

**RISK MANAGEMENT PRACTICES AND MARINE PREMIUM
GROWTH OF INSURANCE FIRMS IN KENYA**

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DECLARATION

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

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

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DEDICATION

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ABBREVIATIONS AND ACRONYMS

- AKI:** Association of Kenya Insurers
- ERM:** Enterprise risk management
- IRA:** Insurance Regulatory Authority
- MBS:** Mortgage Based Security
- MOC:** Marine Open Covers
- OAR:** Opportunity Asset Risk
- RAR:** Regulatory Asset Risk
- ROE:** Return on Equity
- SPSS:** Statistical Package for Social Sciences

ABSTRACT

An effective program of risk management is an ongoing process of assessment, intervention and fallback planning. The study sought to establish the relationship between risk management and the premium growth of firms in the marine class of insurance in Kenya. The study adopted a cross-sectional survey research design and was guided by the following objectives; to examine the risk management practices employed by marine insurance firms in Kenya; and to establish the relationship between the adoption of risk management practices and premium growth in Kenya's marine insurance market. The population of the study consisted of all 34 insurance companies underwriting marine class of business and operating in Kenya. A multivariate regression model was then used to analyze the relationship between risk management and premium growth. The outcome of the study established a significant positive relationship between risk management and premium growth. The study concludes that loss financing, risk avoidance and loss prevention and control constitutes the three main categories of risk management practices adopted by firms in the marine class of insurance with risk management practices associated with loss prevention and control being the most influential risk management practices implemented by insurance firms in the marine class of insurance in Kenya. The study recommends that local firms embrace risk management approaches given the fact that risk management constitutes a major competitive strategy in dynamic market conditions considering that a substantial number of firms in the marine class of insurance lack a risk management framework. The study recommends further research to focus on all classes of insurance to enable an overview of the relationship between premium growth and risk management. The fact that the degree to which various risk management practices affect premium growth of firms in marine class of insurance varies from one firm to the other necessitates further research to identify optimal risk management practices and the possibility of setting benchmarks in Kenya.

CHAPTER ONE

INTRODUCTION

1.1 Background of the Study

Risk is the dispersion of actual from expected results or chance of a loss and is an inherent component in any entrepreneurial endeavor. The level of risk that a firm faces has a direct relationship with the level of return that the firm earns. As a result, an organization is successful only when it is capable of well managing a portfolio of risks and their associated rewards (Acharya, and Richardson, 2009). It therefore becomes imperative that a firm should seek to manage its level of risk exposure since risk management is not only a formal process, but fundamental to business conduct. According to Hauser (2010), risk management is essential to achieve a company's strategic, operational and financial objectives. Thus, all organizations need to prepare themselves to cope with crises from whatever source such as clients, government, competitors and natural calamities. A company needs to consider what could go wrong, and think about what needs to be done to avoid problems. Insurance firms for example need not to expect to cope with every contingency, however, and need to be able to respond to new challenges by building risk management into their corporate strategy and daily operations (Lehmann, 2009).

This study will be based on the new institutional theory advanced by Williamson (1998), who postulated that risk management practices may be determined by institutions or accepted practice within a market or industry. This implies therefore that an industry such as insurance will develop and adopt a unique set of rules and practices that will govern it against operational risk that face the industry. Efficient strategic decision-making is achieved through a framework that has two parts. First, risk is related to the capital amount which is required by the company to achieve a sufficient protection level against adverse events. Second, risk is used to adjust the business activities returns in order to determine the activities that are value adding and those that are value destroying (Siokis, 2001).

Kenyan insurers have continuously been guided by the traditional belief of risk meeting opportunity. Consequently, insurers are carefully venturing into underwriting the new

routes and operations such as marine insurance. These developments all carry extreme property and liability dangers especially if the area's remoteness and dearth of historical data leave marine insurers, who are asked to write coverage for polar shipping, with more questions than answers (Akerlof, 2009). Consequently, many Kenyan carriers require a larger volume of insurance and the many small to midsize companies find it impossible to secure their own Marine Open Cover (MOC) cargo policy and these forces most freight forwarders to have an "open cargo insurance policy" (Makove, 2011).

Considering that the insurance liability is split between an industry-generated mutual fund and private reinsurance, the industry fund covers the higher frequency, lower cost end of the annual payout distribution, whereas commercial reinsurance is used to protect the industry fund from high cost, lower probability events at the upper end. These forms of liability represent risk exposure of insurance firms and development of mitigating actions will lead to reduction in the level of risks to the insurance firms. The complex and volatility of the insurance market in Kenya underscores the need for more studies on risk management approaches adopted by insurance firms in Kenya (Makove, 2011).

