ENTERPRISE RISK MANAGEMENT STRATEGIES AND PRACTICES AS DETERMINANTS OF PERFORMANCE IN COMMERCIAL BANKS IN KENYA

BY

MAMI WAMBUA

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DECLARATION

This management research project is my original work and has not been presented for examination in any other university.

Signed…… Date……

MAMI WAMBUA

D61/71297/2008

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

Signed…… Date……

DR. JOHN YABS

Department of Business Administration

DEDICATION

To my husband Mike and Tasha my daughter; the legacy continues

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First, I thank the Almighty God for the gift of life and for giving me the skills, acknowledge and energy to be able to complete this paper.

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ABSTRACT

As far as enterprise risk management strategies and practices are concerned, there appears to be little done especially in Kenya. This creates a gap in literature that the present study sought to bridge. This study differs from the previous ones because it focuses on a developing nation, Kenya, which was not the focus of the previous studies hence such studies cannot be generalized to Kenya. Further, the enterprise risk management is used in this study as a strategic concept. This significantly shifts focus from the previous studies. The study therefore sought to analyze the various risk management practices adopted by Commercial Banks and their influence on bank performance in Kenya. A cross-sectional survey design was used in this study. A total of 36 banks took part in the study (80% response rate). Both primary and secondary data were collected. The primary data was collected through questionnaires while secondary data was collected from annual statements. The questionnaires were administered to the risk management staff using drop and pick later method. Both descriptive statistics and inferential statistics (especially regression analysis) were used in the analysis of data.

The regression analysis revealed that there was a very high significant positive correlation between credit risk management practices and performance (R = 0.779, Sig. = 0.002). The R^2 of 0.607 indicates that credit risk management practices influenced 60.7% of the variances in performance of commercial banks. The results also indicate that liquidity risk management practices had an insignificant positive influence on performance (R = 0.205, Sig = 0.545). The R^2 of 0.042 indicates that liquidity risk management practices influenced 4.2% of the variances in performance of commercial banks. The results also show that interest rate risk management practices had a significant positive influence on performance (R = 0.610, Sig = 0.046). The R^2 of 0.372 indicates that interest rate risk management practices influenced 37.2% of the variances in performance of commercial banks. The study also revealed that foreign exchange risk management practices had a significant positive influence on performance (R = 0.902, Sig = 0.000). The R^2 of 0.813 indicates that foreign exchange risk management practices influenced 81.3% of the variances in performance of commercial banks.

The study recommends that banks need to increase their credit risk management practices as this would have far reaching effects as far as better performance is concerned. Thus, company should use more of exposure ceilings, credit reviews, risk rating models, risk base scientific pricing, portfolio management and loan reviews. The study also recommends that foreign exchange risk management practices need to be practiced more by the commercial banks as they may have a profound positive effect on their performance. The study also recommends that banks need to take more care in terms of liquidity risk management practices. This is because overemphasis on some of the liquidity risk management practices may have a negative effect on firm performance that more care needs to be put in place when designing such risk management practices. The study also recommends that the banks need to be careful when designing strategies to mitigate interest rate risks. This is because poor designs may have a negative influence on bank performance.

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LIST OF ABBREVIATIONS

ADRs	American Depository Receipts
CAPM	Capital Asset Pricing Model
COSO	Committee of Sponsoring Organizations of the Treadway Commission
ERM	Enterprise Risk Management
GDP	Gross Domestic Product
MM	Modigliani Miller
MPT	Modern Portfolio Theory
OBS	Off-Balance Sheet
RM	Risk Management
SAS	Statistical Analysis Software
SPSS	Statistical Package for Social Sciences
UAE	United Arab Emirates
USA	United States of America

CHAPTER ONE: INTRODUCTION

1.1 Background of the study

Risk is an intrinsic part of doing business in banking and financial services, as firms must be willing to take on a fair amount of risk in order to provide the most value to shareholders. To successfully do so, one must strike an optimal balance between growth and return objectives and the associated risks and apply resources efficiently and effectively in pursuit of those goals (Sobel and Reding, 2004). That is where risk management (RM) comes in.

1.1.1 The Concept of Enterprise Risk Management

Risk management has emerged as a new paradigm for managing the portfolio of risks that face organizations, and policy makers continue to focus on mechanisms to improve corporate governance and risk management. Despite these developments, there is little research on factors associated with the implementation of Risk Management. Research is needed to provide insights as to why some organizations are responding to changing risk profiles by embracing Risk Management and others are not (Beasley, et al., 2005). Enterprise Risk Management (ERM) encompasses aligning risk appetite and strategy, enhancing risk response decisions, reducing operational surprises and losses, identifying and managing multiple and cross-enterprise risks, seizing opportunities, and improving deployment of capital (Beasley, et al., 2005).

Corporate scandals and diminished confidence in financial reporting among investors and creditors have renewed Corporate Governance as a top-of-mind priority for Boards of Directors, Management, Auditors, and Stakeholders. At the same time, the number of

companies trying to manage risk across the entire enterprise is rising sharply. Thus, there is need for companies to effectively integrate Enterprise Risk Management with Corporate Governance (Sobel and Reding, 2004)

These capabilities inherent in enterprise risk management help management achieve the entity's performance and profitability targets and prevent loss of resources. Enterprise Risk Management helps ensure effective reporting and compliance with laws and regulations, and helps avoid damage to the entity's reputation and associated consequences. It delivers a current, credible understanding of the risks unique to an organization across a broad spectrum that includes all types of risk (credit risk, operational risk, market risk, liquidity risk and trading risk), lines of business and other key dimensions (SAS, 2010). In sum, Enterprise Risk Management helps an entity get to where it wants to go and avoid pitfalls and surprises along the way (Nocco and Stulz, 2006)

Risk management strategies are the actions that firms take in order to respond to the identified risks. Liebenberg and Hoyt (2003) stated that enterprise risk management has captured the attention of risk management professionals and academics worldwide. Unlike the traditional silo-based approach to corporate risk management, ERM enables firms to benefit from an integrated approach to managing risk that shifts the focus of the risk management function from primarily defensive to increasingly offensive and strategic (Liebenberg and Hoyt, 2003).

There are a number of risks that firms deal with. These are credit risks, market risks, liquidity risks and operational risks (Nocco and Stulz, 2006). Credit risk arises from the potential that an obligator is either unwilling to perform on an obligation or its ability to perform such obligation is impaired resulting in economic loss to the Bank. Market risk is the risk that the value of on and off-balance sheet positions of a financial institution will be adversely affected by movements in market rates or prices such as interest rates, foreign exchange rates, equity prices, credit spreads and/or commodity prices resulting in a loss to earnings and capital. Liquidity risk is the potential for loss to an institution arising from either its inability to meet its obligations or to fund increases in assets as they fall due without incurring unacceptable cost or losses. Operational risk is the risk of loss resulting from inadequate or failed internal processes, people and system or from external events.

According to Dorfman (2007), once risks have been identified and assessed, all techniques to manage the risk fall into one or more of these four major categories:

i. Risk Avoidance – Involves not performing an activity that could carry risk. (eliminate, withdraw from or not become involved in the activity). Avoidance may seem the answer to all risks but avoiding risks also means losing out on the potential gain that accepting the risk may have allowed.
ii. Risk Abatement- is the process of combining loss prevention or loss control to minimize a risk. It is also called risk reduction or risk optimization. This risk the loss potential and decrease the frequency or severity of the loss management strategy serves to reduce

iii. Risk Allocation is the sharing of the risk burden with other parties. (Transfer - outsource or insure),

iv. Risk retention (accepts and budget). This is a good strategy only is it is impossible to transfer the risk.

1.1.2 Organisational Performance

Organisational performance encompasses three specific areas of firm outcomes: (1) financial performance (profits, return on assets, return on investment, etc.); (2) market performance (sales, market share, etc.); and (3) shareholder return (total shareholder return, economic value added, etc.) (Divenney et al., 2008).

Organizational performance is the ultimate dependent variable of interest for those concerned with just about any area of management: accounting is concerned with measuring performance; marketing with customer satisfaction and market share; operations management with productivity and cost of operations, organizational behavior with employee satisfaction and structural efficiency; and finance with capital market response to all of the above. March and Sutton (1997) found that roughly 28% of articles in the Strategic Management Journal, the Academy of Management Journal and the Administrative Science Quarterly included some measure of firm performance.

Performance is so common in organizational research that it is rarely explicitly considered or justified; instead it is treated as a seemingly unquestionable assumption (Devinney et al., 2005). The multidimensionality of performance covers the many ways in which

organizations can be successful; the domain of which is arguably as large as the many ways in which organizations operate and interact with their environment.

1.1.3 Overview of Commercial Banks in Kenya

Commercial banks are licensed and regulated under the Banking Act, Cap 488 and Prudential Regulations issued there-under. There are currently 45 commercial banks in Kenya. Out of the 45 institutions, 33 are locally owned and 12 are foreign owned. The locally owned financial institutions comprise 3 banks with significant government shareholding and 28 privately owned commercial. The foreign owned financial institutions comprised 8 locally incorporated foreign banks and 4 branches of foreign incorporated banks. Of the 42 private Banking institutions in the sector, 71% are locally owned and the remaining 29% are foreign owned (Bank Supervision Annual Report, 2008).

The Commercial Banks have been selected for the study because of the recent emphasis on Risk Management in Kenyan Banking driven by the Central Bank viz. the Central Bank of Kenya guidelines as well as banks' own recent initiatives towards risk management. A process of financial liberalization was initiated in the 90s to make the banking system profitable, efficient, and resilient. The liberalization measures consisted of deregulation of entry, interest rates, and branch licensing, as well as encouragement to state owned banks to get listed on stock exchanges. With the liberalization came risks that banks needed to manage. It is therefore a suitable time to perform an analysis of risk management strategies in Commercial Banks in Kenya. The Basel-II norms, which include a move towards better risk management practices, also necessitate such a study (Bank Supervision Annual Report, 2008).

1.2 Statement of the Problem

The interest in Risk Management in Commercial Banks can be traced to Merton (1995) who argued that financial systems should be analyzed in terms of a functional perspective rather than an institutional perspective. Commercial Banking is a combination of related activities such as providing products and services to the customers, engaging in financial intermediation and management of risk. In recent years, risk management has received increasing focus as a central activity of Commercial Banks. Research on financial services has followed this functional approach by relating Banks' activities to the functions performed by them. Merton (1989) suggested that the central function of a financial institution is its ability to distribute risk across different participants. According to Saunders and Cornett (2006), modern financial institutions are in the risk management business as they undertake the functions of bearing and managing risks on behalf of their customers through the pooling of risks and the sale of their services as risk specialists.

The banking industry in Kenya is faced with various risks that are prevalent in the financial sector. The most notable risks are attributed to credit, liquidity, interest rate, and foreign exchange. As these risks heighten, there is need for banks to manage them better. Better management of risks may have a profound effect on firm performance in terms of reducing the risks and therefore reducing the losses. Studies as far as the relationship between risk management and performance is concerned are scarce. Until recently when the Committee of Sponsoring Organizations of the Treadway Commission, COSO, supported the integration of Strategy and Enterprise Risk Management, the risk management was not considered much of a strategic concept (COSO, 2004). A few studies done in the area include Liebenberg and

Hoyt (2003) on the determinants of enterprise risk management adoption, Beasley et al., (2005) on factors associated with the stage of enterprise risk management implementation, Pagach and Warr (2008) on the effect of adoption of enterprise risk management principles on firm's long-term performance and Pagach and Warr (2007) on the factors that influence firm level adoption of enterprise risk management.

A search on studied on risk management in Kenya yielded studies done on credit risk management (Njiru, 2003; Kioko, 2008; Ngare, 2008; Simiyu, 2008; and Wambugu, 2008), information systems risk management (Weru, 208) and foreign exchange risk management (Kipchirchir, 2008). In as much as Kioko (2008) and Ngare (2008) focused on Commercial Banks, the concept that they focused on was credit risk management techniques. There is therefore a gap as far as studying the influence of risk management practices on firm performance is concerned.

1.3 Objectives of the Study

The objectives of this study were:

i. To establish the ERM strategies adopted by commercial banks in Kenya.
ii. To assess the effectiveness of ERM strategies adopted by commercial banks in Kenya.
iii. To determine the effect of enterprise risk management strategies on the performance of commercial banks in Kenya.

1.4 Significance of the Study

This study may be important to various groups of people. The policy makers can obtain knowledge of the financial sector dynamics as regards risk management strategies in Kenya. They can therefore obtain guidance from this study in designing appropriate risk management strategies and policies that may regulate the sector.

The study can provide information to potential and current scholars on risk management among commercial banks in Kenya. This can expand their knowledge on strategic responses in state corporations and also identify areas of further study.

CHAPTER TWO: LITERATURE REVIEW

2.1 Theoretical Review

The theories reviewed here are borrowed from the finance literature related to enterprise risk management. These theories are Modigliani and Miller, Capital Market theory and Modern Portfolio Theory.

2.1.1 Modigliani-Miller Framework

There is a broad literature on risk management decisions for firms in general, beginning with Modigliani and Miller (1959): Their famous theorem states that in a world of perfect and complete markets, financial decisions are irrelevant as they do not alter the value of the shareholder's stake in the firm. The only way to increase shareholder's wealth is to increase value of the firm's assets. Neither the capital structure nor the risk management decisions have an impact on shareholder's wealth.

Some important deviations from the perfect capital markets in the Modigliani Miller setting have been identified, giving motivations for firms to care about risk management, such as taxes, bankruptcy costs, agency costs and others (Gossy, 2008). When these reasons for risk management are incorporated into the firm's objective function, one finds the following basic result: When all risks are perfectly tradeable the firm maximizes shareholder value by hedging completely (Gossy, 2008; Mozumdar, 2001).

Modigliani and Miller (1959) state that under the restrictive neoclassical assumptions, corporate financial decisions do not influence the value of the firm. These decisions simply

redistribute the income stream among different investors. As long as investors can act in the capital markets at the same terms and conditions as the firm itself, the only way to impact firm value is by influencing the expected level of firm cash flows (Gossy, 2008).

Since ERM is part of an overall financing policy, the MM findings directly have important implications for the ERM strategy of the firm. Under the MM model, any investor's wealth position is unaffected by corporate risk management activities on the part of the firm (Gossy, 2008). Following this argument, a MM disciple would argue against doing any risk management at all since it is a purely financial transaction (Gossy, 2008). The immense importance of the MM-framework for corporate risk management, however, becomes apparent when it is used a starting point for identifying conditions under which corporate risk management makes economic sense. Such a positive theory of corporate risk management can be derived by relaxing the neoclassical assumptions of the MM-framework.

2.1.2 Capital Market Theory

The concept of risk is closely related to the insights of portfolio theory. The most important paradigm of risk is part of a set of results known in the financial economics literature as the Capital Asset Pricing Model (CAPM) developed by Sharp (1964) and Lintner (1965) and later refined by Black (1972). It represents an extension and simplification of the model by Markowitz (1952). The Markowitz model was the first theorizing a relationship between risk and return. In his model, there are as many efficient portfolios are there are investor risk preferences. All efficient portfolios must lie on the mean-variance investment frontiers where investors can get a higher return only by accepting a higher level of risk (Gossy, 2008). The

CAPM extends this theory to a situation of equilibrium. The CAPM argues that all investors will hold the same efficient portfolio (the market portfolio) regardless of their individual risk preferences. Thereby, the CAPM is capable of determining the market price for risk and an appropriate risk measure for a single asset (Gossy, 2008).

There have been numerous anomalies of the CAPM that have been discovered by finance researchers. This has initiated a discussion of the usefulness of the CAPM for the field of strategic management starting with the contribution by Bettis (1983). He detects a conundrum regarding the role of risk in strategic management context and states the main points of controversy between finance and strategy (Vicente-Lorente, 2001). In particular, he seriously questions the implications of the CAPM for strategic management but especially corporate risk management. He identifies an implied recommendation in the CAPM to corporate management not to be concerned at all about firm-specific risks. Bettis (1983) argued that business risks are associated with firm specific resources and competencies and are strongly related to the firm-environment interface.

2.1.3 Modern Portfolio Theory

Modern Portfolio Theory (MPT) is a theory of investment which tries to maximize return and minimize risk by carefully choosing different assets (Markowitz, 1952). MPT is a mathematical formulation of the concept of diversification in investing, with the aim of selecting a collection of investment assets that has collectively lower risk than any individual asset. This is possible, in theory, because different types of assets often change in value in opposite ways. For example, when the prices in the stock market fall, the prices in the bond

market often increase, and vice versa. A collection of both types of assets can therefore have lower overall risk than either individually (Mandelbrot, and Hudson, 2004)The Primary principle upon which Modern Portfolio Theory is based (MPT) is the random walk hypothesis which sates that the movement of asset prices follows an Unpredictable path: the path as a trend that is based on the long-run nominal growth of corporate earnings per share, but fluctuations around the trend are random (Chandra, Siddharth and Shadel, 2007).

2.2 Enterprise Risk Management Strategies

A conceptual framework derived from the objectives of the study, is presented below. The variables of interest shall be: Credit Risk Management, Liquidity Risk Management, Interest Rate Risk Management and Foreign Exchange Risk Management.

