

**THE IMPACT OF ENTERPRISE RISK MANAGEMENT ON THE VALUE OF
FIRMS LISTED AT NAIROBI SECURITIES EXCHANGE**

BY

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DECLARATION

I declare that this is my own original work and to the best of my knowledge it has not been submitted for a degree award in any other University or institution of higher learning.

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This research project has been submitted for examination with my approval as University Supervisor

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DEDICATION

This project is lovingly dedicated to my late wife Batul, without whose support, love and behind the scenes effort I would not have been able to start and finish this work.

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ABSTRACT

Risk management is seen as a method for handling the risks which an organization or individual is exposed to. Its main objectives are to protect the organization from severe financial disruption due to accidental losses, and do this at an affordable and none fluctuating cost. Companies face two risk categories: financial and non-financial risk. Based on the modern portfolio theory from Markowitz (1952), risk management is not valuable to shareholders. This is because shareholders can easily diversify their own risk, and therefore only the systematic risk is important. This study endeavored to ascertain the impact of Enterprise Risk Management implementation on the value of the firm. The study sought to answer the following research question what is the impact of Enterprise Risk Management implementation on the value of companies listed at Nairobi Securities Exchange.

The research design employed in this study was descriptive research design inform of a survey. The population of interest of this study comprised of 60 companies listed at the Nairobi Securities Exchange (NSE, 2012). The study sampled 55 respondents who were the respondent for this study. The study covered a period of 5 years from year 2007 to year 2011. Questionnaires were designed to investigate the impact of Enterprise Risk Management implementation on the value of companies listed at Nairobi Securities Exchange. Descriptive statistics such as means and standard deviation were also used to help in data analysis. A multivariate regression equation was used.

The study revealed that implementation of ERM lead to increase in the value of the company, thus companies listed in the NSE can add to their shareholders value by implementing ERM which will enable them have competitive advantage over companies that have not implemented ERM. Companies that have their primary focus on adding shareholder wealth should implement ERM as it does contribute to the company's market value. Therefore, an ERM level positive coefficient indicates that companies that implement ERM in the NSE are valued higher than those that have not implemented ERM.

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LIST OF ABBREVIATION

CAPM	Capital Asset Pricing Model
CDSC	Central Depository and Settlement Corporation
CMA	Capital Markets Authority
COSO	Commission of Committee of Sponsoring Organizations
CRO	Chief Risk Officer
ERM	Enterprise risk management
MPT	Modern Portfolio Theory
NIS	New Institutional Sociology
NSE	Nairobi Securities Exchange
OIE	Old Institutional Economics
ROA	Return On Assets
TCRP	Transit Cooperative Research Program

CHAPTER ONE

INTRODUCTION

1.1 Background of the Study

Risk management is seen as a method for handling the risks which an organization or individual is exposed to. Its main objectives are to protect the organization from severe financial disruption due to accidental losses, and do this at an affordable and none fluctuating cost (TCRP Synthesis 13, 1995). Enterprise risk management (ERM) can be considered as the third generation of risk management which moved away from the “silo” approach toward an approach taking a corporate-wide view. It can be defined as a process applied across an organization and designed to identify and manage all major risks faced by the firm, and to implement integrated strategies that help achieving the enterprise objectives and maximizing its value.

1.1.1 Enterprise Risk Management

According to the dictionary Van Dale, risk could be defined as ‘danger of damage or loss’. Lhabitant & Tinguely (2001) define risk as the exposure to uncertainty, where uncertainty is defined as the possibility of occurrence of one or several events. This definition could be broadened by Kaplan & Garrick (1981), who argue that risk is not only uncertainty, but that the consequences this uncertainty could have, should also be taken into account. Although these consequences could also be beneficial, it is more important for companies to take the possible negative outcomes into account. When these uncertainties become reality, the outcomes could harm the company.

In general, companies face two risk categories: financial and non-financial risk (Ai & Brockett, 2008). First, the financial risks are discussed, followed by a description of non-financial risk. According to McNeil, Frey & Embrechts (2005), market risk and credit risk are the most common financial risks at banks. Market risk is ‘the risk of change in the value of a financial position due to a change in the value of the underlying components of which that position depends’ (McNeil *et al.*, 2005, p. 3), like for example commodity prices and interest rates. Further, credit risk is ‘the risk of not receiving the promised repayments on outstanding investments, because of default of the borrower’ (McNeil *et al.*, 2005, p. 3). Another financial risk at banks is liquidity risk, which is caused by a lack of marketability of an investment, in order to prevent or minimize a loss. In general, these risks are managed using financial instruments, like derivatives.

Non-financial risk could also be further separated into hazard risk, operational risk and strategic risk (Ai & Brockett, 2008). Hazard risks are external risks, like for example natural disasters, theft and liability claims. These risks could best be managed by buying insurances. Operational risks are caused by failing of internal processes, people and systems. Strategic risks are directly related to the bank’s overall strategy and include among others reputation risk. These risks are difficult to insure or hedge, and should be minimized using qualitative information.

In order to prevent these risks to give negative outcomes, companies engage into risk management. The general purpose of risk management is to reduce the volatility of firm value (Nance, Smith, & Smithson, 1993) and to eliminate the lower-tail outcomes (Stulz,

1996). This means that it should reduce the expected costs of financial distress, but it should still enable companies to gain a competitive advantage in risk-bearing.

1.1.2 Enterprise Risk Management and Value of the Firm

Traditional risk management consists of insurance and hedging every risk class. However, this leads to inefficiencies, because sometimes, risks could be double counted and thus double insured or hedged. To that problem, enterprise risk management (ERM) offers a solution. This approach handles risk in a holistic approach, which can create natural hedges. Natural hedges exist when a company invests in two different financial instruments, whose performance tends to cancel each other out. Further, it leads to a better understanding of risk, which enhances growth opportunities. This better risk insight enhances growth opportunities by risk responses that are better aligned with the corporate strategy (Abrams, von Känel, Müller, Pfitzmann, & Ruschka-Taylor, 2007), which could lead to better performance and value of the firm.

This holistic approach was developed into a framework, the COSO1 integrated framework for risk management (2004). This framework has been adopted by companies throughout the world. According to COSO, enterprise risk management could best be defined by ‘a process, effected by an entity’s board of directors, management and other personnel, applied in strategy setting across the enterprise, designed to identify potential events that may affect the entity, and manage risk to be within its risk appetite, to provide reasonable assurance regarding the achievement of entity objectives’ (p. 2). The purpose

of risk management in general is to effectively deal with uncertainty and enhance the capacity to build value for stakeholders (COSO, 2004).

There are several researches that try to find a relationship between the adoption and implementation of ERM and firm performance and value (Baxter, Bedard, Hoitash & Yezegel, 2011). Another part of research focuses on risk management-related corporate governance mechanisms and board characteristics, and the effects on performance during a financial crisis (Aebi, Sabato & Schmid, 2011).

ERM should not only deliver value to shareholders, it should also deliver value and performance in general to other stakeholders. Aebi *et al.* (2011), Beltratti & Stulz (2010) and Minton *et al.*, (2010) focus on the effect of risk management structure, when measuring the effect on companies performance. Beltratti & Stulz (2010) focus on excessive risk taking and share-holder friendliness of the company's board. They did not find any significant results. Minton *et al.* (2010) focus on board independence and financial expertise, since these factors are usually mentioned when improvements of risk regulations are discussed. It is argued that independent board members are less likely to engage in excessive risk taking, since they do not have incentives to do so. Minton *et al.* (2010) find that board independence does not influence stock performance during the crisis. Board independence was also measured by Aebi *et al.* (2011), and they find a significant negative association with performance, which is different from Minton *et al.* (2010). Minton *et al.* (2010) found a significant negative association between financial

expertise and firm value, which suggests that financial experts tend to take more risk which leads to lower firm value.

1.1.3 The Nairobi Securities Exchange

Established in 1954, the Nairobi Securities Exchange NSE (2011) was as a voluntary association of stock brokers with the objective to facilitate mobilization of resources to provide long term capital for financing investments. Through stringent listing requirements the market promotes higher standards of accounting, resource management and transparency in the management of business. The Nairobi Securities Exchange deals in both variable income securities and fixed income securities. Variable income securities are the ordinary shares, which have no fixed rate of dividend payable, as the dividend is dependent upon both the profitability of the company and what the board of directors decides. The fixed income securities include Treasury and Corporate Bonds, preference shares, debenture stocks - these have a fixed rate of interest/dividend, which is not dependent on profitability NSE (2007).

The NSE is regulated by Capital Markets Authority CMA (2011) which provides surveillance for regulatory compliance. The exchange has continuously lobbied the government to create conducive policy framework to facilitate growth of the economy and the private sector to enhance growth of the stock Ngugi and Njiru (2005). The NSE is also supported by the Central Depository and Settlement Corporation (CDSC) which provides clearing, delivery and settlement services for securities traded at the Exchange. It oversees the conduct of Central Depository Agents comprised of stockbrokers and

investments banks which are members of NSE and Custodians CDSC (2004). These regulatory frameworks are aimed to sustain a robust securities market.

1.2 Statement of the Problem

Since the last financial crisis, there is more pressure for regulation towards risk management at financial companies, in order to decrease the consequences of a future crisis. However, there is still no clear consensus about whether the implementation of ERM leads to better performance. In other words, it is not proven that more regulations on risk management are effective in helping organization survive a financial crisis. Therefore, research is needed to address the relationship between ERM implementation and firm value.