Though it is the oldest class of insurance, the marine insurance sector in Kenya can be described to be in an infancy stage because it contributes to only 3.3% of the total gross written premiums. The paradox is that Kenyan imports surpass exports but this does not reflect on gross underwritten marine premiums. With current infrastructural projects like the standard gauge railway line, increased importation and exportation of capital assets to and from Kenya, there is need for marine underwriters to be geared up in anticipation of the increased business and this requires evaluation of all factors that will affect premium growth. One of these factors is the risk exposure and how risk management practices can enable insurers rate risks competitively.

1.1.1 Risk Management Practices

According to Jorion (2001), the success of organizations depends upon the risk management practices and understanding properly the firm's sensitiveness to different types of risk. Lam (2001) further observes that risk management reduces earning volatility, maximizes value for shareholders and promotes job security and financial security in the organization. Thus it can be seen that it is advantageous for insurance firms to engage in risk management practices to mitigate various risks facing them. The

formal risk management practices entails the following key steps namely; determination of risk management program objectives, risk identification, risk analysis, selection of practices to handle risks, implementation of the practices and control and review of the decisions made.

Risk management practices can be defined as the process of identifying, assessing and managing the risk in the organization's business strategy including taking swift action when risks are realized. Strategic risk management involves evaluating how a wide range of possible events and scenarios will affect the strategy and its execution and the ultimate impact on the company's value. "Risk" is all-inclusive, encompassing everything from product innovation risk and market risk to supply chain risk and reputational risk. Strategic risk management requires the organization to define tolerable levels of risk as a guide for strategic decision-making. It is a continual process that should be embedded in strategy setting and strategy execution.

An effective program of risk management is an ongoing process of assessment, intervention and fallback planning (McGrew and Bilotta, 2000) and according to Bandyopadhyay et al. (1999) four major components of risk management are: risk identification, risk analysis, risk-reducing measures and risk monitoring. Because business is risk management, understanding the risks accepted by the company as it pursues its strategy to achieve its objectives is essential for the board and relevant stakeholders (King, 2001). The coordination of risk assessment and strategy development will ensure that both internal and external stakeholders consistently manage organizational risk effectively and efficiently. A mandate from the top is needed to assure the risk management team's success in establishing the risk management program to aid in the achievement of organizational goals.

Best practices in risk management practices are intended to prevent weaknesses within organizations from causing damage or even pulling down the firm. However, effective strategic risk management tools and practices are harder to implement as business operations grow, become more complex, and operate in multiple locations and venture into different lines of business. Every enterprise is subject to several types of risks and the focus varies across organizations. Managing risk requires better understanding of the

risks (Faisal *et al.*, 2006), and at the heart of insurance industry is the activity of identifying the risk. Every human endeavor involves risk and the success or failure of any venture depends crucially on how we deal with it (Dey and Ogunlana, 2004). Marine insurance and marine cargo insurance cover the loss or damage of vessels at sea or on inland waterways, and of cargo in transit, regardless of the method of transit. When the owner of the cargo and the carrier are separate corporations, marine cargo insurance typically compensates the owner of cargo for losses sustained from water, fire, shipwreck, piracy related expenses and any fortuitous physical damage but excludes particular losses or those occurring under certain circumstances (Cummins, 1991). Many marine insurance underwriters will include "time element" coverage in such policies, which extends the indemnity to cover loss of profit and other business expenses attributable to the delay caused by a covered loss. The covers afforded by marine policies are under Institute Cargo Clauses (A), (B) and (C) providing different kinds of cover with specific exclusions against each (Cummins, 1991).

1.1.2 Premium Growth

Premium revenue is the primary source of revenue for most insurers, and it is generally more persistent than other revenue sources. Therefore, premium growth should help predict future revenue and earnings growth. Premium growth also informs on earnings quality: positive growth implies potential earnings understatement due to the overstatement of recognized expenses and negative growth implies earnings overstatement. On the other hand, premium growth is often considered a risk factor (Shimell, 2009).

Premium growth is driven by exposure growth (an increase in the number of policyholders) and rate-level growth (an increase in the average price per exposure). These two sources of growth have different persistence and risk implications. Exposure growth is valuable if the products are properly priced, but in a competitive market, significant exposure growth may be an indication of underpricing. This is the primary motivation for using premium growth as a potential early warning signal of financial impairment. In contrast, premium growth attributable to rate increases may reduce risk if the same customers are paying more for the same risk exposure. However, if the rate

increases alter or reflect a change in the mix of customers, the new book of business can generate unexpected losses if it is mispriced (Selma, 2013).

Premium growth can be accomplished through either increasing exposure counts (selling more policies) or by increasing the average price per exposure (increasing rates and/or by altering the mix of risk exposures). However, the exposure count and the price per exposure are not independent of one another. Increases in price will decrease the number of exposures unless the insurance product is perfectly inelastic. In fact, a company could be growing its exposure base dramatically through cut-throat pricing while showing little or no premium growth. The degree of price elasticity can vary with the type of insurance written as well as market conditions. