
Risk Measurement	.562	1.780
Risk Mitigation	.480	2.081
Risk Monitoring	.787	1.271
Adequate Internal Controls	.722	1.385

Source; Research Findings

4.5.4 Regression Model

The regression equation was of the form:

$$Y = \alpha + b_1 X_1 + b_2 X_2 + b_3 X_3 + b_4 X_4 + b_5 X_5 + \varepsilon$$

Where:

α = constant/the interception point of the regression line and the y-axis

b_1, b_2, \dots, b_5 are the coefficients of the independent variables that will be determined.

Y=Financial performance measured by the simple average ROA (2008-2012)

X₁= Risk Management Environment.

X₂=Risk Measurement.

X₃=Risk Mitigation.

X₄=Risk Monitoring.

X₅= Adequate Internal Control.

ε = disturbance term or error term

The regression model arising from the data in the table 4.14 below is of the form;

$$Y = 0.059X_1 + 0.095X_2 + 0.079X_3 + 0.046X_4 + 0.091X_5 - 0.252$$

Table 4.14: Regression Coefficients

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
1 (Constant)	-.252	.023		-10.858	.000
Risk Management Environment	.059	.024	.164	2.489	.020
Risk Measurement	.095	.016	.408	5.852	.000
Risk Mitigation	.079	.015	.387	5.141	.000
Risk Monitoring	.046	.014	.199	3.382	.002
Adequate Internal Controls	.091	.024	.234	3.812	.001

a. Dependent Variable: Average Return on Asset (2008-2012)

Source; Research Findings

The model means that financial performance is highly dependent on the level of the financial risk management. The t-test indicates that the financial performance is highly dependent of risk measurement practices and risk mitigation practises.

4.6. Interpretation of Findings

The study found that there was a significant relationship between the financial risk management practices on the financial performance of commercial banks. In general, table 4.10 show the result of correlations analysis between ROA and all risk management practices showed an existence of strong positive correlation. A strong positive correlation between ROA and risk mitigation practices (+85%) existed. A strong positive correlation relationship (+79%) exists between ROA and risk measurement practices. Moreover, there moderate correlations between ROA and internal control practices, risk management environment and risk monitoring practices (54%, 47% and 48%, respectively). Based on these correlations, it can be concluded that the higher the ROA for Kenyan commercial banks, the better will be the risk mitigation practices and also risk measurement practices in the Kenyan banks.

The R-Square in table 4.11 indicates that an overwhelmingly 92.9% of the ROA is explained by the financial risk management practices. The adjusted R-Square of 0.916 also confirms the same. This means that there is a strong effect between the financial performance (ROA) and the financial risk management practice. Table 4.12 above shows that financial risk management efficiency significantly affects the financial performance of commercial banks in Kenya.

Analysis from table 4.14 shows the regression coefficients and it was established that the intercept value was a negative value of 0.252. Table 4.14 also reveals that a unit increase

in Risk Management Environment index will cause a 0.059 increase in Return on Asset (ROA) and a unit increase in Risk Measurement index will lead to a 0.095 increase in ROA. A unit increase in Risk Mitigation Index will lead to a 0.079 increase in ROA and a unit increase in Risk Monitoring Index will lead to a 0.046 increase in ROA. Likewise a unit change in Adequate Internal Controls Index would cause a 0.091 positive change in ROA.

CHAPTER FIVE: SUMMARY OF FINDINGS, CONCLUSION AND RECOMMENDATIONS

5.1. Introduction

The purpose of this chapter was to discuss and draw conclusions and recommendations on the findings of the main objective of the study which was to examine the effects of financial risk management on financial performance on commercial banks in Kenya. The chapter will also discuss further areas of study.

5.2. Summary

This study used primary data and secondary data to examine the effect of financial risk management practices in Kenyan banks on the financial performance of these Kenyan banks using correlation analysis and regression analysis. All the banks in the study practice good risk management with few areas of improvements. This includes the use of computerized support system for estimating the variability of earnings and risk management. The banks should consider complying with the more stringent guidelines of Basel III in addition to the local CBK guidelines on financial risk management. On budget allocation to risk management sections, most banks had no stand-alone budget thus the risk management may not have been fully equipped in terms of resources.

The findings show that Kenyan banks are perceived to use less technically advanced risk measurement techniques of which the most commonly used are credit ratings, gap analysis, duration analysis, maturity matching, estimates of worst case scenarios/stress

testing and earnings at risk. The more technically advanced risk measurement techniques which include value at risk, simulation techniques, RAROC and internal-based rating system are perceived not to be used widely by Kenyan banks in the study. On risk mitigation practices it was established that majority of the Kenyan banks had limited use of derivative instruments to mitigate financial risk. These areas may need improvement in order to assist the banks in managing the risks efficiently.