2.2.1 Credit risk management

Credit Risk is the potential that a Bank borrower/counterpart fails to meet the obligations on agreed terms. There is always scope for the borrower to default from his commitments for one or the other reason resulting in crystallization of Credit risk to the Bank. These losses could take the form outright default or alternatively, losses from changes in portfolio value arising from actual or perceived deterioration in credit quality that is short of default (Nocco and Stulz, 2006).

The management of credit risk includes (a) measurement through credit rating/ scoring, (b) quantification through estimate of expected loan losses, (c) Pricing on a scientific basis and (d) Controlling through effective Loan Review Mechanism and Portfolio Management (Nocco and Stulz, 2006).

2.2.2 Liquidity risk management

Bank Deposits generally have a much shorter contractual maturity than loans and liquidity management needs to provide a cushion to cover anticipated deposit withdrawals. Liquidity is the ability to efficiently accommodate deposit as also reduction in liabilities and to fund the loan growth and possible funding of the off-balance sheet claims. The cash flows are placed in different time budgets based on future likely behaviour of assets, liabilities and off-balance sheet items (Al-Tamini and Al-Mazrooei, 2007).

Tolerance levels on mismatches should be fixed for various maturities depending upon the asset liability profile, deposit mix, nature of cash flow etc. Bank should track the impact of pre-payment of loans & premature closure of deposits so as to realistically estimate the cash flow profile (Nocco and Stulz, 2006).

2.2.3 Interest rate risk management

Interest Rate Risk is the potential negative impact on the Net Interest Income and it refers to the vulnerability of an institution's financial condition to the movement in interest rates. Changes in interest rate affect earnings, value of assets, liability off-balance sheet items and cash flow (Sensarma and Jayadev, 2009).

Hence, the objective of Interest rate risk management is to maintain earnings, improve the capability, ability to absorb potential loss and to ensure the adequacy of the compensation received for the risk taken and effect risk return trade-off. Management of interest rate risk

aims at capturing the risks arising from the maturity and re-pricing mismatches and is measured both from the earnings and economic value perspective (Sensarma and Jayadev, 2009).

2.2.4 Foreign exchange risk management

Foreign exchange risk is the risk that a Bank may suffer loss as a result of adverse exchange rate movement during a period in which it has an open position, either spot or forward or both in same foreign currency. Even in case where spot or forward positions in individual currencies are balanced the maturity pattern of forward transactions may produce mismatches (Al-Tamimi, 2002).

There is also a settlement risk arising out of default of the counter party and out of time lag in settlement of one currency in one center and the settlement of another currency in another time zone. Banks are also exposed to interest rate risk, which arises from the maturity mismatch of foreign currency position (Al-Tamimi, 2002).

2.3 Effect of Enterprise Risk Management Strategies on Performance

The present study aims to unify two world views shared by financial and strategic management. While some of the corporate finance students who rely on traditional financial theories are mainly concerned with the market and market factors affecting security returns, intermediate work in the strategic management field revolved around one of three themes: (1) the effects of the environment on strategy, (2) the importance of the fit between strategy and environment and (3) the effects of strategy on performance (Hoskisson, Hitt, Wan, & Yiu,

1999). Owing to its roots as a more applied area, strategic management has traditionally focused on business concepts that affect firm performance.

Most of the theories regarding enterprise risk management stem from the field of finance. Thus, the theories presented here are drawn from the financial management theories on risk as well as some from the strategic management. The main theories presented here are the Modigliani-Miller framework, capital market theory and resourced based view of the firm. According to the Committee of Sponsoring Organizations of the Treadway Commission, COSO (2004), ERM consists of eight interrelated components. These are derived from the way management runs an enterprise and are integrated with the management process. These components are: internal environment, objective setting, event identification, risk assessment, risk response, control activities, information and communication, and monitoring.

The internal environment encompasses the tone of an organization, and sets the basis for how risk is viewed and addressed by an entity's people, including risk management philosophy and risk appetite, integrity and ethical values, and the environment in which they operate (Nocco and Stulz, 2006). Objectives must exist before management can identify potential events affecting their achievement. Enterprise risk management ensures that management has in place a process to set objectives and that the chosen objectives support and align with the entity's mission and are consistent with its risk appetite (COSO, 2004).

Internal and external events affecting achievement of an entity's objectives must be identified, distinguishing between risks and opportunities. Opportunities are channeled back

to management's strategy or objective-setting processes (Saunders and Cornett, 2006). Risks are analyzed, considering likelihood and impact, as a basis for determining how they should be managed. Risks are assessed on an inherent and a residual basis.

The management selects risk responses – avoiding, accepting, reducing, or sharing risk – developing a set of actions to align risks with the entity's risk tolerances and risk appetite (COSO, 2004). Policies and procedures are established and implemented to help ensure the risk responses are effectively carried out. Relevant information is identified, captured, and communicated in a form and timeframe that enable people to carry out their responsibilities. Effective communication also occurs in a broader sense, flowing down, across, and up the entity. The entirety of enterprise risk management is monitored and modifications made as necessary. Monitoring is accomplished through ongoing management activities, separate evaluations, or both (Beasley, Clune and Dana, 2005).

There have been a large number of studies published about risk management in general. However, the number of the empirical studies on risk management practices in financial institutions was found to be relatively small. The following is an attempt to summarize the main conclusions of some selected studies. Linbo Fan (2004) examined efficiency versus risk in large domestic USA banks. He found that profit efficiency is sensitive to credit risk and insolvency risk but not to liquidity risk or to the mix of loan products. Hahm (2004) conducted an empirical study on interest rate and exchange rate exposures of banking institutions in pre-crisis Korea. Results indicated that Korean commercial banks and merchant banking corporations had been significantly exposed to both interest rate and

exchange rate risks, and that the subsequent profitability of commercial banks was significantly associated with the degree of pre-crisis exposure. The results also indicated that the Korean case highlights the importance of upgrading financial supervision and risk management practices as a precondition for successful financial liberalization.

Niinimaki (2004) in his paper entitled "The effects of competition on banks' risk taking" found that the magnitude of risk taking depends on the structure and side of the market in which competition takes place. He also concluded that if the bank is a monopoly or banks are competing only in the loan market, deposit insurance has no effect on risk taking. Banks in this situation tend to take risks, although extreme risk taking is avoided. In contrast, introducing deposit insurance increases risk taking if banks are competing for deposits. In this case, deposit rates become excessively high, thereby forcing banks to take extreme risks.

Wetmore (2004) examined the relationship between liquidity risk and loans-to-core deposits ratio of large commercial bank holding companies. He concluded that the average loan-to-core deposit ratio had increased over the period studied, which reflects a change in the asset/liability management practices of banks. He also concluded that there is a positive relationship occurring between market risk and the change in loan-to-core deposits ratio after 1994, with a negative relationship occurring before 1994.

Wang and Sheng-Yung (2004) studied foreign exchange risk, world diversification and Taiwanese American depository receipts (ADRs). In this study they tried to answer the following question: Should USA investors purchase American depository receipts issued by

Taiwanese multinationals? Empirical results indicated that foreign exchange risk is priced in Taiwanese ADRs. Moreover, Taiwanese ADRs were shown to help USA investors diversify their portfolios globally. These findings suggest that Taiwanese ADRs are valid investment tools for USA investors who seek international diversifications.

Khambata and Bagdi (2003) examined off-balance-sheet (OBS) credit risk across the top 20 Japanese banks. The main results of this study indicated that financial derivatives are heavily used by the top four banks and that loan commitments are the largest source of credit risk among traditional OBS instruments. The results also indicated that there is a wide difference across the banks in the use of derivative leverage. As compared to USA and European banks, Japanese banks use fewer OBS instruments as a percentage of their assets. This implies that Japanese banks are more conservative and risk-averse in general than their USA or European counterparts, especially given the bad financial condition of Japanese banks.

Salas and Saurina (2002) examined credit risk in Spanish commercial and savings banks; they used panel data to compare the determinants of problem loans of Spanish commercial and savings banks in the period 1985-1997, taking into account both macroeconomic and individual bank-level variables. The GDP growth rate, firms, family indebtedness, rapid past credit or branch expansion, inefficiency, portfolio composition, size, net interest margin, capital ratio and market power are variables that explain credit risk. Their findings raise important bank supervisory policy issues: the use of bank-level variables as early warning indicators, the advantages of mergers of banks from different regions, and the role of banking competition and ownership in determining credit risk.