Based on the modern portfolio theory from Markowitz (1952), risk management is not valuable for shareholders. This is because shareholders can easily diversify their own risk, and therefore only the systematic risk is important. In that case, every risk management practice is a negative net present value project and should not be undertaken. Beasley *et al.* (2008) empirically investigated this argument. They related ERM implementation and share prices during the announcement period for both financial and non-financial firms. ERM implementation is measured as the appointment of a Chief Risk Officer (CRO), and the market reaction to it as the accumulative abnormal return. The authors only find an insignificant negative relation between the accumulative abnormal returns and the appointment of a CRO. However, there are findings that suggest that ERM implementation enhances firm performance of financial companies in general.

An example is the paper by Liebenberg & Hoyt (2011), who investigate the relation between ERM adoption and firm value at insurance companies. These authors also use CRO appointment as indicator for ERM implementation, but use firm value as dependent variable. This indicates that ERM does enhance firm value in general.

Locally studies done on risk management includes; Odipo (2000) who did an empirical study on accounting determined measures of systematic risk at NSE, Sang (2001) who did a study on a computer security risk analysis of firms quoted in the Nairobi Stock Exchange, Kibara (2007) who did a survey of internal auditors risk management practices in the banking industry in Kenya and Weru (2010) who did a study on an assessment of information systems risk management practices: a case of practical action (international). This study will endeavor to ascertain the impact of Enterprise Risk Management implementation on the value of the firm. The study sought to answer the following research question what is the effect of Enterprise Risk Management implementation on the value of companies listed at Nairobi Securities Exchange.

1.3 Objective of the Study

The objective of the study was to investigate the impact of enterprise risk management on the value of companies listed at Nairobi Securities Exchange.

1.4 Value of the Study

Management of firms listed at the NSE: The study will be invaluable to management of firm listed at the NSE in that it will provide an insight into effects of ERM implementation on the value of the firm.

This finding is important in motivating corporate executives to make a deeper commitment to implementation of ERM so as to return more value to their shareholders. Furthermore this study provides some initial exploratory empirical evidence that highlights whether the implementation of ERM has a value addition effect on companies or not and assesses several factors associated with the organization's extent of ERM implementation and their significance to that implementation.

The findings of this study suggest that companies that have their primary focus on adding shareholder wealth should implement ERM as it does contribute to the company's market value. Therefore, an ERM level positive coefficient indicates that companies that implement ERM in the NSE are valued higher than those that have not implemented ERM.

The findings will be of great importance to regulatory authorities like Capital Market Authority as it will inform them on how enterprise risk management implementation affects the value of companies listed at Nairobi Securities Exchange. This will help in designing policies on how to implement ERM in firm listed at the NSE.

The study will assist the government through various regulatory agents to have a clear picture of the impacts of ERM implementation on the value of public companies listed in the NSE.

To the researchers and academicians: This study seeks to contribute to the literature by broadening the understanding of the concept of impact of enterprise Risk management and value of the firm literature.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

This section provides a review of the theoretical literature on firm financing. This study begins the theoretical principles underlying Enterprise Risk Management and then discusses the empirical literature on Enterprise Risk Management and firm value.

2.2 Theoretical Review

2.2.1 Institutional Theory

Burns and Scapens (2000) have observed that the social sciences have taken an increasing interest in institutional theory, and that the accounting literature reflects this interest in at least two ways: new institutional sociology (NIS); and old institutional economics (OIE). According to Burns (2000), analytical studies of changes in management-accounting routines are founded on OIE – which is a heterogeneous body of theory. Authors who can be considered within the paradigm of OIE include Karl Marx and Vilfredo Pareto. Others include various empiricists who were influenced by Darwinist biology and who were affiliated with the German school in the last quarter of the nineteenth century – such as Gustav Schmoller, Adolph Wagner, and Wilhelm Roscher (Santos, 2003). Given the difficulty of defining an “institutionalist author” with any precision, Santos (2003) decided to restrict the term to those authors about whom there is a relative consensus.

Fonseca and Machado da Silva (2002) have observed that, according to the institutional approach, individual behaviour is modelled by standards that are originally created and shared in interactions, but which later become incorporated in the form of objective standards and rules about the most efficient way of functioning. From the perspective of OIE, the institution becomes the main object of analysis. According to this view, rational and optimising behaviour no longer proceeds from individual decision-makers (as posited by neoclassical theory). Scapens (1994) emphasised the institutional approach and rejected the postulates of neoclassical theory as being appropriate to understanding management-accounting practices.

It is therefore important to conceptualise the institution; however, no simple and widely accepted definition of an “institution” exists. Burns and Scapens (2000, p. 8) defined an institution on the basis of Barley and Tolbert's (1997) work – “presuppositions that are shared and taken for granted, which identify categories of human agents and their appropriate activities and relations”. Scapens (1994) noted that, in the context of the OIE, the first definition of institution was established by Veblen in 1919 – “a habit of thought common to the generality of men”. According to Burns (2000), the idea of an institution that has been most frequently applied in OIE came from Hamilton (1932), who considered an institution to be a way of thinking or acting by something that prevails and continues, which is inserted into the habits of a group or the customs of a people. This definition emphasises the social and cultural character of an institution, and the importance of habitual behaviour. Rowsell and Berry (1993) utilised certain concepts of Selznick (1957), who defined an institution as a natural product of social needs and

pressures. The institution is a social system that gives meaning to the integrated aspirations of a group of people. Selznick (1957) contrasted an institution with an administrative organisation – describing the latter as a rational instrument defined to carry out a job.

The notions of “habits” and “institutions” are connected through the concept of “routine”. A “habit” is a predisposition or tendency to become involved in previously adopted or acquired forms of action. However, the existence of habits does not exclude the possibility of intentional individual behaviour; indeed, habits can be modified. In contrast to such habits, which are located in the personal sphere, “routines” involve a group of people (Oliver, 1997). Routines are formalized and institutionalized behaviours that are guided by rules. Such routines are reinforced by the process of repeating actions to comply with rules. Routines represent forms of thinking and acting that a group of individuals takes for granted.

Rules and routines provide an “organisational memory” and constitute the basis for the evolution of organisational behaviour. According to Scapens (1994), they are the organisational equivalents of genes in the biological process and, in this sense, evolution is not the creation of optimal behaviour, but merely the reproduction and possible adaptation of behaviours over time. Oliver (1997) has emphasised that, from the institutional perspective, companies operate within a social structure of standards, values, and presuppositions about appropriate or acceptable behaviour. The institutional

viewpoint thus suggests that motives for human behaviour go beyond economic optimisation to involve justification and social obligation.

In the present study, the concept of institutionalization is clearly important. Oliver (1997) has noted that institutional activities tend to be long-lasting, socially accepted, resistant to change, and not directly dependent on rewards or monitoring of their permanence. In the context of management accounting, Scapens (1994) has observed that, over time, management accounting can constitute a structure that reflects a particular organisation's way of thinking and acting – which is taken for granted and detached from its specific historical circumstances. It thus becomes an unquestioned way of doing things.

The theoretical framework that is developed in this research is based on Burns and Scapens' (2000) work. Their theory offers a general model of organizational change. Various possible approaches could be used in this study, but recent institutional theory versions provide important extra features. Researchers applied 'Old' institutional theory to accounting practices in order to clarify the stabilising role of information systems and the evolutionary change possibility (Burns and Scapens, 2000). In this regard, 'old' institutional theory is chosen to address the problem of this research as it is able to illustrate the accounting evolutionary nature which is broadly recognized in the accounting literature (Chenhall and Langfield Smith, 1998b). However, 'old' institutional theory mainly considers intra-organisational behaviours. The above limitation is overcome by the new institutional sociology theory, which is concerned with the role of macroeconomic, political and social institutions in determining organisational structures,

policies and procedures (Scott, 2001). Generally, organisations respond to this external, macro pressures to obtain support and legitimacy (Kholeif et al., 2008). Thus, new institutional sociology theory is selected to address extra-organisational institutions which affect the use and implementation of ERM. Commonly, coercive pressures play a key role in insurance companies (Kholeif et al., 2008), which are the context of this research. An institutional framework that incorporates OIE and NIS can help explaining how institutions at both macro- and micro-levels shape and constrain individuals' and organizations' behaviour and analyzing how individuals modify and transform the institutions and organizations. By taking such perspective, the analysis may provide a clearer picture of different organizational phenomena.

2.2.2 Modern Portfolio Theory

Modern Portfolio Theory (MPT) is a theory of investment which tries 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. Although MPT is widely used in practice in the financial industry and several of its creators won a Nobel Prize for the Theory, in recent years the basic assumptions of MPT have been widely challenged by fields such as behavioural economics (Sharpe, William 1964). In conventional portfolio theory one typically seeks to minimize portfolio variance for a given expected portfolio return (Elton and Gruber, 1995). The Centerpiece of this theory is the capital asset pricing model (CAPM) devised by Markowitz (1952). In spite of criticism and Ongoing concerns about its validity and testability, concepts in CAPM such as efficient frontier, security market lines, asset “betas” and so-on are still

considered relevant in the selection and management of portfolios of assets. The Key assumptions of (Markowitz, 1952) MPT theory are that asset returns are normally distributed and that investors face a risk-return trade-off. It is widely accepted that most asset returns are non-normally distributed and this can be seen in the extreme tail risks in the current crisis and the long term capital management crisis in 1998. Such events are not covered adequately by a normal distribution function. In the property industry, most portfolio optimization practises ignore the normality assumption of asset returns. To complicate matters further, the short time series of property returns data further compromises the stability of the estimated returns and covariance matrix. In portfolio literature such issues are referred to as estimation errors. Such deficiencies in the optimization methodology could provide statistically incorrect outputs, i.e. portfolio weights. The postulate of this paper is that it works around these shortcomings rather than ignoring them completely.