Overall the best financial risk management practice is on adequate internal controls practice which obtained the highest mean of 90 per cent followed by risk management environment practices with a mean of 88 per cent. With regard to the type of reports, the reports on credit risk, market risk, interest rate risk, liquidity risk and foreign exchange risk have been produced monthly by the Kenyan banks in the study. Lastly, the study established a very strong relationship between financial risk management practices and financial performance in the Kenyan banks.

5.3. Conclusions

The study established that financial risk management had a strong impact on the financial performance of commercial banks in Kenya. The study also established that the risk measurement practice had the biggest impact on financial performance followed by risk mitigation practice. Thus, as each shilling invested in risk measurement techniques and risk mitigation techniques increases revenues generation and the financial performance of banks increases.

5.4. Recommendation for Policy

From the finding and basing on the objectives, the study recommends the following; Kenyan banks should expound their risk measurements techniques so as to adequately manage the financial risks resulting from the increased financial innovations in the banking sector. Also the banking institution should explore the use of derivatives to mitigate the financial asset risks. Commercial banks should also check their risk management policy and practices and streamline them with global standards such as the Basel III accords. On budget allocation the banks should ensure risk management sections have a stand-alone budget to ensure resources are availed for the ever changing risk environment.

By this they would efficiently manage the financial risk and consequently increase their financial performance.

5.5. Limitations of the study

A limitation for the purpose of this research was regarded as a factor that was present and contributed to the researcher getting either inadequate information or responses or if otherwise the response given would have been totally different from what the researcher expected.

The main limitations of this study were that some respondents refused to fill in the questionnaires and some respondents decided to withhold information which they considered sensitive and classified. This reduced the probability of reaching a more conclusive study.

In addition, most respondents were busy during the time of the survey as they were busy filing the monthly CBK compliance reports. This may have prevented the researcher to seek clarification from the respondents on areas of ambiguity.

Lastly, due to time and financial constraints the researcher did not carry out any interviews on the actual effect that financial risk management has had on the financial performance of the Commercial Banks. This could have limited the data available to the researcher since all the findings were based on questionnaires and the researcher's personal knowledge of the region under study.

5.6. Areas for Further Research

The study suggests that a further study can be done on the effects of financial risk management by use of detailed questionnaire on the financial performance of other financial institutions like the micro finance institutions (MFIs) and development financial institutions (DFIs).

Further research may be directed towards the examination of how Kenyan banks have adopted the Basel III recommendations and how such recommendations have affected their financial risk management and the financial performance.

Lastly, a study may be directed towards causal relationship between bank Capital and profitability for the Kenyan banks.

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APPENDIX I-COMMERCIAL BANKS IN KENYA