A study by Madanoglu (2005) investigated the concept of risk and its underlying dimensions that influence the restaurant industry's cash flows and stock returns. This study proposed a contemporary framework that enables restaurant industry executives to develop a better understanding of the risk factors (macroeconomic and industry) that influence their firms' cash flows and stock returns. The primary unit of analysis was at industry (portfolio) level. In addition, as a second step, three restaurant firms were selected to demonstrate the practical application of the model. Exploratory factor analysis indicated that the restaurant industry risk is represented by three dimensions: "Output," "PPI Meats," and "IP Restaurants." The macroeconomic risk construct was represented by the five variables of Arbitrage Pricing Theory of Chen et al. (1986). Time series-analysis regression of the portfolio of 75 restaurant firms, for the 1993-2004 period, revealed that macroeconomic variables explained a significant portion of restaurant stock returns. On the other hand, both macroeconomic and industry models explained a significant level of variation in operating cash flows. The addition of September 11 "dummy" variable improved the explained variation in stock returns for both equations (macroeconomic and industry). At a firm level, the industry model accounted for a significant variation in internal value drivers (operating cash flows, food cost, and labor cost) for all three restaurant companies. The industry risk model survived after controlling for the effect of macroeconomic variables on operating cash flows. The results indicate that the industry model provides a parsimonious solution in estimating variation in operating cash flows by capturing macroeconomic effects.

Al-Tamimi (2002) investigated the degree to which the UAE commercial banks use risks management techniques in dealing with different types of risk. The study found that the UAE

commercial banks were mainly facing credit risk. The study also found that inspection by branch managers and financial statement analysis were the main methods used in risk identification. The main techniques used in risk management according to this study were establishing standards, credit score, credit worthiness analysis, risk rating and collateral; the study also highlighted the willingness of the UAE commercial banks to use the most sophisticated risk management techniques, and recommended the adoption of a conservative credit policy.

Oldfield and Santomero (1997) investigated risk management in financial institutions. In this study, they suggested four steps for active risk management techniques: (1) the establishment of standards and reports; (2) the imposition of position limits and rules (i.e. contemporary exposures, credit limits and position concentration); (3) the creation of self investment guidelines and strategies; and (4) the alignment of incentive contracts and compensation (performance-based compensation contracts).

A study by Sensarma and Jayadev (2009) attempted to summarize the information contained in bank financial statements on the risk management capabilities of banks and then ascertain the sensitivity of bank stocks to risk management. The theoretical framework was derived from a bank's accounting identities. The study interpreted the selected accounting ratios as risk management variables and attempted to gauge the overall risk management capability of banks by summarizing these accounting ratios as scores through the application of multivariate statistical techniques. Finally, the study analyzed the impact of these risk management scores on stock returns through regression analysis. The results, based on data

for Indian banks, revealed that banks' risk management capabilities had been improving over time except for in the last two years. Returns on the banks' stocks appeared to be sensitive to risk management capability of banks. These results suggest that banks that want to enhance shareholder wealth have to focus on successfully managing various underlying risks. The findings have implications for investors who may benefit by going long on shares of banks that are better risk managers. The findings are also useful for the regulators in developing quantitative indicators of soundness of the banking system.

Al-Tamini and Al-Mazrooei (2007) sought to examine the degree to which the UAE banks use risk management practices and techniques in dealing with different types of risk. The secondary objective was to compare risk management practices between the two sets of banks. The authors developed a modified questionnaire, divided into two parts. The first part covered six aspects: understanding risk and risk management; risk identification; risk assessment and analysis; risk monitoring; risk management practices; and credit risk analysis. This part included 43 closed-ended questions based on an interval scale. The second part consisted of two closed-ended questions based on an ordinal scale dealing with two topics: methods of risk identification, and risks facing the sample banks. The study found that the three most important types of risk facing the UAE commercial banks were foreign exchange risk, followed by credit risk, then operating risk. It was also found that the UAE banks were somewhat efficient in managing risk, and risk identification and risk assessment and analysis were the most influencing variables in risk management practices. Finally, the results indicated that there was a significant difference between the UAE national and foreign banks in the practice of risk assessment and analysis, and in risk monitoring and controlling.

Kioko (2008) did a study on the credit risk management techniques of unsecured loans of Commercial Banks in Kenya. The study was a survey of various Commercial Banks. The study revealed that the Banks used a combination of credit management methods for unsecured loans. Further, Kipchichir (2008) did a study on foreign exchange risk management practices. The study was a survey of the motor vehicle industry in Kenya. The results revealed that the most commonly used foreign exchange risk management method was hedging.

In another study by Ngare (2008), credit risk management practices by commercial banks were sought. This was a survey of commercial banks in Kenya. The results revealed a combination of credit risk management methods used by commercial banks in Kenya. Njiru (2003) did a study on credit risk management by coffee cooperatives in Embu District. The study was a survey of coffee cooperatives in the area. The study revealed that the methods were similar to the ones commonly espoused in finance textbooks. Simiyu (2008) on the other hand sought to establish the credit risk management techniques in microfinance institutions in Kenya. The study design was survey of microfinance institutions in Nairobi. The study revealed that the methods did not differ from those of commercial banks. Lastly, Weru (2008) did an assessment of information systems risk management practices. This was a case study. The study revealed that the organization used various information system risk management strategies as recommended by COSO framework.

Nocco and Stulz (2006) argued that a carefully designed RM program - one in which all material corporate risks are viewed and managed within a single framework - can be a source

of long-run competitive advantage and value through its effects at both a "macro" or company-wide level and a "micro" or business-unit level. They argued that at the macro level, RM enables senior management to identify, measure, and limit to acceptable levels the net exposures faced by the firm. By managing such exposures mainly with the idea of cushioning downside outcomes and protecting the firm's credit rating, ERM helps maintain the firm's access to capital and other resources necessary to implement its strategy and business plan.

At the micro level, ERM adds value by ensuring that all material risks are owned, and risk-return tradeoffs carefully evaluated, by operating managers and employees throughout the firm (Nocco and Stulz, 2006). To this end, business unit managers are required to provide information about major risks associated with all new capital projects - information that can then used by senior management to evaluate the marginal impact of the projects on the firm's total risk.

CHAPTER THREE: RESEARCH METHODOLOGY

3.1 Introduction

This chapter presents the research methodology. First, a presentation of the research design is provided. This is followed by an explanation on the target population, description of research instruments, description of sample and sampling procedures, description of data collection procedures and a description of data analysis procedures.

3.2 Research Design

The present study used a cross-sectional survey design. The cross-sectional design is the most commonly used when the researcher seeks to collect cross-sectional data at one point in time. This method was selected because the researcher sought to collect data from a cross-section of banks at one point in time.

3.3 Study Population

The population of this study was all the commercial banks which had been operating in Kenya for at least five years. According to the Central Bank Supervision Report (2010) there were 45 licensed commercial banks operating in Kenya. The list of these banks is provided as appendix 3 and categorized according to the tiers.

3.4 Data Collection

Both primary and secondary data were used. Primary data were collected using questionnaires structured based on the objectives of the study. A sample of the questionnaire is provided as appendix 2. These helped capture data for objective 1 and 2. The research instruments were self-administered. The respondents were the risk managers in each of the

45 commercial banks. A three week period was given for the respondents to fill in the questionnaires after which they were collected for analysis. Secondary data were collected for purposes of objective 3. Thus, the financial statements of each of these banks were scrutinized for the three year period between 2007 and 2009.

3.5 Data Analysis

After collection of data, the questionnaires were coded and analyzed with the aid of SPSS. Objective 1 was analyzed using descriptive statistics especially the mean scores, standard deviations and percentages/frequencies. The same statistics were applied for objective 2. Further, in order to test for the relationship between risk management strategies and performance the regression analysis was used. The following regression model was used:

$$PERF = \alpha + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \mu$$

Where:

α, β, and μ are constants

PERF = performance; (dependent variable)

X_1 =credit risk management practices;

X_2 = interest rate risk management practices;

X_3 = foreign exchange risk management practices; and

X_4 = liquidity risk management practices.

CHAPTER FOUR: DATA ANALYSIS, FINDINGS AND DISCUSSION

4.1 Introduction

This chapter presents the results of the analysis. From the 45 questionnaires distributed to the 45 banks, a total of 36 were collected and used in the analysis. This indicates that the response rate was 80.0%. This is a high response rate given that the study was a survey thus indicating the willingness and interest of the banks to take part in the study.

4.2 Risk Management Practices by Commercial Banks

This section presents the findings on risk management practices by commercial banks in Kenya. The results are shown according to each of the objectives that were set in the beginning of the study.

4.2.1 Credit Risk Management Practices

This section presents the results on the extent to which the respondents agreed with the statements on credit risk management practices used by commercial banks in Kenya. The presentation is based on the percentages, mean scores and standard deviations.