Another critical aspect of MPT that cannot evade recognition is that MPT models assets return as a normally distributed (or more generally as an elliptically distributed random variable), defines risk as the standard deviation of return, and models a portfolio as a weighted combination of the assets' returns. By combining different assets whose returns are not perfectly positively correlated, MPT seeks to reduce the total variance of the portfolio return. MPT also assumes that investors are rational and markets are efficient. MPT was developed in the 1950s through the early 1970s and was considered an important advance in the mathematical modeling of finance. Since then, many theoretical and practical criticisms have been levelled against it (Harrel and Kiefer, 1993).

2.2.3 Relationship Portfolio Concepts

The relationship portfolio concepts have been postulated by many management scientists. Fiocca (1982) explaining various factors associated with the customer buying behaviour and supplier relationships. He suggests a number of mechanisms for assessing the proposed axes: “Difficulty in managing the customer” is a function of the level of competition for the customer, customer buying behaviour and the characteristics of the product bought by the customer. The volume of purchases by the customer, customer market leadership and the ability of the supplier to fully adapt to the customer expectations and specifications. The strength of this relationship is then again measure by applying a mix of objective, judgemental or subjective factors that include: length of relationship; importance of the customer; friendship; co-operation in product development; and social distance.

A criticism of Fiocca Model put forward by Yorke and Droussiotis (1994) is that it does not recognize the importance of considering customer profitability. It simply assumes that different cells can be associated with different levels of profitability. Campbell and Cunningham (1983) proposed a three- step portfolio analysis strategy for marketing management. Using the case study of a major packaging supplier, they suggest a three-step analysis using two variables at each stage. The first step focuses on the nature and attractiveness of the customer relationship using customer life cycle stage on one axis and various data on the other.

2.2.4 Theory of Finance

The theory of finance is concerned with how individuals and firms allocate resources through time. In particular, it seeks to explain how solutions to the problems faced in allocating resources through time are facilitated by the existence of capital markets (which provide a means for individual economic agents to exchange resources to be available at different points in time) and of firms (which, by their production-investment decisions, provide a means for individuals to transform current resources physically into resources to be available in the future). Numerous economists have explained the role of finance in the market with the help of different finance theories. The concept of finance theory involves studying the various ways by which businesses and individuals raise money, as well as how money is allocated to projects while considering the risk factors associated with them. The theory argues that resources should be allocated to the lowest risk areas.

2.3 Enterprise Risk Management and Firm Value

Based on the modern portfolio theory from Markowitz (1952), risk management is not valuable for shareholders. This is because shareholders can easily diversify their own risk, and therefore only the systematic risk is important. In that case, every risk management practice is a negative net present value project and should not be undertaken. This argument is agreed by Aebi *et al.* (2010), who argue that risk management could lower the risk, but that this is paid for with lower returns for shareholders. Beasley *et al.* (2008) empirically investigated this argument. They related ERM implementation and share prices during the announcement period for both financial

and non-financial firms. ERM implementation is measured as the appointment of a Chief Risk Officer (CRO), and the market reaction to it as the accumulative abnormal return. The authors only find an insignificant negative relation between the accumulative abnormal returns and the appointment of a CRO. Therefore, it could be concluded that the implementation of ERM is not valued by shareholders, which supports the argument of the modern portfolio theory.

Pagach & Warr (2010) measured the impact of ERM implementation on different firm factors which are argued to be affected by ERM implementation. These factors are risk, financial, asset and market characteristics of the firm. It is argued that ERM implementation, measured as the appointment of a CRO, should lower the risk. For financial characteristics, leverage, cash availability and profitability are taken into account, whereas asset characteristics should tell something about the firm's assets are likely to be impaired in financial distress. Finally, equity markets should react on a firm's decrease in expected costs of financial distress, when it has implemented ERM. The authors found no significant relationship for these variables, which leads to the conclusion that ERM implementation has no influence on performance, for both non-financial and financial firms.

However, there are findings that suggest that ERM implementation enhances firm performance of financial companies in general. An example is the paper by Liebenberg & Hoyt (2011), who investigate the relation between ERM adoption and firm value at insurance companies. These authors also use CRO appointment as indicator for ERM

implementation, but use firm value as dependent variable. Firm value is measured as Tobin's Q. This measure defines value as the ratio between market and book value of equity and liabilities. Their results show that ERM significantly enhances firm value in general, however this effect is rather small. The authors also find a difference in Tobin's Q for firms that have implemented ERM and those who have not, and also this relationship is significant. This indicates that ERM does enhance firm value in general.

When using another measure for ERM implementation, namely the Standard & Poor's risk management rating, as was done by McShane, Nair & Rustambekov (2011), a more accurate answer could be given to the question whether ERM leads to better firm value for banks. The S&P's rating does not only indicate if ERM is adopted, but also to what extent. It could therefore be derived if more sophisticated ERM leads to even higher firm value. In this research, firm value is measured by Tobin's Q. The results show that ERM is significantly positively related to firm value, controlled for other factors. There is also a significant relationship between poor ERM quality and firm value. However, there is no significant relations between high ERM quality and firm value, which suggests that ERM is valued only up until a certain level of sophistication.

Baxter, Bedard, Hoitash & Yezegel (2011) further extend this relation by relating high quality ERM programs, firm performance and market reactions towards revisions of ERM quality by the rating agency. They find, contradicting to McShane *et al.* (2011) that high ERM program quality is positively associated with firm performance and value. For value, they also use Tobin's Q, whereas performance is measured by return on assets

(ROA). These authors also examine whether ERM quality ratings lead to market reactions. They measure market reactions as accumulative average abnormal returns, and only find partial support. This suggests that markets do value ERM quality, but that this is already incorporated in the share price. However, market reactions are positively associated with ERM quality rating revisions. It could be argued that the adoption of ERM is valuable for companies, since it enhances performance (Baxter *et al.*, 2011) and increases value (Liebenberg & Hoyt, 2011; McShane *et al.*, 2011). However, this depends on the quality of the ERM programs and it is suggested that ERM is only valuable up until a certain level (McShane *et al.*, 2011).

Recently there have been rapid advances in financial institutions' risk measurement and management capabilities. Sophisticated tools for measuring market risk (value at risk measurement tools), credit risk (expected and unexpected loss measurement tools) and insurance risk (dynamic financial analysis tools) have evolved and there have been advances in using such risk metrics to guide executive management in strategic decision-making. Typically, this is achieved through a framework that has two parts. First, risk is related to the capital amount which is required by the firm to achieve a sufficient protection level against adverse events. Second, risk is used to adjust the business activities returns in order to determine which activities are value-adding and which ones are value destroying (Siokis, 2001).

ERM is more than a comprehensive coverage of risk and consistency in risk management across the enterprise. It also comprises pricing of products, risk-adjusted performance

measurements, and alignment of performance and compensation to shareholder value creation as well as strategic management. Moreover, “it is an ideology of managing the firm in every respect and aligning it with value creation at each stage of decision making and goes well beyond risk measurement and management”. Thus, economic capital allocation is the heart of such new paradigm for financial institutions (Rao and Dev, 2006, p. 430). Recent findings from surveys on ERM indicated that ERM focuses on improving capital efficiency, supporting strategic decision-making and building investor confidence. ERM is also a valuable tool helping companies achieve their business objectives (Tillinghast-Towers Perrin, 2001; 2004). Capital is the most expensive and important input in production for insurance firms. They deploy capital by holding a large number of financial risk positions which need to be evaluated (Froot, 2003; Mumford et al., 2005).

Integrated risk and capital management is seen as a source of a competitive advantage in the insurance industry. A web-based survey, conducted by Tillinghast-Towers Perrin (2004) on risk and capital management issues, indicates that the principal objectives for ERM is seen by insurers as helping them create and improve shareholder value through better risk-based decision making and capital allocation. In addition, insurers’ business decisions are guided by enhanced risk and capital management approaches (Tillinghast-Towers Perrin, 2004). In addition, the 2010 ERM survey conducted by AON showed that advanced ERM practitioners report significant success in applying ERM strategies to board-level responsibilities. It is indicated that 57% of the companies surveyed use risk management for capital allocation. As the amount of capital to be allocated is finite,

organizations with more mature ERM programs are able to manage this process in a better way. However, organizations in the early stage of the process report that they do not use ERM in capital allocation (AON, 2010). Risk management matters to financial institutions as holding capital is costly and they face convex costs of raising external capital (Froot and Stein, 1998). Merton and Perold (1993) discussed the rationale for the capital allocation by financial institutions. Customer aversion to insolvency risk provided the motivation for capital allocation, which is similar to reasons mentioned by Froot (2005).

2.4 Empirical Review

There are several signals that show that companies are implementing ERM. Earlier research on ERM and firm performance use the appointment of a Chief Risk Officer (CRO) as an indicator that ERM is implemented (Liebenberg & Hoyt, 2011). They argue that a CRO is responsible for the management of all the risks and the oversight over these risks. A weakness of this measure is however, that the news of an appointment of a CRO might not be the initial appointment of a CRO. Further, an even greater weakness is that the appointment does not say anything about the extent to which ERM is implemented.