LIST OF COMMERCIAL BANKS IN KENYA AS AT 31ST DECEMBER 2012		
Ref No.	Bank	Location
A1	African Banking Corporation Limited	ABC Bank House, Mezzanine Floor, Koinange Street
A2	Bank of Africa Kenya Limited	Re-Insurance Plaza, Ground Floor - Taifa Rd
A3	Bank of Baroda (K) Limited	Baroda House, Koinange Street
A4	Bank of India	Bank of India Building, Kenyatta Avenue
A5	Barclays Bank of Kenya Limited	Barclays Westend, Waiyaki Way, Westlands
A6	CFC Stanbic Bank Limited	CFC Centre, Chiromo Road, Westlands
A7	Charterhouse Bank Limited	Longonot Place, 6th Floor, Kijabe Street
A8	Chase Bank (K) Limited	Riverside Mews, Riverside Drive
A9	Citibank N.A Kenya	Citibank House, Upper Hill Road, Upper Hill
A10	Commercial Bank of Africa Limited	CBA Building, Mara/Ragati Road, Upper Hill
A11	Consolidated Bank of Kenya Limited	Consolidated Bank House, 6th Floor, Koinange Street
A12	Co-operative Bank of Kenya Limited	Co-operative House, 4th Floor Annex, Haile Selassie Avenue
A13	Credit Bank Limited	Mercantile House, Ground Floor, Koinange Street
A14	Development Bank of Kenya Limited	Finance House, 16th Floor, Loita Street
A15	Diamond Trust Bank (Kenya) Limited	Nation Centre, 8th Floor, Kimathi Street
A16	Dubai Bank Kenya Limited	I.C.E.A. Building, Ground Floor, Kenyatta Avenue
A17	Ecobank Kenya Limited	Ecobank Towers, Muindi Mbingu Street
A18	Equatorial Commercial Bank Limited	Equatorial Fidelity Centre, Waiyaki Way - Westlands
A19	Equity Bank Limited	Equity Centre, 9th Floor - Hospital Road- Upper Hill
A20	Family Bank Limited	Family Bank Towers. 6th Floor, Muindi Mbingu Street
A21	Fidelity Commercial Bank Limited	I.P.S Building, 7th Floor, Kimathi Street
A22	Fina Bank	Fina House, Kimathi Street
A23	First Community Bank Limited	Prudential Assurance Building, 1st Floor, Wabera Street
A24	Giro Commercial Bank Limited	Eldama Park- Eldama Ravine Road-Off Peponi Road - Westlands
A25	Guardian Bank Limited	Guardian Centre, Biashara Street
A26	Gulf African Bank Limited	Gemina Insurance Plaza, Kilimanjaro Avenue, Upper Hill
A27	Habib Bank A.G Zurich	Habib House, Koinange Street
A28	Habib Bank Limited	Exchange Building, Koinange Street
A29	Imperial Bank Limited	Imperial Court - Westlands Road - Westlands
A30	I & M Bank Limited	I & M Bank House, 2nd Ngong Avenue, Off Ngong Road
A31	Jamii Bora Bank Limited	Jamii Bora House, Koinange Street
A32	Kenya Commercial Bank Limited	Kencom House, 8th Floor, Moi Avenue
A33	K-Rep Bank Limited	K-Rep Centre, Wood Avenue, Kilimani
A34	Middle East Bank (K) Limited	Mebank Tower - Milimani Road-Milimani
A35	National Bank of Kenya Limited	National Bank Building, 2nd Floor, Harambee Avenue
A36	NIC Bank Limited	N.I.C House, Masaba Road- Upper Hill
A37	Oriental Commercial Bank Limited	Apollo Centre, 2nd Floor, Ring Road- Westlands
A38	Paramount Universal Bank Limited	Sound Plaza Building, 4th Floor, Woodvale Grove, Westlands
A39	Prime Bank Limited	Prime Bank Building, Chiromo Lane / Riverside Drive-Junction, Westlands
A40	Standard Chartered Bank Kenya Limited	Standard Chartered Building- Westlands Road- Chiromo Lane- Westlands
A41	Trans-National Bank Limited	Transnational Plaza, City Hall Way
A42	UBA Kenya Bank Limited	Apollo Centre, 1st Floor, Ring Road/Vale Close, Westlands
A43	Victoria Commercial Bank Limited	Victoria Towers, Mezzanine Floor, Kilimanjaro Avenue, Upper Hill
A44	Housing Finance Company Limited	Rehani House. 2nd Floor, Kenyatta Avenue/ Koinange Street -Junction.

Source: CBK Bank Supervisory Annual Report 2012

APPENDIX II: LETTER OF INTRODUCTION

APPENDIX III: QUESTIONNAIRE

Part A. Institutional Information

Name of Your Bank													
Please indicate the name of the contact person for this questionnaire and your position in the Bank.	Name: Position:												
To which of the following types of banks does your bank belong?	<table style="width: 100%; border: none;"> <tr> <td style="width: 70%;">Public sector</td> <td style="width: 30%; text-align: center;"><input type="checkbox"/></td> </tr> <tr> <td>Private sector</td> <td style="text-align: center;"><input type="checkbox"/></td> </tr> <tr> <td>Foreign Bank</td> <td style="text-align: center;"><input type="checkbox"/></td> </tr> </table>	Public sector	<input type="checkbox"/>	Private sector	<input type="checkbox"/>	Foreign Bank	<input type="checkbox"/>						
Public sector	<input type="checkbox"/>												
Private sector	<input type="checkbox"/>												
Foreign Bank	<input type="checkbox"/>												
Is the bank exposed to the following types of financial risk?(Tick as many as appropriate)	<table style="width: 100%; border: none;"> <tr> <td style="width: 70%;">Market(Price) Risk</td> <td style="width: 30%; text-align: center;"><input type="checkbox"/></td> </tr> <tr> <td>Liquidity Risk</td> <td style="text-align: center;"><input type="checkbox"/></td> </tr> <tr> <td>Credit Risk</td> <td style="text-align: center;"><input type="checkbox"/></td> </tr> <tr> <td>Foreign Exchange Risk</td> <td style="text-align: center;"><input type="checkbox"/></td> </tr> <tr> <td>Interest rate Risk</td> <td style="text-align: center;"><input type="checkbox"/></td> </tr> <tr> <td>Others (Specify).....</td> <td></td> </tr> </table>	Market(Price) Risk	<input type="checkbox"/>	Liquidity Risk	<input type="checkbox"/>	Credit Risk	<input type="checkbox"/>	Foreign Exchange Risk	<input type="checkbox"/>	Interest rate Risk	<input type="checkbox"/>	Others (Specify).....	
Market(Price) Risk	<input type="checkbox"/>												
Liquidity Risk	<input type="checkbox"/>												
Credit Risk	<input type="checkbox"/>												
Foreign Exchange Risk	<input type="checkbox"/>												
Interest rate Risk	<input type="checkbox"/>												
Others (Specify).....													
Where is your parent/head office located?													