Table 4.1: Use of exposure ceilings

	Frequency	Percent
Disagree	2	5.6
Indifferent	3	8.3
Agree	9	25.0
Strongly agree	22	61.1
Total	**36**	**100.0**

On the use of exposure ceilings to manage credit risk, the study found that 5.6% of the respondents disagreed, 8.3% were indifferent, 25% agreed and 61.1% disagreed. These results are shown in Table 4.1.

Table 4.2: Credit history review

	Frequency	**Percent**
Disagree	1	2.8
Indifferent	6	16.7
Agree	8	22.2
Strongly agree	21	58.3
Total	**36**	**100.0**

The study found that 2.8% of the respondents disagreed that the bank reviewed credit history of each client, 16.7% were indifferent, 22.2% agreed, while 58.3% strongly agreed. These results are summarised and presented in Table 4.2.

Table 4.3: Use of risk rating model

	Frequency	**Percent**
Disagree	1	2.8
Indifferent	4	11.1
Agree	11	30.6
Strongly agree	20	55.6
Total	**36**	**100.0**

The study found that 2.8% of the respondents disagreed on the bank use of risk rating models, 11.1% were indifferent, 30.6% agreed while 55.6% strongly agreed. These results are summarised and presented in Table 4.3.

Table 4.4: Use of risk scientific pricing

	Frequency	Percent
Strongly disagree	2	5.6
Disagree	4	11.1
Indifferent	20	55.6
Agree	7	19.4
Strongly agree	3	8.3
Total	**36**	**100.0**

The study found that 5.6% of the respondents strongly disagreed that banks use risk scientific pricing, 11.1% disagreed, 55.6% were indifferent, 19.4% agreed while 8.3% strongly agreed. These results are summarised and presented in Table 4.4.

Table 4.5: Use of credit portfolio management

	Frequency	Percent
Disagree	2	5.6
Agree	15	41.7
Strongly agree	19	52.8
Total	**36**	**100.0**

The study revealed that 5.6% of the respondents disagreed that the banks used credit portfolio management, 41.7% agreed, and 52.8% strongly agreed. These results are summarised and presented in Table 4.5.

Table 4.6: Credit audit

	Frequency	Percent
Agree	15	41.7
Strongly agree	21	58.3
Total	**36**	**100.0**

The study found that 41.7% of the respondents agreed that their banks perform credit audit or loan reviews and 58.3% strongly agreed. This indicates that the respondents agreed that credit audit was performed by all the banks with a varying degree. These results are shown in Table 4.6.

The mean scores and standard deviations on credit risk management practices for the banks surveyed are shown in Table 4.7. As shown, all the statements had mean scores above 3 indicating that these tools were used to manage credit risk on the banks. The most used tool was credit audit (4.58) followed by use of exposure ceilings (4.42) and credit portfolio management (4.42). The least used tool for managing credit risk was risk based scientific pricing where loans are linked to expected loss (3.12).

Table 4.7: Credit risk management practices

Statement	Mean score	Std. dev
The bank performs a credit audit or a loan review mechanism	4.58	0.50
The bank uses exposure ceilings to management credit risk	4.42	0.87
The bank uses a credit portfolio management to optimize the benefits of diversification and reduce adverse impacts of concentration	4.42	0.77
The bank uses a risk rating model using a comprehensive risk scoring system	4.39	0.80
The bank reviews the credit history of each client and renews them on timely basis	4.36	0.87
The bank uses a risk based scientific pricing where loans are linked to expected loss	3.12	0.93

4.2.2 Liquidity Risk Management Practices

The results in this section show the responses on liquidity risk management practices adopted by commercial banks in Kenya. The results are presented in tables and interpreted based on the percentages as well as the mean scores and standard deviations.

Table 4.8: Asset liability management

	Frequency	Percent
Agree	8	22.2
Strongly agree	28	77.8
Total	**36**	**100.0**

The study revealed that 22.2% of the respondents agreed that the banks carry out an asset liability management, and 77.8% strongly agreed. Thus, it can be noted that the respondents were in agreement that all the banks carry out asset liability management. These results are summarised and presented in Table 4.8.

Table 4.9: Fixing of tolerance levels on mismatches

	Frequency	Percent
Indifferent	10	27.8
Agree	19	52.8
Strongly agree	7	19.4
Total	**36**	**100.0**

The study found that 27.8% of the respondents were indifferent on whether tolerance levels on mismatches were fixed for various maturities. Further, 52.8% agreed and 19.4% strongly agreed. These results show that most of the respondents were in agreement that the banks fixed tolerance levels on mismatches for various maturities. These results are summarised in Table 4.9.

Table 4.10: Tracking impact of prepayment loans

	Frequency	Percent
Strongly disagree	1	2.8
Disagree	2	5.6
Indifferent	11	30.6
Agree	8	22.2
Strongly agree	14	38.9
Total	**36**	**100.0**

The study found that 2.8% of the respondents strongly disagreed that the banks track the impact of prepayment of loans, 5.6% disagreed, 30.6% were indifferent, 22.2% agreed while 38.9% strongly agreed. The results show that most of the respondents were in agreement that the banks track the impact of prepayment of loans. These results are summarised and presented in Table 4.10.

Table 4.11: Tracking premature closure of deposits

	Frequency	Percent
Disagree	1	2.8
Agree	17	47.2
Strongly agree	18	50.0
Total	**36**	**100.0**

The study found that 2.8% of the respondents disagreed that the banks track premature closure of deposits, 47.2% agreed and 50% strongly agreed. The results imply that most of the respondents agreed that the banks track premature closure of deposits. These results are summarised and presented in Table 4.11.

Table 4.12: Liquidity risk management practices

Statement	Mean score	Std. dev
The bank carries out an Asset Liability Management	4.78	0.42
The bank tracks premature closure of deposits	4.44	0.65
Tolerance levels on mismatches are fixed for various maturities	3.92	0.69
The bank tracks the impact of pre-payment of loans	3.89	1.09

The results on the mean scores shown in Table 4.12 indicate that liquidity risk management practices were prevalent among the commercial banks. As shown, the most tools used were asset liability management (4.78) and tracking of premature closure of deposits (4.44). The least used method was tracking the impact of pre-payment of loans.

4.2.3 Interest rate risk management practices

The results in this section show the responses on interest rate risk management practices adopted by commercial banks in Kenya. The results are presented in tables and interpreted based on the percentages as well as the mean scores and standard deviations.

Table 4.13: Maturity gap analysis

	Frequency	Percent
Disagree	1	2.8
Indifferent	5	13.9
Agree	11	30.6
Strongly agree	19	52.8
Total	**36**	**100.0**

The study revealed that 2.8% of the respondents disagreed that the banks perform maturity gap analysis, 13.9% were indifferent, 30.6% agreed and 52.8% strongly agreed. These results

indicate that most of the banks performed maturity gap analysis. The results are presented in Table 4.13.

Table 4.14: Use of simulation

	Frequency	Percent
Disagree	2	5.6
Indifferent	15	41.7
Agree	11	30.6
Strongly agree	8	22.2
Total	**36**	**100.0**

The study found that 5.6% of the respondents disagreed that the banks used simulation to assess interest rate risk, 41.7% were indifferent, 30.6% agreed while 22.2% strongly agreed. The results show that most of the banks did not use simulation to assess interest rate risk. These results are summarised and presented in Table 4.14.

Table 4.15: Use of value at risk for interest rate risk

	Frequency	Percent
Disagree	3	8.3
Indifferent	10	27.8
Agree	7	19.4
Strongly agree	16	44.4
Total	**36**	**100.0**

The study found that 8.3% of the respondents disagreed that the banks use value at risk to assess interest rate risk, 27.8% were indifferent, 19.4% agreed while 44.4% strongly agreed. The results indicate that most of the banks use value at risk (VaR) to assess interest rate risk. These results are summarised and presented in Table 4.15.

Table 4.16: Interest rate risk management practices

Statement	Mean score	Std. Dev
The bank performs maturity gap analysis	4.33	0.83
The bank performs duration gap analysis	4.19	0.86
The bank uses Value at risk to assess interest rate risk	4.00	1.04
The bank uses simulation to assess interest rate risk	3.69	0.89

The results in Table 4.16 indicate that the tool that was mostly used for interest rate risk management was maturity gap analysis (4.33) while the least used method was simulation (3.69).

4.2.4 Foreign exchange risk management practices

The results in this section show the responses on foreign exchange risk management practices adopted by commercial banks in Kenya. The results are presented in tables and interpreted based on the percentages as well as the mean scores and standard deviations.

Table 4.17: Use of value at risk for foreign exchange risks

	Frequency	Percent
Disagree	3	8.3
Indifferent	13	36.1
Agree	3	8.3
Strongly agree	17	47.2
Total	**36**	**100.0**

The study found that 8.3% of the respondents agreed that the banks use VaR approach to analyse foreign exchange risks, 36.1% were indifferent, 8.3% agreed while 47.2% strongly agreed. The results show that the respondents were in agreement that majority of the banks use VaR approach to analyse foreign exchange risks. These results are summarised and presented in Table 4.17.