Further, the presence of a risk committee that oversees all the company's risk is a signal that a bank is engaged in ERM. This is acknowledged by Aebi *et al.* (2011), who argue that such a committee indicates a stronger risk management. These authors also argue that more information about a risk committee is needed to draw relevant conclusions. In

the recent years, three measures for ERM implementation in companies have been developed. These three measures, by Aebi *et al.* (2011) will be discussed now.

Baxter *et al.* (2011) developed an index for ERM quality at banks, to find which factors are related with a high S&P's ERM quality rating. Therefore, they use factors to define complexity, financial risk/resources and corporate governance, which are argued to have an effect on the ERM quality rating given by S&P's. However, it is not this research's purpose to find factors that cause ERM implementation, but factors that measure implementation. Therefore, this index is not usable.

Ellul & Yerramili (2010) also defined a ERM implementation index for banks. This index is focused on the aspects of the organization structure of the risk management function. It is composed of factors concerning the position of the CRO, the experience of the supervisory board and the risk committee. An advantage of this measure is that it uses many different aspects of the risk management organization. A disadvantage is the payments of the CRO and the CEO. This is not always easy to find for Dutch banks, when the CRO is not in the executive board. What makes it even more disadvantageous, is that these measures show to be the most important components in the index. However, the parts that are applicable could still be used.

Finally, Aebi *et al.* (2011) decided to extend the ERM implementation measure by Ellul & Yerramili (2010), in order to measure the effect of corporate governance on risk management practices. These authors base their index on the best practices for risk

management, defined by Mongiardino & Plath (2010). They argue that each bank should have a dedicated board-level risk committee, of which a majority is independent, and that the CRO should be in the executive board. Further, they use the common recommendation to 'put risk high on the agenda' and the different sources that have give an indicator for that. These indicators are also used in measuring ERM implementation. However, these authors do not compose an index out of the different variables. This makes it difficult to draw conclusions on the effects of the whole measure on firm performance. Right now, it is only possible to draw conclusions on the effect of a single measure. Also the collinearity between the different measures is not taken into account, which could also change the results. These disadvantages could be solved, when the different measures are put into an index in this research.

Since the measurements of Aebi *et al.* (2011) are derived from the index developed by Ellul & Yerramili, and all the information that is needed for the first measurements is readily available, it is decided to use the measurements of Aebi *et al.* (2011). In a later stadium from this research, it is shown how the different factors are formed into a single variable, to develop an ERM index. Aebi *et al.* (2011) use ten different indicators for their risk management measure, which will be briefly discussed now. First, the presence of a CRO in the executive board, and the presence of a risk committee on the board level are taken into account. It is argued that the presence of these factors defines whether banks implemented ERM. As was stated before, a CRO is responsible for managing all the business risk and this should lead to a holistic approach. A risk committee on the board level is responsible to oversee all the risks, and this makes it possible to see

interdependencies. Further, it is argued that board size, board independence and financial expertise have an influence on ERM implementation. Third, several characteristics of the risk committee are taken into account. These are the number of risk meetings, the number of directors and the independence of these directors. Finally, the reporting lines are taken into account. These consist of the reporting from the CRO to the supervisory board, and the direct reporting from the CRO to the CEO.

2.5 Summary of the Chapter

There are several signals that show that companies are implementing ERM. Earlier research on ERM and firm performance use the appointment of a Chief Risk Officer (CRO) as an indicator that ERM is implemented (Liebenberg & Hoyt, 2011). They argue that a CRO is responsible for the management of all the risks and the oversight over these risks. ERM implementation is measured as the appointment of a Chief Risk Officer (CRO), and the market reaction to it as the accumulative abnormal return. Pagach & Warr (2010) measured the impact of ERM implementation on different firm factors which are argued to be affected by ERM implementation. These factors are risk, financial, asset and market characteristics of the firm. It is argued that ERM implementation, measured as the appointment of a CRO, should lower the risk. For financial characteristics, leverage, cash availability and profitability are taken into account, whereas asset characteristics should tell something about the firm's assets are likely to be impaired in financial distress. Finally, equity markets should react on a firm's decrease in expected costs of financial distress, when it has implemented ERM. The authors found no significant relationship for these variables, which leads to the

conclusion that ERM implementation has no influence on performance, for both non-financial and financial firms.

There are findings that suggest that ERM implementation enhances firm performance of financial companies in general. An example is the paper by Liebenberg & Hoyt (2011), who investigate the relation between ERM adoption and firm value at insurance companies. These authors also use CRO appointment as indicator for ERM implementation, but use firm value as dependent variable. Firm value is measured as Tobin's Q. ERM does enhance firm value in general. When using another measure for ERM implementation, namely the Standard & Poor's risk management rating, as was done by McShane, Nair & Rustambekov (2011), a more accurate answer could be given to the question whether ERM leads to better firm value for banks. The results show that ERM is significantly positively related to firm value, controlled for other factors. There is also a significant relationship between poor ERM quality and firm value. However, there is no significant relation between high ERM quality and firm value, which suggests that ERM is valued only up until a certain level of sophistication. This study seeks to investigate the impact of Enterprise Risk Management implementation on the value of companies listed at Nairobi Securities Exchange.

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

This chapter provides the methodology of the study. It gives the specific procedures that were followed in undertaking the study. The research design, population, sampling design, data collection methods and data analysis are described in this chapter.

3.2 Research Design

The research design employed in this study was descriptive research design in form of a survey. The major purpose of descriptive research design is to describe the state of affairs as it is at present. According to Mugenda and Mugenda (1999), a descriptive research is a process of collecting data in order to answer questions concerning the status of the subjects in the study. The primary use of descriptive statistics is to describe information or data using numbers (create number of pictures of the information). The characteristics of groups of numbers representing information or data are called descriptive statistics (Kay, 1997). According to Mugenda and Mugenda (1999) this type of research attempts to describe such things as possible behavior, attitudes, values and characteristics.

These descriptions of a descriptive research matches with the purpose of this study, as the intention of this study was to investigate the impact of Enterprise Risk Management implementation on the value of companies listed at Nairobi Securities Exchange. The

advantage or the purpose of using descriptive research design in this study is to ensure the in depth description of the state of affairs.

3.3 Target Population

Target population in statistics is the specific population about which information is desired. According to Ngechu (2004), a population is a well-defined or set of people, services, elements, and events, group of things or households that are being investigated. The population of interest of this study comprised of 60 companies listed at the Nairobi Securities Exchange (NSE, 2012). Thus the study conducted a census survey owing to the small number of NSE listed companies.

3.4 Sample

According to Cooper and Schindler (2003), a sampling frame is a list of elements from which the sample is actually drawn and closely related to the population. This ensured that the sampling frame is current, complete and relevant for the attainment of the study objectives. A sample technique is a statistical technique a researcher adopt to develop an appropriate sample that is a representative of a population under study. The study employed a purpose sampling to select one respondent (finance Manager) from each company. The study sampled 55 respondents who were the respondent for this study. The study covered a period of 5 years from year 2007 to year 2011.

3.5 Data Collection Procedure

Data collection is the most crucial part in gathering the required information with a view of achieving the research objective stated. The researcher acknowledges the various options available as data collection methods or research instruments, each with its advantages and disadvantages. In order to investigate the impact of Enterprise Risk Management implementation on the value of companies listed at Nairobi Securities Exchange, self-administered questionnaires were distributed among sampled respondents. Questionnaires were designed to investigate the impact of Enterprise Risk Management implementation on the value of companies listed at Nairobi Securities Exchange. This made it easier to get adequate and accurate information necessary for the research. The researcher used structured questionnaires as the main data collection instrument. Secondary data was collected for a period of five years from year 2007 to year 2011.

3.6 Data Analysis

Before processing the responses, the completed questionnaires were edited for completeness and consistency. The content analysis was used to analyze the respondents' views about the impact of Enterprise Risk Management implementation on the value of companies listed at Nairobi Securities Exchange. The data was then coded to enable the responses to be grouped into various categories. Descriptive statistics such as means and standard deviation were also used to help in data analysis. Tables were used to present the data collected for ease of understanding and analysis.

The companies' financial statements were obtained from the company websites to collect information on the average size, growth, leverage, profit, firm value of the companies as at the last audited accounts. Data collected using the research questionnaire was analyzed using descriptive statistic to identify the mean and percentage of responses received.

A multivariate regression equation was used to analyze data on the relationship between ERM and the values of the firm because it allows us the use of several predictive variables simultaneously (Beasley et al, 2005). To distinctly isolate the relationship between ERM and value of the company, we need to control for other factors that could influence firm value (Liebenberg and Hoyt, 2003; Beasley et al, 2005; Hoyt et al, 2008). The controlling variables we will use are similar to those used by Hoyt et al (2008). Information gathered for assessing the impact of ERM to the value of the firm was modeled into a multivariate regression;

$$FIRM\ VALUE = f [ERM\ LEVEL, SIZE, LVG, PROFIT, GWTH].$$

The logit regression equation will be

$$Y = \beta_0 + \beta_1 ERM\ Level + \beta_2 Size + \beta_3 Lvg + \beta_4 Profit + \beta_5 Gwth + \varepsilon$$

Y is the value of the firm; it was measured by market to book value of the firm

ERM level will measure the implementation of ERM in the organization which will be measured by their stages of ERM implementation (framework), which reflects a value ranging from 1 to 5 where; 5 = complete framework in place, 4 = partial ERM framework in place, 3 = planning to implement ERM, 2 = Investigating ERM but no decision made and 1 = no plans exist to implement ERM.

Size, was measured by the use the log of the book value of assets to control for size related variations in Tobin's Q. There is evidence that large firms are more likely to have ERM programs in place (Colquitt et al, 1999, Liebenberg and Hoyt, 2003, Beasley et al., 2005). Thus, it is necessary to control for size in the model because the ERM indicator may proxy for firm size. This study uses the log of the book value of assets to control for size related variations in Tobin's Q.

LVG is leverage of the firm; leverage was measured by the ratio of the book value of liabilities to the market value of equity. To control for relationship between capital structure and the company's value, this study includes a leverage variable that is equal to the ratio of the book value of liabilities to the market value of equity.

Profit is the profitability of the firm; a profit was measured by return on assets (ROA). Profitable firms are more likely to trade at a premium thus to control for profitability this study includes return on assets (ROA) in our regression model.

Growth is the growth of the firm, Historical (one-year) sales growth as a proxy for future growth opportunities. Emulating Hoyte et al (2008), this research uses historical (one-year) sales growth as a proxy for future growth opportunities.

3.7 Validity and Reliability

Validity may be defined as the ability of a test to measure what it purports to measure. Validation of the research instrument was done by use of a pilot study. Prior to the actual

study, pilot test of the measures was conducted against prospective sample population. The subject to be approached during piloting was marked so that they cannot be applied in the final study. The wordings of items were carefully modified based on the pilot test outcomes and reviewed. Pre-testing the questionnaire was of great significance in this survey. The questions was re-examined to ensure that they are not ambiguous, confusing, or potentially offensive to the respondents leading to biased responses. This enhanced in increasing validity of the research instruments.

CHAPTER FOUR

DATA ANALYSIS AND INTERPRETATION

4.1 Introduction

This chapter presents the research findings on the impact of enterprise risk management implementation on the value of companies listed at Nairobi Securities Exchange. The study was conducted on 47 firms listed at the NSE where secondary data from the period of 2007 to 2011 was used in the analysis. Regression analysis was used in analysing the data.

4.2 Data Analysis and Presentation

4.2.1 Descriptive Analysis

Table 4.1: level of implementation in your organization (2011)

Level	Frequency	Percent
No ERM framework and no plans to introduce one	2	5.6
No ERM framework is in place but there is a plan to introduce one in the short-term	3	8.3
ERM framework is a partially developed concept and there is no clear timetable for implementation	7	19.4
ERM framework is well formulated across the business, with a clear timetable for implementation but implementation has not started	11	30.6
ERM framework is well formulated across the business, with implementation in progress and a clear timetable for completing implementation.	10	27.8
ERM framework is well formulated across the business and fully implemented	3	8.3
Total	36	100

From the finding on the level of implementation of Enterprise Risk Management in the organization, the study found that most of the organization as shown by 30.6% indicated that ERM framework is well formulated across the business, with a clear timetable for implementation but implementation has not started, 27.8% of the respondent indicted ERM framework is well formulated across the business, with implementation in progress and a clear timetable for completing implementation, 19.4% of the respondent indicated ERM framework is a partially developed concept and there is no clear timetable for implementation, those who indicated ERM framework is well formulated across the business and fully implemented and No ERM framework is in place but there is a plan to introduce one in the short-term were shown by 8.3% in each case whereas 5.6% of the respondent indicated no ERM framework and no plans to introduce one .

Table 4.2: Risk management influence the financial performance of the firm

Opinion	Frequency	Percent
Yes	32	88.9
No	4	11.1
Total	36	100

From the findings on whether risk management influence the financial performance of the firm, the study revealed that majority of the respondent as shown by 88.9% agreed that risk management influence the financial performance of the firm, whereas 11.1% of the respondent were of the opinion that risk management does not influence the financial performance of the firm, this is an indication that risk management influence the financial performance of the firm.

Table 4.3: Enterprise risk management in the organization

Attribute	Mean	Std Deviation
Enterprise Risk management is seen as a method for handling the risks which an organization is exposed to	4.3659	.58121
ERM is more than a comprehensive coverage of risk and consistency in risk management across the enterprise	4.2683	.44857
The main objective of Enterprise Risk management is to protect the organization from severe financial disruption due to accidental losses, and do this at an affordable and none fluctuating cost	4.1707	.66717
Enterprise risk management (ERM) can be considered as the third generation of risk management which moved away from the “silo” approach toward an approach taking a corporate-wide view	4.4585	.52961
Enterprise Risk management is the process applied across an organization and designed to identify and manage all major risks faced by the firm, and to implement integrated strategies that help achieving the enterprise objectives and maximizing its value	3.9756	.72415
Market risk is ‘the risk of change in the value of a financial position due to a change in the value of the underlying components of which that position depends	4.0000	.70711
Credit risk is ‘the risk of not receiving the promised repayments on outstanding investments, because of default of the borrower’	4.2927	.64202
In order to prevent these risks to give negative outcomes, companies engage into risk management, the purpose of risk management is to reduce the volatility of firm value	4.1220	.74817

From the findings on the respondent level of agreement on various aspects of enterprise risk management in the organization, the study found that that majority of the respondent agreed that Enterprise Risk management is the process applied across an organization and designed to identify and manage all major risks faced by the firm, and to implement integrated strategies that help achieving the enterprise objectives and maximizing its value as shown by mean of 3.9756, market risk is 'the risk of change in the value of a financial position due to a change in the value of the underlying components of which that position depends as shown by mean of 4.0 , In order to prevent these risks to give negative outcomes, companies engage into risk management, the purpose of risk management is to reduce the volatility of firm value as shown by mean of 4.1220, the main objective of Enterprise Risk management is to protect the organization from severe financial disruption due to accidental losses, and do this at an affordable and none fluctuating cost as shown by mean of 4.1707, ERM is more than a comprehensive coverage of risk and consistency in risk management across the enterprise as shown by mean of 4.2683, Credit risk is 'the risk of not receiving the promised repayments on outstanding investments, because of default of the borrower' as shown by mean of 4.2927, Enterprise Risk management is seen as a method for handling the risks which an organization is exposed to as shown by mean of 4.3659 and Enterprise risk management (ERM) can be considered as the third generation of risk management which moved away from the "silo" approach toward an approach taking a corporate-wide view as shown by mean of 4.4585, this was supported by low standard deviation an indication that respondent had similar opinions.

Table 4.4: Implementation of enterprise risk management and how the influence firm value

Attributes	Mean	Std deviation
ERM should not only deliver value to shareholders, it should also deliver value and performance in general to other stakeholders	4.2927	.64202
ERM and firm performance use the appointment of a Chief Risk Officer (CRO) as an indicator that ERM is implemented	4.3902	.58643
CRO is responsible for managing all the business risk and this should lead to a holistic approach	4.4390	.54994
A risk committee on the board level is responsible to oversee all the risks, and this makes it possible to see interdependencies	3.7122	.63726
Board size, board independence and financial expertise have an influence on ERM implementation	4.3659	.66167
Every risk management practice is a negative net present value project and should not be undertaken	4.1220	.71397
Risk management could lower the risk, but that this is paid for with lower returns for shareholders	4.0976	.80015
ERM implementation is measured as the appointment of a Chief Risk Officer (CRO), and the market reaction to it as the accumulative abnormal return	4.4122	.55326
ERM implementation, measured as the appointment of a CRO, should lower the risk	4.0000	.59161
Equity markets should react on a firm's decrease in expected costs of financial distress, when it has implemented ERM	4.0976	.80015
ERM implementation has no influence on performance, for both non-financial and financial firms	4.1707	.66717
ERM implementation enhances firm performance of financial companies in general.	3.6610	.50243
ERM focuses on improving capital efficiency, supporting strategic decision-making and building investor confidence	4.2927	.67985

On the respondent level of agreement on various aspect of implementation of enterprise risk management and how the influence firm value, the study found that majority of the respondent agreed that ERM implementation enhances firm performance of financial companies in general as shown by mean of 3.6611, a risk committee on the board level is responsible to oversee all the risks, and this makes it possible to see interdependencies as shown by mean of 3.7122, ERM implementation, measured as the appointment of a CRO, should lower the risk as shown by mean of 4.0, Equity markets should react on a firm's decrease in expected costs of financial distress, when it has implemented ERM and Risk management could lower the risk, but that this is paid for with lower returns for shareholders as shown by mean of 4.0976, Every risk management practice is a negative net present value project and should not be undertaken as shown by mean 4.1220, ERM implementation has no influence on performance, for both non-financial and financial firms as shown by mean of 4.1707, ERM focuses on improving capital efficiency, supporting strategic decision-making and building investor confidence and ERM should not only deliver value to shareholders, it should also deliver value and performance in general to other stakeholders as shown by mean of 4.2927 in each case, board size, board independence and financial expertise have an influence on ERM implementation as shown by mean 4.3659, ERM and firm performance use the appointment of a Chief Risk Officer (CRO) as an indicator that ERM is implemented as shown by mean of 4.3902, ERM implementation is measured as the appointment of a Chief Risk Officer (CRO), and the market reaction to it as the accumulative abnormal return as shown by mean of 4.4122 and CRO is responsible for managing all the business risk and this should lead to

a holistic approach as shown by mean of 4.4390, this was supported by low standard deviation an indication that respondent held similar opinions .

4.2.2 Regression Analysis

Year 2007

Table 4. 5: Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.886 ^a	.785	.752	.632

Adjusted R squared is coefficient of determination which tell us the variation in the dependent variable due to changes in the independent variable, from the findings in the above table the value of adjusted R squared was 0.752 an indication that there was variation of 75.2% on firm value of companies listed at the NSE due to changes in the independent variable which are ERM level, size, leverage, profit and growth of the firm at 95% confidence interval. This shows that 75.2% changes in firm value could be accounted for by ERM level, size, leverage, profit and growth of the firm at 95% confidence interval. R is the correlation coefficient which shows the relationship between the study variable, from the findings shown in the table above there was a strong positive relationship between the study variable as shown by 0.886.