Part B-Risk Management Environment

	Strongly disagree	Disagree	No opinion	Agree	Strongly Agree
1. There is a formal system of Risk Management in the bank.					
2. The Board of directors outline the overall risk objectives.					
3. There is a section/department responsible for identifying, monitoring, and controlling various risks.					
4. The bank have internal guidelines/rules and concrete procedures with respect to the risk management system.					
5. The bank has the policy of diversifying investment across different sectors.					
6. Your bank complies with Basel committee standards.					
7. Your Bank has adopted and utilised Revised CBK Financial Risk management Guidelines					
8. Your Bank has adopted and utilised Revised CBK Prudential Guidelines					
9. There is a budgetary allocation to the risk management function.					

Part C-Risk Measurement

	Strongly disagree	Disagree	No opinion	Agree	Strongly Agree
1. There is a computerized support system for estimating the variability of earnings and risk management.					
2. The bank regularly conducts simulation analysis and measure benchmark (interest) rate risk sensitivity.					
3. The bank uses Gap Analysis					
4. The bank uses Duration Analysis					
5. The bank uses Maturity Matching Analysis					
6. The bank uses Value at Risk analysis					
7. The bank uses Estimates of Worst Case scenarios/stress testing for risk analysis.					
8. The bank use Risk Adjusted Rate of Return on Capital (RAROC)					
9. The bank use has other Internal Risk Rating System					

Part D-Risk Mitigation

	Strongly disagree	Disagree	No opinion	Agree	Strongly Agree
1. There are Derivatives instruments to mitigate financial risk.					
2. The credit limits for individual counterparty are set by a committee.					
3. There are mark-up rates on assets set taking account of the risk factors or asset grading.					
4. The bank regularly (weekly) compiles a maturity ladder chart according to settlement date and monitor cash position gaps.					
5. The bank regularly conducts simulation analysis and measure benchmark (interest) rate risk sensitivity.					
6. The bank has a quantitative support system for assessing customers' credit standing					
7. There is credit rating of prospective investors.					

Part E-Risk Monitoring

	Strongly disagree	Disagree	No opinion	Agree	Strongly Agree
1. The bank periodically reappraises collateral (asset).					
2. The bank confirms a guarantor's intention to guarantee loans with a signed document.					
3. For international loans, the bank regularly reviews country ratings.					
4. The bank monitors the borrower's business performance after loan extension.					
How often does the bank produce the following reports?	Annually	Quarterly	Monthly	Weekly	Daily
5. Credit risk report					
6. Market risk report					
7. Interest rate risk report					
8. Liquidity risk report					
9. Foreign exchange risk report					
10. Capital at Risk					

Part F- Adequate Internal Controls

	Strongly disagree	Disagree	No opinion	Agree	Strongly Agree
1. The bank have put in place an internal control system capable of swiftly dealing with newly recognized risks arising from changes in environment, etc.,					
2. There is a separation of duties between those who generate risks and those who manage and control risks.					
3. The bank have countermeasures (contingency plans) against disasters and accidents.					
4. The Internal Auditor verify the authenticity of accounts and risk reports prepared.					
5. The bank has backups of software and data files.					
6. There is a Risk Committee in the Board Level.					

THANK YOU FOR YOUR CO-OPERATION.