Table 4.18: Use of stop-loss limits

	Frequency	Percent
Disagree	1	2.8
Indifferent	7	19.4
Agree	10	27.8
Strongly agree	18	50.0
Total	**36**	**100.0**

The study found that 2.8% of the respondents disagreed that the banks employed stop-loss limits to manage foreign exchange, 19.4% were indifferent, 27.8% agreed while 50% strongly agreed. These results are summarised and presented in Table 4.18.

Table 4.19: Use of daylight limits

	Frequency	Percent
Indifferent	5	13.9
Agree	12	33.3
Strongly agree	19	52.8
Total	**36**	**100.0**

The study found that 13.9% of the respondents were indifferent on whether the banks employed daylight limits to manage foreign exchange risks. Further, 33.3% agreed and 52.8% strongly agreed. These results are summarised and presented in Table 4.19.

Table 4.20: Use of overnight limits

	Frequency	Percent
Indifferent	5	13.9
Agree	11	30.6
Strongly agree	20	55.6
Total	**36**	**100.0**

The study found that 13.9% of the respondents were indifferent on whether the banks employed overnight limits to manage foreign exchange risks, 30.6% agreed and 55.6% strongly agreed. These results are summarised and presented in Table 4.20.

Table 4.21: Use of individual gap limits

	Frequency	Percent
Disagree	2	5.6
Indifferent	11	30.6
Agree	7	19.4
Strongly agree	16	44.4
Total	**36**	**100.0**

The study found that 5.6% of the respondents disagreed that the banks employed individual gap limited to manage foreign exchange risk, 30.6% were indifferent, 19.4% agreed while 44.4% strongly agreed. These results are summarised and presented in Table 4.21.

Table 4.22: Use of aggregate gap limits

	Frequency	Percent
Disagree	1	2.8
Indifferent	6	16.7
Agree	13	36.1
Strongly agree	16	44.4
Total	**36**	**100.0**

The study found that 2.8% disagreed that the banks employed aggregate gap limits to manage foreign exchange risks, 16.7% were indifferent 36.1% agreed while 44.4% strongly agreed. These results are summarised and presented in Table 4.22.

The mean scores in Table 4.23 revealed that the most method used to manage foreign exchange risks was overnight limits (4.42) followed by daylight limits (4.39) and stop-loss limits (4.25). The least method used was value at risk (VaR) approach (3.94).

Table 4.23: Foreign exchange risk management practices

Statement	Mean score	Std. dev
The bank employs overnight limits to manage foreign exchange risks	4.42	0.73
The bank employs daylight limits to manage foreign exchange risks	4.39	0.73
The bank employs stop-loss limits to manage foreign exchange risks	4.25	0.87
The bank employs aggregate gap limits to manage foreign exchange risks	4.22	0.83
The bank employs individual gap limits to manage foreign exchange risks	4.03	0.99
The bank uses VaR approach to analyze forex risks	3.94	1.09

4.2.5 Effectiveness of Risk Management Practices

The results in this section show the responses on the effectiveness of risk management practices adopted by commercial banks in Kenya. The results are presented in tables and interpreted based on the percentages as well as the mean scores and standard deviations.

Table 4.24: Regular review of performance

	Frequency	Percent
Indifferent	1	2.8
Agree	7	19.4
Strongly agree	28	77.8
Total	**36**	**100.0**

The study revealed that 2.8% of the respondents were indifferent on whether the bank executives regularly reviewed the organisations performance in managing their business

risks, 19.4% agreed and 77.8% strongly agreed. These results are summarised and presented in Table 4.24.

Table 4.25: Effective continuous review and feedback on risk management

	Frequency	Percent
Indifferent	2	5.6
Agree	9	25.0
Strongly agree	25	69.4
Total	**36**	**100.0**

The study found that 5.6% of the respondents were indifferent on whether the banks had highly effective continuous review/feedback on risk management strategies and performance. Further, 25% agreed and 69.4% strongly agreed. These results are summarised and presented in Table 4.25.

Table 4.26: Documentation

	Frequency	Percent
Agree	12	33.3
Strongly agree	24	66.7
Total	**36**	**100.0**

The study found that 33.3% of the respondents agreed that the banks' risk management procedures and processes were documented and provided guidance to staff about managing risks. Further, 66.7% of the respondents strongly agreed. These results are summarised and presented in Table 4.26.

Table 4.27: Training policy

	Frequency	Percent
Disagree	1	2.8
Indifferent	4	11.1
Agree	13	36.1
Strongly agree	18	50.0
Total	**36**	**100.0**

The study found that 2.8% of the respondents disagreed that the banks' policies encourage training programs in the area if risk management, 11.1% were indifferent, 36.1% agreed while 50% strongly agreed. These results are summarised and presented in Table 4.27.

Table 4.28: Efficient risk management as company objective

	Frequency	Percent
Agree	9	25.0
Strongly agree	27	75.0
Total	**36**	**100.0**

It was noted that 25% of the respondents agreed that one of the banks' objectives was efficient risk management and 75% of the respondents strongly agreed. These results are summarised and presented in Table 4.28.

Table 4.29: Concentration of funds

	Frequency	Percent
Indifferent	2	5.6
Agree	4	11.1
Strongly agree	30	83.3
Total	**36**	**100.0**

The study revealed that 5.6% of the respondents were indifferent on whether it was too dangerous to concentrate banks' funds in one specific sector of the economy. Further, 11.1%

agreed and 83.3% strongly agreed. These results are summarised and presented in Table 4.29.

Table 4.30: Application of Basel Capital Accord

	Frequency	Percent
Indifferent	1	2.8
Agree	14	38.9
Strongly agree	21	58.3
Total	**36**	**100.0**

The study found that 38.9% of the respondents agreed that the application of Basel capital accord would improve the efficiency of risk management. Further, 58.3% strongly agreed while 2,8% were indifferent. These results are summarised and presented in Table 4.30.

Table 4.31: Adequacy of bank capital

	Frequency	Percent
Indifferent	4	11.1
Agree	23	63.9
Strongly agree	9	25.0
Total	**36**	**100.0**

The study noted that 11.1% of the respondents were indifferent on whether the banks' capital was adequate if the ration of capital to total risk-weighted assets was equal to eight percent. It was also noted that 63.9% agreed with the stated and a further 25% strongly agreed with it. These results are summarised and presented in Table 4.31.

Table 4.32: Recruitment of qualified staff

	Frequency	Percent
Indifferent	2	5.6
Agree	16	44.4
Strongly agree	18	50.0
Total	**36**	**100.0**

The study found that 44.4% of the respondents agreed that their banks emphasize the recruitment of highly qualifies people in risk management, 50% strongly agreed and 5.6% were indifferent. These results are summarised and presented in Table 4.32.

Table 4.33: Excellence of risk management practices

	Frequency	Percent
Indifferent	3	8.3
Agree	18	50.0
Strongly agree	15	41.7
Total	**36**	**100.0**

The study found that 50% of the respondents agreed that the level of risk management practices of their banks was excellent, 41.7% strongly agreed while 8.3% were indifferent. These results are summarised and presented in Table 4.33.

Table 4.34: Efficiency of risk management practices

	Mean score	Std. dev
It is too dangerous to concentrate bank's funds in one specific sector of the economy	4.77	0.54
The Bank's executive management regularly reviews the organization's performance in managing its business risks	4.75	0.50
Efficient risk management is one of the bank's objectives	4.75	0.44
The Bank's risk management procedures and processes are documented and provide guidance to staff about managing risks	4.67	0.48
Your Bank has highly effective continuous review/feedback on risk management strategies and performance	4.64	0.59
The application of Basel capital Accord by your bank would improve the efficiency of risk management	4.56	0.56
This Bank emphasizes the recruitment of highly qualified people in risk management	4.44	0.61
Your Bank's policy encourages training programs in the area of risk management	4.33	0.79
Overall, I consider the level of risk management practices of this Bank to be excellent	4.33	0.63
Bank's capital is adequate if the ratio of capital to total risk-weighted assets is equal to 8 percent	4.14	0.59

The results in Table 4.34 suggest that most of the respondents were in agreement that the risk management practices in the banking industry were efficient as the mean scores were above 3.0. Furthermore, risk management practices were cited as excellent (4.33) by majority of the respondents.

4.3 Risk Management Practices and Performance

4.3.1 Credit risk management practices and performance

The regression analysis was performed with performance as the dependent variable and credit risk management practices as the independent variable. The results in Table 4.35 show that R was 0.779. This indicates that there was a very high positive correlation between credit risk management practices and performance. The R^2 of 0.607 indicates that credit risk management practices influenced 60.7% of the variances in performance of commercial banks. Further, the adjusted R^2 of 0.563 indicates that credit risk management practices influenced 56.3% of the variances in bank performance. The standard error of estimate was low at 0.01475.