Table 4.6: Coefficients

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	t	Sig.
1	Constant	3.327	.534		6.227	.000
	ERM Level	.118	.077	.164	1.519	.133
	Size	.198	.099	.237	2.011	.048
	Leverage	.271	.130	.278	2.083	.040
	Profitability	.035	.124	.036	.285	.776
	Growth	.208	.093	.268	2.231	.028

The established regression equation for year 2007 was

$$Y = 3.327 + 0.118\text{ERM levels} + 0.198\text{ Size} + 0.271\text{ leverage} + 0.035\text{ profitability} + 0.208\text{ growth}$$

From the above regression equation it was revealed that holding ERM level , size , leverage , profit and growth of the firm at 95% confidence interval to a constant zero , firm value of companies listed at the NSE would stand at 3.327 , a unit increase in ERM level of implementation would lead to increase in the firm value by a factors of 0.118, unit increase in size of the company would lead to increase in firm value by factors of 0.198 , unit increase in leverage of the firm would lead to increase in firm value by a factor of 0.271 , unit increase in profitability would lead to increase in the firm value by a factors of 0.035 , further unit in growth of the firms listed at the NSE would lead to increase in firm value by a factor of 0.208.

Year 2008

Table 4.7: Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.832 ^a	.692	.653	.583

Adjusted R squared is coefficient of determination which tell us the variation in the dependent variable due to changes in the independent variable, from the findings in the above table the value of adjusted R squared was 0.653 an indication that there was variation of 65.3% on firm value of companies listed at the NSE due to changes in the independent variable which are ERM level, size, leverage, profit and growth of the firm at 95% confidence interval. This shows that 65.3% changes in firm value could be accounted for by ERM level, size, leverage, profit and growth of the firm at 95% confidence interval. R is the correlation coefficient which shows the relationship between the study variable, from the findings shown in the table above there was a strong positive relationship between the study variable as shown by 0.832.

Table 4.8: Coefficients

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	t	Sig.
1	Constant	2.809	.519		5.414	.000
	ERM Level	.012	.049	.026	.256	.799
	Size	.016	.099	.024	.166	.868
	Leverage	.102	.078	.164	1.301	.197
	Profitability	.088	.104	.104	.844	.401
	Growth	.058	.100	.075	.573	.568

The established regression equation for year 2008 was

$$Y = 2.809 + 0.012 \text{ ERM levels} + 0.016 \text{ Size} + 0.102 \text{ leverage} + 0.088 \text{ profitability} + 0.058 \text{ growth}$$

From the above regression equation it was revealed that holding ERM level , size , leverage , profit and growth of the firm at 95% confidence interval to a constant zero , firm value of companies listed at the NSE would stand at 2.809 , a unit increase in ERM level of implementation would lead to increase in the firm value by a factors of 0.012, unit increase in size of the company would lead to increase in firm value by factors of 0.016 , unit increase in leverage of the firm would lead to increase in firm value by a factor of 0.102 , unit increase in profitability would lead to increase in the firm value by a factors of 0.088 , further unit in growth of the firms listed at the NSE would lead to increase in firm value by a factor of 0.058.

Year 2009

Table 4.9: Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.757 ^a	.573	.526	.805

Adjusted R squared is coefficient of determination which tell us the variation in the dependent variable due to changes in the independent variable, from the findings in the above table the value of adjusted R squared was 0.526 an indication that there was variation of 52.6% on firm value of companies listed at the NSE due to changes in the independent variable which are ERM level, size, leverage, profit and growth of the firm at 95% confidence interval. This shows that 52.5% changes in firm value could be accounted for by ERM level, size, leverage, profit and growth of the firm at 95% confidence interval. R is the correlation coefficient which shows the relationship between the study variable, from the findings shown in the table above there was a strong positive relationship between the study variable as shown by 0.757.

Table 4.10: Coefficients

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	t	Sig.
1	Constant	2.385	.408		3.944	.348
	ERM Level	.209	.089	.222	2.347	.021
	Size	.069	.095	.080	.732	.466
	Leverage	.134	.097	.135	1.375	.173
	Profitability	.270	.091	.269	2.951	.004
	Growth	.022	.092	.019	.236	.814

$Y = 2.385 + 0.209 \text{ ERM levels} + 0.069 \text{ Size} + 0.134 \text{ leverage} + 0.270 \text{ profitability} + 0.022 \text{ growth}$

From the above regression equation it was revealed that holding ERM level , size , leverage , profit and growth of the firm at 95% confidence interval to a constant zero , firm value of firms listed at the NSE would stand at 2.385, a unit increase in ERM level of implementation would lead to increase in the firm value by a factors of 0.209, unit increase in size of the company would lead to increase in firm value by factors of 0.069 , unit increase in leverage of the firm would lead to increase in firm value by a factor of 0.134 , unit increase in profitability would lead to increase in the firm value by a factors of 0.270 , further unit in growth of the firms listed at the NSE would lead to increase in firm value by a factor of 0.022.

Year 2010

Table 4.11: Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.925 ^a	.855	.815	.535

Adjusted R squared is coefficient of determination which tell us the variation in the dependent variable due to changes in the independent variable, from the findings in the above table the value of adjusted R squared was 0.815 an indication that there was variation of 81.5% on firm value of companies listed at the NSE due to changes in the independent variable which are ERM level, size, leverage, profit and growth of the firm at 95% confidence interval. This shows that 81.5% changes in firm value could be accounted for by ERM level, size, leverage, profit and growth of the firm at 95% confidence interval. R is the correlation coefficient which shows the relationship between the study variable, from the findings shown in the table above there was a strong positive relationship between the study variable as shown by 0.925.

Table 4.12: Coefficients

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	t	Sig.
1	Constant	1.614	.394		4.098	.000
	ERM Level	.263	.067	.385	3.911	.000
	Size	.111	.056	.207	1.991	.050
	Leverage	.233	.079	.317	2.940	.004
	Profitability	.010	.058	.016	.169	.866
	Growth	.011	.071	.016	.154	.878

$Y = 1.614 + 0.263 \text{ ERM levels} + 0.111 \text{ Size} + 0.233 \text{ leverage} + 0.010 \text{ profitability} + 0.011 \text{ growth}$

From the above regression equation it was revealed that holding ERM level , size , leverage , profit and growth of the firm at 95% confidence interval to a constant zero , firm value of firms listed at the NSE would stand at 1.614, a unit increase in ERM level of implementation would lead to increase in the firm value by a factors of 0.263, unit increase in size of the company would lead to increase in firm value by factors of 0.011 , unit increase in leverage of the firm would lead to increase in firm value by a factor of 0.233 , unit increase in profitability would lead to increase in the firm value by a factors of 0.010 , further unit in growth of the firms listed at the NSE would lead to increase in firm value by a factor of 0.011.

Year 2011

Table 4.13: Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.860 ^a	.740	.718	.608

A Adjusted R squared is coefficient of determination which tell us the variation in the dependent variable due to changes in the independent variable, from the findings in the above table the value of adjusted R squared was 0.718 an indication that there was variation of 71.8% on firm value of companies listed at the NSE due to changes in the independent variable which are ERM level, size, leverage, profit and growth of the firm at 95% confidence interval. This shows that 71.8% changes in firm value could be accounted for by ERM level, size, leverage, profit and growth of the firm at 95% confidence interval. R is the correlation coefficient which shows the relationship between the study variable, from the findings shown in the table above there was a strong positive relationship between the study variable as shown by 0.860.

Table 4.14: Coefficients

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	t	Sig.
1	Constant	1.908	.578		3.300	.001
	ERM Level	.022	.054	.042	.410	.683
	Size	.032	.104	.037	.304	.762
	Leverage	.340	.088	.453	3.886	.000
	Profitability	.155	.090	.189	1.721	.089
	Growth	.038	.095	.041	.400	.690

$Y = 1.908 + 0.022 \text{ ERM levels} + 0.032 \text{ Size} + 0.340 \text{ leverage} + 0.155 \text{ profitability} + 0.038 \text{ growth}$

From the above regression equation it was revealed that holding ERM level , size , leverage , profit and growth of the firm at 95% confidence interval to a constant zero , firm value of firms listed at the NSE would stand at 1.908, a unit increase in ERM level of implementation would lead to increase in the firm value by a factors of 0.022, unit increase in size of the company would lead to increase in firm value by factors of 0.032 , unit increase in leverage of the firm would lead to increase in firm value by a factor of 0.340 , unit increase in profitability would lead to increase in the firm value by a factors of 0.155 , further unit in growth of the firms listed at the NSE would lead to increase in firm value by a factor of 0.038.

4.3 Summary and Interpretation of Findings

The study found that variation in value of the firm can be accounted for ERM level of implementation, size of the company, growth of the company, leverage and profitability of the company. The study further revealed that there was strong relationship between firm value and ERM level of implementation, size of the company, growth of the company, leverage and profitability of the company. From the regression equation it was revealed that growth of the firm, size of the firm, profitability of the firm, leverage and ERM level of implementation had positive relationship with value of the firm listed at the NSE.