APPENDIX IV: RETURN ON ASSETS 2008-2012

	Bank	Return on Assets					
		2008	2009	2010	2011	2012	AVERAGE
A1	African Banking Corporation Limited	3.30%	2.82%	4.67%	4.12%	2.90%	3.56%
A2	Bank of Africa Kenya Limited	0.70%	1.53%	1.81%	1.43%	1.30%	1.35%
A3	Bank of Baroda (K) Limited	3.40%	3.24%	5.65%	4.57%	3.60%	4.09%
A4	Bank of India	5.00%	3.91%	5.04%	4.18%	2.40%	4.11%
A5	Barclays Bank of Kenya Limited	4.70%	5.30%	6.24%	7.18%	7.00%	6.08%
A6	CFC Stanbic Bank Limited	1.50%	1.35%	1.96%	2.23%	3.50%	2.11%
A8	Chase Bank (K) Limited	2.40%	2.42%	2.45%	2.33%	2.70%	2.46%
A9	Citibank N.A Kenya	7.00%	5.92%	4.64%	6.43%	10.40%	6.88%
A10	Commercial Bank of Africa Limited	3.30%	3.00%	4.24%	3.58%	4.00%	3.62%
A11	Consolidated Bank of Kenya Limited	1.50%	1.54%	2.46%	1.61%	1.00%	1.62%
A12	Co-operative Bank of Kenya Limited	3.70%	3.26%	3.61%	3.68%	4.80%	3.81%
A13	Credit Bank Limited	2.10%	2.15%	0.74%	0.95%	1.30%	1.45%
A14	Development Bank of Kenya Limited	2.60%	2.27%	2.22%	1.37%	0.80%	1.85%
A15	Diamond Trust Bank (Kenya) Limited	3.10%	3.44%	4.90%	4.19%	4.90%	4.11%
A16	Dubai Bank Kenya Limited	0.30%	0.41%	0.18%	0.90%	-1.20%	0.12%
A17	Ecobank Kenya Limited	0.50%	-7.13%	0.70%	0.45%	-4.80%	-2.06%
A18	Equatorial Commercial Bank Limited	-0.20%	1.69%	-0.32%	0.55%	-4.60%	-0.58%
A19	Equity Bank Limited	6.10%	5.66%	6.95%	6.84%	7.40%	6.59%
A20	Family Bank Limited	5.00%	2.50%	2.48%	2.01%	2.70%	2.94%
A21	Fidelity Commercial Bank Limited	1.70%	0.94%	4.59%	2.79%	0.90%	2.18%
A22	Fina Bank Limited	0.80%	0.18%	1.07%	2.12%	2.00%	1.23%
A23	First Community Bank Limited	-9.60%	-3.42%	-2.50%	1.28%	2.90%	-2.27%
A24	Giro Commercial Bank Limited	2.00%	2.63%	6.20%	2.79%	1.70%	3.06%
A25	Guardian Bank Limited	0.70%	0.83%	1.39%	1.92%	1.90%	1.35%
A26	Gulf African Bank Limited	-7.60%	-2.10%	0.49%	1.20%	2.80%	-1.04%
A27	Habib Bank A.G Zurich	3.60%	3.85%	3.05%	2.91%	4.20%	3.52%
A28	Habib Bank Limited	3.20%	4.16%	4.34%	4.62%	6.50%	4.56%
A29	Imperial Bank Limited	4.90%	5.09%	6.43%	6.37%	5.50%	5.66%
A30	I & M Bank Limited	4.40%	3.94%	4.80%	5.80%	5.20%	4.83%
A31	Jamii Bora Bank Limited			-4.85%	-1.79%	1.50%	-1.71%
A32	Kenya Commercial Bank Limited	3.00%	3.57%	5.17%	4.98%	5.20%	4.38%
A33	K-Rep Bank Limited	-5.60%	-3.76%	1.44%	2.75%	3.20%	-0.39%
A34	Middle East Bank (K) Limited	0.90%	1.37%	5.11%	1.99%	0.80%	2.03%
A35	National Bank of Kenya Limited	4.00%	4.13%	4.49%	3.56%	1.70%	3.58%
A36	NIC Bank Limited	3.40%	3.30%	4.41%	4.57%	4.90%	4.12%
A37	Oriental Commercial Bank Limited	2.50%	0.97%	4.01%	3.83%	1.80%	2.62%
A38	Paramount Universal Bank Limited	1.40%	1.23%	6.35%	2.39%	1.20%	2.51%
A39	Prime Bank Limited	2.30%	2.33%	2.37%	3.07%	2.70%	2.55%
A40	Standard Chartered Bank Kenya Limited	4.70%	5.39%	5.37%	5.03%	5.90%	5.28%
A41	Trans-National Bank Limited	3.30%	2.36%	3.33%	4.05%	3.70%	3.35%
A42	UBA Kenya Bank Limited		-17.47%	-5.85%	-5.72%	-13.60%	-10.66%
A43	Victoria Commercial Bank Limited	3.80%	4.22%	5.00%	4.31%	4.80%	4.43%
A44	Housing Finance Company Limited	1.30%	1.83%	1.91%	3.10%	2.00%	2.03%

Source: CBK Bank Supervisory Annual Reports 2008-2012