Table 4.35: Credit risk management practices and performance

R	R Square	Adjusted R Square	Std. Error of the Estimate
.779	.607	.563	.01475

The analysis of variance (ANOVA) results are shown in Table 4.36. The results indicate that F statistic was 13.892 and was significant (Sig. = 0.005). Thus, the regression model did a good job in explaining the relationship between credit risk management practices and performance.

Table 4.36: ANOVA for credit risk management practices and performance

		Sum of Squares	df	Mean Square	F	Sig.
	Regression	.003	1	.003	13.892	.005
	Residual	.002	35	.000		
	Total	.005	36			

Table 4.37 shows the results of the coefficients of the independent variable in the model as well as the constants in the model. As shown, the results indicate that credit risk management practices had a positive influence on performance (0.046).

Table 4.37: Coefficients for credit risk management practices and performance

	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
Constant	-.165	.052		-3.176	.011
Credit risk management practices	.046	.012	.779	3.727	.005

4.3.2 Liquidity risk management practices and performance

The regression analysis was performed with performance as the dependent variable and liquidity risk management practices as the independent variable. The results in Table 4.38 show that R was 0.205. This indicates that there was a low positive correlation between liquidity risk management practices and performance. The R^2 of 0.042 indicates that liquidity risk management practices influenced 4.2% of the variances in performance of commercial banks. The standard error of estimate was low at 0.02303.

Table 4.38: Liquidity risk management practices and performance

R	R Square	Adjusted R Square	Std. Error of the Estimate
.205	.042	-.064	.02303

The analysis of variance (ANOVA) results are shown in Table 4.39. The results indicate that F statistic was 0.395 and was insignificant (Sig. = 0.545). Thus, the regression model did not do a good job in explaining the relationship between liquidity risk management practices and performance.

Table 4.39: ANOVA for liquidity risk management practices and performance

		Sum of Squares	df	Mean Square	F	Sig.
	Regression	.000	1	.000	.395	.545
	Residual	.005	35	.001		
	Total	.005	36			

Table 4.40 shows the results of the coefficients of the independent variable in the model as well as the constants in the model. As shown, the results indicate that liquidity risk management practices had a positive influence on performance (0.011).

Table 4.40: Coefficients for liquidity risk management practices and performance

	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
Constant	-.018	.073		-.241	.815
Liquidity risk management practices	.011	.017	.205	.628	.545

4.3.3 Interest rate risk management practices and performance

The regression analysis was performed with performance as the dependent variable and interest rate risk management practices as the independent variable. The results in Table 4.41 show that R was 0.610. This indicates that there was a high positive correlation between interest rate risk management practices and performance. The R^2 of 0.372 indicates that interest rate risk management practices influenced 37.2% of the variances in performance of commercial banks. The adjusted R square of 0.303 shows that interest rate risk management practices influenced 30.3% of the variance in performance. The standard error of estimate was low at 0.01864.

Table 4.41: Interest rate risk management practices and performance

R	R Square	Adjusted R Square	Std. Error of the Estimate
.610	.372	.303	.01864

The analysis of variance (ANOVA) results are shown in Table 4.42. The results indicate that F statistic was 5.342 and was significant (Sig. = 0.046). Thus, the regression model did a good job in explaining the relationship between interest rate risk management practices and performance.

Table 4.42: ANOVA for interest rate risk management practices and performance

		Sum of Squares	df	Mean Square	F	Sig.
	Regression	.002	1	.002	5.342	.046
	Residual	.003	35	.000		
	Total	.005	36			

Table 4.43 shows the results of the coefficients of the independent variable in the model as well as the constants in the model. As shown, the results indicate that interest rate risk management practices had a positive influence on performance (0.024).

Table 4.43: Coefficients for interest risk management practices and performance

	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
Constant	-.068	.042		-1.623	.139
Interest rate risk management practices	.024	.010	.610	2.311	.046

4.3.4 Foreign exchange risk management practices and performance

The regression analysis was performed with performance as the dependent variable and foreign exchange risk management practices as the independent variable. The results in Table

4.44 show that R was 0.902. This indicates that there was a high positive correlation between foreign exchange risk management practices and performance. The R^2 of 0.813 indicates that foreign exchange risk management practices influenced 81.2% of the variances in performance of commercial banks. The adjusted R square of 0.792 shows that foreign exchange risk management practices influenced 79.2% of the variance in performance. The standard error of estimate was low at 0.01017.

Table 4.44: Foreign exchange risk management practices and performance

R	R Square	Adjusted R Square	Std. Error of the Estimate
.902	.813	.792	.01017

The analysis of variance (ANOVA) results are shown in Table 4.45. The results indicate that F statistic was 39.168 and was significant (Sig. = 0.000). Thus, the regression model did a good job in explaining the relationship between foreign exchange risk management practices and performance.

Table 4.45: ANOVA for foreign exchange risk management practices

		Sum of Squares	df	Mean Square	F	Sig.
	Regression	.004	1	.004	39.168	.000
	Residual	.001	35	.000		
	Total	.005	36			

Table 4.46 shows the results of the coefficients of the independent variable in the model as well as the constants in the model. As shown, the results indicate that foreign exchange risk management practices had a positive influence on performance (0.031).

Table 4.46: Coefficients for foreign exchange risk management practices

	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	-.097	.020		-4.805	.001
Foreign exchange risk management	.031	.005	.902	6.258	.000

4.4 Discussion

The results in this study mirror closely to the findings of previous studies. For instance, the findings on liquidity risk confirm those by Wetmore (2004) who noted that they had positive influence on performance. The results on foreign exchange risk are in consonance with those of Wang and Sheng-Yung (2004) on the significant influence of such risks on firm performance. In general, the results are the same as those of Madanoglu (2005) who focused on the restaurant industry.

CHAPTER FIVE: SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

5.1 Introduction

This chapter presents the summary of research findings, conclusions of the study, recommendations for policy and practice as well as suggestions for future research.

5.2 Summary of Findings

The study found that credit risk management practices were practiced by majority of the banks as the overall score for this was 4.16. All the statements had mean scores above 3 indicating that these tools were used to manage credit risk on the banks. The most used tool was credit audit (4.58) followed by use of exposure ceilings (4.42) and credit portfolio management (4.42). The least used tool for managing credit risk was risk based scientific pricing where loans are linked to expected loss (3.12).

The study found that liquidity risk management practices were prevalent among the commercial banks as shown by the overall mean score of 4.22. The study revealed that the most tools used were asset liability management (4.78) and tracking of premature closure of deposits (4.44). The least used method was tracking the impact of pre-payment of loans. On interest rate risk management strategies, the study found that the overall mean score was 3.98 indicating that this was also prevalent among the banks surveyed. The results in indicate that the tool that was mostly used for interest rate risk management was maturity gap analysis (4.33) while the least used method was simulation (3.69).

Foreign exchange risk management practices had an overall mean score of 4.09 meaning that they were also used by most of the banks. The study revealed that the most method used to manage foreign exchange risks was overnight limits (4.42) followed by daylight limits (4.39) and stop-loss limits (4.25). The least method used was value at risk (VaR) approach (3.94). The study found that most banks rated their risk management practices as efficient as shown by the overall mean score of 4.52. Furthermore, risk management practices were cited as excellent (4.33) by majority of the respondents.

The regression analysis revealed that there was a very high significant positive correlation between credit risk management practices and performance (R = 0.779, Sig. = 0.002). The R^2 of 0.607 indicates that credit risk management practices influenced 60.7% of the variances in performance of commercial banks. Further, the adjusted R^2 of 0.563 indicates that credit risk management practices influenced 56.3% of the variances in bank performance.

The results also indicate that liquidity risk management practices had an insignificant positive influence on performance (R = 0.205, Sig = 0.545). The R^2 of 0.042 indicates that liquidity risk management practices influenced 4.2% of the variances in performance of commercial banks.

The results also show that interest rate risk management practices had a significant positive influence on performance (R = 0.610, Sig = 0.046). The R^2 of 0.372 indicates that interest rate risk management practices influenced 37.2% of the variances in performance of

commercial banks. Further, the adjusted R^2 of 0.303 indicates that interest rate risk management practices influenced 30.3% of the variances in bank performance.

The study also revealed that foreign exchange risk management practices had a significant positive influence on performance (R = 0.902, Sig = 0.000). The R^2 of 0.813 indicates that foreign exchange risk management practices influenced 81.3% of the variances in performance of commercial banks. Further, the adjusted R^2 of 0.792 indicates that foreign exchange risk management practices influenced 79.2% of the variances in bank performance.