The study had intended to investigate the impact of enterprise risk management implementation on the value of companies listed at Nairobi Securities Exchange. From the findings on the regression analysis, adjusted R squared is coefficient of determination which tell the variation in the firm value in the NSE due to changes in ERM level, size, leverage, profit and growth, the study revealed that value of adjusted R square ranged between 0.815 and 0.526, this is an indication that variation in value of the firm can be accounted for by ERM level of implementation size of the company, growth of the company, leverage and profitability of the company. The study further revealed that there was strong relationship between firm value and ERM level of implementation size of the company, growth of the company, leverage and profitability of the company.

The established regression equation for year 2007 was

$$Y = 3.327 + 0.118\text{ERM levels} + 0.198\text{ Size} + 0.271\text{ leverage} + 0.035\text{ profitability} + 0.208\text{ growth}$$

The established regression equation for year 2008 was

$$Y = 2.809 + 0.012 \text{ ERM levels} + 0.016 \text{ Size} + 0.102 \text{ leverage} + 0.088 \text{ profitability} + 0.058 \text{ growth}$$

The established regression equation for year 2009 was

$$Y = 2.385 + 0.209 \text{ ERM levels} + 0.069 \text{ Size} + 0.134 \text{ leverage} + 0.270 \text{ profitability} + 0.022 \text{ growth}$$

The established regression equation for year 2010 was

$$Y = 1.614 + 0.263 \text{ ERM levels} + 0.111 \text{ Size} + 0.233 \text{ leverage} + 0.010 \text{ profitability} + 0.011 \text{ growth}$$

The established regression equation for year 2011 was

$$Y = 1.908 + 0.022 \text{ ERM levels} + 0.032 \text{ Size} + 0.340 \text{ leverage} + 0.155 \text{ profitability} + 0.038 \text{ growth}$$

From the above regression equations, it was revealed that there is a positive relationship between growth of the firm, size of the firm, profitability of the firm, leverage and ERM level of implementation. These finding is consistent with the findings of The Economist Intelligence Unit (2009) which found that on the average, respondents had implemented an ERM strategy but had not communicated the strategy well across departments. This was also the case in Beasley (2005). In investigating whether the level of ERM implementation has a significant positive impact on the value of companies, this study found that the level of ERM had a significant positive contribution to the value of the firm as measured by Tobin's Q. This finding contradicts studies undertaken by Modigliani and Miller (1958), Sharpe (1964), Lintner (1965), Nain (2004), Lookman

(2004) and Jin and Jorion (2005). This studies concluded that implementation of risk management strategies is irrelevant to the firms value.

However, the research findings in this study are consistent with literature reviewed, that indicates that there is a significant relationship between the level of ERM implementation and value of the company (Hoyt et al 2008; Beasley et al, 2005; Kleffner et al, 2003). This is evidenced by the results from the regression model with a positive and statistically significant coefficient for the level of ERM implementation. Lam and Kawamoto (1997) and Meulbroek (2002) also found that Enterprise Risk management makes risk management part of the company's overall strategy and enables companies to make better risk adjusted decisions that maximizes shareholder value. As discussed by Hoyte et al (2008), firms that engage in ERM are able to better understand the aggregate risk inherent in different business activities. According to the regression analysis results, the study finds that there is a significant relationship between the value of the firm and the Level of ERM implementation, the company's size and the profitability of the firm. Consistent with Hoyt et al (2008) and Beasley et al (2005) this study finds that the implementation of ERM has a strong positive linear effect on the value of the company. The coefficient on ERM level is positive and significant. This finding s similar to that of Hoyte et al (2008) that found that insurance companies engaging in ERM are valued at 16.7% higher than other insurance companies.

In line with evidence that large firms are more likely to have ERM programs in place (Colquitt et al, 1999, Liebenberg and Hoyt, 2003, Beasley et al., 2005), this study also

finds that the size of the organization has a significant influence of the value of the firm. To add to that, Allayannis and Weston (2001) find that profitable firms are more likely to trade at a premium thus a positive relationship between a company's profitability and its value as measured by Tobins Q. Leverage, dividend paid and growth were found not to have a significant influence on the value of companies as measured by Tobin's Q. This is partially consistent with Hoyte et al (2008) who did not find a significant relationship between the value of the firm and the growth and leverage variables of the firm. However they found a positive relationship between dividend paid and value of the firm with the notion that dividend payments are a valuable method of reducing agency costs associated with free cash flow. This notion doesn't seem to hold in companies listed in the NSE.

The findings are consistent with Kleffner et al, (2003) and Hoyt et al (2008) who suggested that larger firms are more likely to adopt ERM because the larger the organization, the more complex its operations will probably be and the more its exposure to threatening events. This finding is consistent with the findings of Beasley (2005) where the relationship between the level of ERM implementation and the size of the company were found not to be statistically significant. This finding could be consistent with prior research due to the fact that ERM is still a new concept in the companies listed in the Nairobi Securities Exchange and thus the level of information on its implementation and the availability of skills to implement is the key driver of its implementation rather than the size of the company. Both large and small companies are still trying to acquire skills on how to implement ERM.

The significant and positive coefficient for existence of a CRO/Risk champion suggests that the presence of this position is positively associated with the extent of ERM deployment. This finding suggests that the presence of a risk champion among the senior management team significantly increases the entity's stage of ERM deployment. The findings of the study are consistent with those of Beasley et al (2005) and Liebenberg and Hoyt (2003) that concluded that this finding suggests that the presence of a risk champion among the senior management team significantly increases the entity's stage of ERM implementation. However, whereas those studies also found that board independence and industry of operation had a significant influence on the level of ERM implementation of companies, these papers did not find any significant relationship between this variables and the level of ERM implementation in companies.

Therefore, though contingency theory contends that there is no one best way of organizing and that an organizational style that is effective in some situations may not be successful in others (Fiedler, 1964), this study finds that the level of implementation of ERM in companies listed in the NSE is significantly related to the appointment of a CRO/Risk champion but not significantly related to the other variables of study. This finding seems to suggest that there is one "best way" of getting a company to increase its level of ERM implementation and this is by appointing a Chief Risk Officer or Risk Champion. The findings of this study might be inconsistent with contingency theory because ERM implementation is still at its infancy stage in Kenya having picked up in the year 2005 thus the reason it's only significantly influenced by one variable that is related with its initiation in an organization. Therefore, for corporate executives of

companies in Kenya to advance in their levels of ERM implementation so as to reap the benefits of its value addition to companies, they should ensure that their organizations appoint a risk champion at senior management level to lead their risk management initiatives.

The research findings show that most of the companies listed in the NSE have not implemented an ERM framework but have plans to implement one in the short run. This finding differs from that of The Economist Intelligence Unit (2009) which found a bigger percentage of its respondents (26%) had implemented an ERM strategy but had not communicated the strategy well across departments. The biggest percentage of respondents (41%) in Beasley (2005) also indicated that they had partially implemented ERM. The findings of this study could have been influenced by the fact that ERM is still a new phenomenon in Kenya having gained momentum in 2005 with the introduction of a regulatory requirement by the central bank of Kenya requiring that all banks implement and enterprise Risk management Framework.

Eighty Two percent of the respondents indicated that their companies view ERM as a strategic business partner as compared to 18% who indicated ERM as a compliance initiative. This is inconsistent with the PWC (2007) survey that concluded that most companies implement ERM as a result of regulatory pressure. However, the findings are consistent with Tillinghats-towers Perrin survey (2002) that found that less than half of companies surveyed in the US cited regulatory requirement as motivator for ERM implementation. With reference to Aabo (2004) which related companies' view of ERM

to shareholder theory, we can conclude that since most companies surveyed viewed ERM as a business partner, it therefore follows that these companies have a primary focus on growing shareholder value as compared to stakeholder value.

The findings also show that 45% of the respondents' companies have a Chief Risk Officer who champions the implementation of ERM while in 36% of the companies; ERM is championed by the head of internal audit. Consistent with contingency theory, this study found that the appointment of a Chief Risk Officer had a significant influence on the level of ERM implementation. This finding is consistent with Liebenberg (2003) that found that firms appoint CROs to reduce information asymmetry regarding the company's current and expected risk profiles thus better implementation of risk management.

CHAPTER FIVE

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

5.1 Summary

This study was intended to investigate the impact of enterprise risk management implementation on the value of companies listed at Nairobi Securities Exchange. The focus was to determine the role that ERM implementation plays to influence the firms' decision in either going for more debt or equity in their financing decisions. In order to achieve this objective, the study was designed to collect and analyse the relevant data for Kenyan listed companies.

In order to determine the relationship between leverage and market to book ratio, the study sort evidence from firms listed at the Kenya's Nairobi Securities Exchange. Regression analysis on data from a sample of 41 companies listed at the Exchange for five years period from 2007 to 2011 was conducted to examine the variables firm value and growth of the firm, size of the firm, profitability of the firm, leverage and ERM level of implementation. A suitable regression model was designed in order to capture all the relevant variables of the study.

The study revealed that leverage of the firm can be accounted for by market value to book ratio. There was strong negative relationship between leverage and Market to Book Ratio of the firm. A positive relationship between leverage and the other four control variables namely; growth, size, leverage and profitability was established.

The study found that variation in value of the firm can be accounted for ERM level of implementation, size of the company, growth of the company, leverage and profitability of the company. The study further revealed that there was strong relationship between firm value and ERM level of implementation, size of the company, growth of the company, leverage and profitability of the company. From the regression equation it was revealed that growth of the firm, size of the firm, profitability of the firm, leverage and ERM level of implementation had positive relationship with value of the firm listed at the NSE.