5.3 Conclusions

The study found that credit risk management practices had a positive influence on performance. The study also found that most banks practiced credit risk management. The study therefore concludes that the practice of good credit risk management strategies lead to better company performance. Further, lack of credit risk management practices may have a negative impact on performance of companies due to losses that may accrue.

The study found that foreign exchange risk management practices had a positive influence on performance. The mean scores also revealed that most banks practiced foreign exchange risk management and this had a significant influence on performance. The study concludes that banks that put in place better mechanisms to manage foreign exchange risks usually realise better performances than those who do not.

The study found that liquidity risk management practices had a positive influence on performance. This impact was insignificant. The study concludes that given that most banks

practice liquidity risk management, it may not significantly influence on their overall performance.

The study found that interest rate risk management practices had positive correlation with performance. This relationship was significant. As most banks practiced interest rate risk management, the study concludes that interest rate risk management practices translates to a positive impact on firm performance.

5.4 Recommendations for Policy and Practice

The study recommends that banks need to increase their credit risk management practices as this would have far reaching effects as far as better performance is concerned. Thus, company should use more of exposure ceilings, credit reviews, risk rating models, risk base scientific pricing, portfolio management and loan reviews.

The study also recommends that foreign exchange risk management practices need to be practiced more by the commercial banks as they may have a profound positive effect on their performance.

The study also recommends that banks need to take more care in terms of liquidity risk management practices. This is because overemphasis on some of the liquidity risk management practices may have a negative effect on firm performance that more care needs to be put in place when designing such risk management practices.

The study also recommends that the banks need to be careful when designing strategies to mitigate interest rate risks. This is because poor designs may have a negative influence on bank performance.

5.5 Limitations of the Study

There were a number of limitations that affected the outcome of the study. For instance, data was collected from only commercial banks in Nairobi. This may limit the applicability of the findings to the entire financial sector such as the MFIs, Investment banks or the insurance firms.

The other limitation was time factor as it was not possible to cover all the banks within the time given to carry out the research. These issues may limit the applicability of the research findings to the entire industry.

Financial resources were another limitation. The research demanded a lot of printing, bindings, typesetting, and data collection. All these activities needed money and this was a challenge to the researcher.

5.6 Suggestions for Further Research

The study recommends that there is need to undertake another study on risk management practices especially on other industries such as insurance or for the listed firms on the Nairobi Stock Exchange to establish whether the same results found in this study would hold.

The study recommends that future studies should perform a longitudinal analysis in order to capture the trend of risk management practices over time in the industry.

In order to observe statistically significant correlations, future studies should be focused on introducing control variables in the regression models. This may enhance the significance of relationships.

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APPENDICES

Appendix 1: Letter of Introduction

RE: REQUEST TO COLLECT DATA FOR MBA RESEARCH PROJECT

I am a student at the University of Nairobi pursuing a Masters of Business Administration program. Pursuant to the pre-requisite course work, I am conducting a research project on Enterprise Risk Management Practices and Strategies Adopted by Commercial Banks in Kenya. Your organisation has therefore been selected for the study.

I am kindly requesting you to take time and fill in the questionnaire. Your responses will be useful in fulfilling the objectives of this study. The information that will be provided will be used for academic purpose only. Your assistance is highly valued. Thank you in advance.

Yours faithfully,

…… ……

Mami Wambua John Yabs

MBA Student Supervisor

Appendix 2: The Research Questionnaire

Part 1: Credit Risk Management Practices

1. Rate the extent to which you agree with the statements on credit risk management practices used by the bank.

Key:
5 Strongly agree
4 Agree
3 Indifferent
2 Disagree
1 Strongly disagree

	Statement	**5**	**4**	**3**	**2**	**1**
1	The organization uses exposure ceilings to management credit risk					
2	The organization reviews the credit history of each client and renews them on timely basis					
3	The organization uses a risk rating model using a comprehensive risk scoring system					
4	The organization uses a risk based scientific pricing where loans are linked to expected loss					
5	The organization uses a credit portfolio management to optimize the benefits of diversification and reduce adverse impacts of concentration					
6	The organization performs a credit audit or a loan review mechanism					

Part 2: Liquidity Risk Management Practices

2. Rate the extent to which you agree with the statements on liquidity risk management practices in the organization.

Key:
5 Strongly agree
4 Agree
3 Indifferent
2 Disagree
1 Strongly disagree

	Statement	**5**	**4**	**3**	**2**	**1**
1	The organization carries out an Asset Liability Management					
2	Tolerance levels on mismatches are fixed for various maturities					
3	The organization tracks the impact of pre-payment of loans					
4	The organization tracks premature closure of deposits					

Part 3: Interest rate risk management strategies

3. Rate the extent to which you agree with the statements on interest rate risk management practices in the organization.

Key:
5 Strongly agree
4 Agree
3 Indifferent
2 Disagree
1 Strongly disagree

	Statement	**5**	**4**	**3**	**2**	**1**
1	The organization performs maturity gap analysis					
2	The organization performs duration gap analysis					
3	The organization uses simulation to assess interest rate risk					
4	The organization uses Value at risk to assess interest rate risk					

Part 4: Foreign exchange risk management practices

4. Rate the extent to which you agree with the statements on foreign exchange risk management practices in the organization.

Key:
5 Strongly agree
4 Agree
3 Indifferent
2 Disagree
1 Strongly disagree

	Statement	**5**	**4**	**3**	**2**	**1**
1	The organization uses VaR approach to analyze forex risks					
2	The organization employs stop-loss limits to manage foreign exchange risks					
3	The organization employs daylight limits to manage foreign exchange risks					
4	The organization employs overnight limits to manage foreign exchange risks					
5	The organization employs individual gap limits to manage foreign exchange risks					
6	The organization employs aggregate gap limits to manage foreign exchange risks					

Part 5: Effectiveness of Risk Management Practices

5. Rate the extent to which you agree with the statements on the effectiveness of risk management practices in the organization.

Key:
5 Strongly agree
4 Agree
3 Indifferent
2 Disagree
1 Strongly disagree

	Statement	5	4	3	2	1
1	The Organization's executive management regularly reviews the organization's performance in managing its business risks					
2	Your Organization has highly effective continuous review/feedback on risk management strategies and performance					
3	The Organization's risk management procedures and processes are documented and provide guidance to staff about managing risks					
4	Your Organization's policy encourages training programs in the area of risk management					
5	This Organization emphasizes the recruitment of highly qualified people in risk management					
6	Efficient risk management is one of the organization's objectives					
7	It is too dangerous to concentrate organization's funds in one specific sector of the economy					
8	The application of Basel capital Accord by your organization would improve the efficiency of risk management					
9	Organization's capital is adequate if the ratio of capital to total risk-weighted assets is equal to 8 percent					
10	Overall, I consider the level of risk management practices of this Organization to be excellent					

End of questionnaire

Thank you for your cooperation

Appendix 3: List of Commercial Banks

Tier I Banks

1. Kenya Commercial Bank Ltd
2. Barclays Bank of Kenya Ltd
3. Standard Chartered Bank Ltd
4. Cooperative Bank of Kenya Ltd
5. CFC Stanbic Bank Ltd
6. Equity Bank Ltd
7. Commercial Bank of Africa Ltd
8. National Bank of Kenya Ltd
9. Citibank NA
10. Diamond Trust Bank Ltd
11. NIC Bank Ltd
12. I&M Bank Ltd
13. Prime Bank Ltd
14. Bank of Baroda Ltd
15. Savings and Loan Ltd
16. Housing Finance Company of Kenya Ltd
17. Bank of Africa Ltd
18. Bank of India
19. Imperial Bank Ltd

Tier II Banks

20. Ecobank Ltd
21. Family Bank Ltd
22. Chase Bank Ltd
23. Fina Bank Ltd
24. African Banking Corporation Ltd
25. Development Bank of Kenya Ltd
26. Gulf African Bank Ltd
27. Habib AG Zurich

28. K-Rep Bank Ltd
29. Giro Bank Ltd
30. Consolidated Bank of Kenya Ltd
31. Guardian Bank Ltd
32. Fidelity Commercial Bank Ltd
33. Victoria Commercial Bank Ltd

Tier III Banks

34. Habib Bank Limited.
35. Southern Credit Banking Corporation Ltd
36. Equatorial Commercial Bank Ltd
37. First Community Bank Ltd
38. Credit Bank Ltd
39. Trans-National Bank Ltd
40. Middle East Bank Ltd
41. Paramount Universal Bank Ltd
42. Oriental Commercial Bank Ltd
43. Dubai Bank Ltd
44. UBA Kenya Bank Ltd
45. City Finance Bank Ltd