The study had intended to investigate the impact of enterprise risk management implementation on the value of companies listed at Nairobi Securities Exchange. From the findings on the regression analysis, adjusted R squared is coefficient of determination which tell the variation in the firm value in the NSE due to changes in ERM level, size, leverage, profit and growth. The study further revealed that there was strong relationship between firm value and ERM level of implementation, size of the company, growth of the company, leverage and profitability of the company.

5.2 Conclusions

This finding provide an indication that regardless of the differences between developed and emerging markets, the implementation of ERM has a positive impact on the value of companies. This finding is important in motivating corporate executives to make a deeper commitment to implementation of ERM so as to return more value to their shareholders. Furthermore this study provides some initial exploratory empirical evidence that

highlights whether the implementation of ERM has a value addition effect on companies or not and assesses several factors associated with the organization's extent of ERM implementation and their significance to that implementation.

The findings of the study show that companies can add to their shareholders value by implementing ERM thus have a competitive advantage over companies that have not implemented ERM or are at earlier stages of implementation.

The results suggest that though other organization characteristics like board independence, industry of operation, regulatory requirements and rate of growth of the company do not have a significant effect on the level of ERM implementation in companies, the appointment of a Chief Risk officer is critical to the level of implementation of ERM in companies. This finding is important for organizations to in implementing policies for risk management since it indicates that for the policies to be effective, the organization needs to appoint a risk management champion/chief risk officer at a senior management level.

The findings of this study suggest that companies that have their primary focus on adding shareholder wealth should implement ERM as it does contribute to the company's market value. Therefore, an ERM level positive coefficient indicates that companies that implement ERM in the NSE are valued higher than those that have not implemented ERM.

5.3 Policy Recommendations

From the above discussion and conclusion the study recommends that companies at NSE must follow implement the Enterprise Risk Management in order to reduce the amount of business risk they face in their industry.

The study also recommends that companies must take note that ERM implementation increases the firm value. ERM implementation level influence the firm value, this will assist firm inherent to risk by reducing the business risk they face.

It is recommended that financiers of companies including both shareholders and debt issuers keep a watch on ERM implementation as it help firm reduce the risk they face in their industry as they increase their firm value.

There is need for regulatory agency like Capital Market Authority to design policies that will guide firms in implementation of ERM. The study will help in understanding the critical success factors enterprise risk management in Firm Listed in NSE.

5.4 Limitations of the Study

This study was not without limitations. First, it was difficult to measure the level of ERM implementation with limited subjectivity since we relied on questionnaire responses to identify the level of ERM implementation in the respondents companies. In attaining its objective the study was limited to 47 firms listed on the NSE.

Secondary data was collected from the firms' financial reports. The study was also limited to the degree of precision of the data obtained from the secondary source. While the data was verifiable since it came from the Nairobi Securities Exchange publications, it nonetheless could still be prone to these shortcomings.

The study was limited to establishing the relationship firm value and ERM implementation level for firms listed at the Nairobi Securities Exchange. For this reason the non-listed firms could not be incorporated in the study.

The study was based on a five year study period from the year 2007 to 2011. A longer duration of the study will have captured periods of various economic significances such as booms and recessions. This may have probably given a longer time focus hence given a broader dimension to the problem.

5.5 Suggestions for Further Studies

This study provides an initial base that can trigger additional research on ERM. The academic community is positioned to greatly contribute to this growing public policy need for more effective enterprise risk management and corporate governance in both the private and public sector organizations.

From the findings and conclusion, the study recommends an in-depth study to be carried out on the critical success factors influencing the implementation of Enterprise Risk Management to allow more insight.

The study sought to determine the impact of enterprise risk management implementation on the value of companies listed at Nairobi Securities Exchange, the study recommends an in-depth study to be carried out on the relationship between enterprise risk management implementation and profitability of companies listed at Nairobi Securities Exchange.

The study sought to determine the impact of enterprise risk management implementation on the value of companies listed at Nairobi Securities Exchange. The study recommends that a similar study should be replicated to firms not listed in the Nairobi Securities Exchange.

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APPENDICES

Appendix 1: Survey Questionnaire

Questionnaires

This questionnaire is designed to collect data from Companies listed in the NSE on a study on the Impact of Enterprise Risk Management implementation on the value of companies listed at Nairobi Securities Exchange. The data shall be used for academic purpose only and it will be treated with confidentiality it deserves. The respondents are highly encouraged and persuaded to respond to the statements in this questionnaire in the most truthful and objected way possible. Your participation in facilitating this study will be highly appreciated.

Kindly ticks in the space provided [] the correct answer or supply the required information where, required, please specify and elaborate.

Part A: Enterprise Risk Management

1. What is the level of implementation in your organization?

Level	2007	2008	20009	2010	2011
No ERM framework and no plans to introduce one	1	1	1	1	1
No ERM framework is in place but there is a plan to introduce one in the short-term	2	2	2	2	2
ERM framework is a partially developed concept and there is no clear timetable for implementation	4	4	4	4	4
ERM framework is well formulated across the business, with a clear timetable for implementation but implementation has not started	4	4	4	4	4
ERM framework is well formulated across the business, with implementation in progress and a clear timetable for completing implementation.	5	5	5	5	5
ERM framework is well formulated across the business and fully implemented	6	6	6	6	6

2. In your opinion, does risk management influence the financial performance of the firm?

Yes [] No []

3. To what extent do you agree with the following aspect of enterprise risk management in the organization?

Attribute	1	2	3	4	5
Enterprise Risk management is seen as a method for handling the risks which an organization is exposed to					
ERM is more than a comprehensive coverage of risk and consistency in risk management across the enterprise					
The main objective of Enterprise Risk management is to protect the organization from severe financial disruption due to accidental losses, and do this at an affordable and none fluctuating cost					
Enterprise risk management (ERM) can be considered as the third generation of risk management which moved away from the “silo” approach toward an approach taking a corporate-wide view					
Enterprise Risk management is the process applied across an organization and designed to identify and manage all major risks faced by the firm, and to implement integrated strategies that help achieving the enterprise objectives and maximizing its value					
Market risk is ‘the risk of change in the value of a financial position due to a change in the value of the underlying components of which that position depends					
Credit risk is ‘the risk of not receiving the promised repayments on outstanding investments, because of default of the borrower’					
In order to prevent these risks to give negative outcomes, companies engage into risk management, the purpose of risk management is to reduce the volatility of firm value					

4. To what extent do you agree with the following aspect of implementation of enterprise risk management and how the influence firm value?

Attributes	1	2	3	4	5
ERM should not only deliver value to shareholders, it should also deliver value and performance in general to other stakeholders					
ERM and firm performance use the appointment of a Chief Risk Officer (CRO) as an indicator that ERM is implemented					
CRO is responsible for managing all the business risk and this should					

lead to a holistic approach					
A risk committee on the board level is responsible to oversee all the risks, and this makes it possible to see interdependencies					
Board size, board independence and financial expertise have an influence on ERM implementation					
Every risk management practice is a negative net present value project and should not be undertaken					
Risk management could lower the risk, but that this is paid for with lower returns for shareholders					
ERM implementation is measured as the appointment of a Chief Risk Officer (CRO), and the market reaction to it as the accumulative abnormal return					
ERM implementation, measured as the appointment of a CRO, should lower the risk					
Equity markets should react on a firm's decrease in expected costs of financial distress, when it has implemented ERM					
ERM implementation has no influence on performance, for both non-financial and financial firms					
ERM implementation enhances firm performance of financial companies in general.					
ERM focuses on improving capital efficiency, supporting strategic decision-making and building investor confidence					

Thank you for your time

Appendix II : Companies listed on the Nairobi stock exchange

Agricultural

- i) Unilever Tea Kenya Limited
- ii) Kakuzi Limited
- iii) Rea Vipingo Plantations Limited
- iv) Sasini Tea and Coffee Limited

Commercial and Services

- v) Car and General (K) Limited
- vi) CMC Holdings Limited
- vii) Hutchings Biemer Limited
- viii) Kenya Airways Limited
- ix) Marshalls (EA) Limited
- x) Nation Media Group
- xi) T.P.S Limited
- xii) Uchumi supermarket Limited

Finance and Investment

- i) Barclays Bank Limited
- ii) C.F.C Bank Limited
- iii) Diamond Trust Bank Kenya Limited
- iv) Housing Finance Company Limited

- v) I.C.D.C Investments Company Limited
- vi) Jubilee Insurance Company Limited
- vii) Kenya Commercial Bank Limited
- viii) National Bank of Kenya Limited
- ix) N. I .C Bank Limited
- x) Pan Africa Insurance Holdings Limited
- xi) Standard Chartered Bank Limited

Industrial and Allied

- i) Athi River Mining Limited
- ii) B.O. C Kenya Limited
- iii) Bamburi Cement Limited
- iv) British American Tobacco Kenya Limited
- v) Carbacid Investment Limited
- vi) Crown Berger Limited
- vii) Olympia Capital Holdings Limited
- viii) E.A Cables Limited
- ix) E.A Portland Cement Limited
- x) E.A. Breweries Limited
- xi) Firestone E.A. Limited

- xii) Kenya Oil Co. Limited
- xiii) Mumias Sugar Company Limited
- xiv) Kenya Power & Lighting Limited
- xv) Total Kenya Limited
- xvi) Unga Group Limited

Alternative Investment

- i) A. Baumann & Company Limited
- ii) City Trust Limited
- iii) Eaagads Limited
- iv) Express Limited
- v) Williamson Tea Kenya Limited
- vi) Kapchorua Tea Company Limited
- vii) Kenya Orchards Limited
- viii) Limuru Tea Company Limited
- ix) Standard Group Limited.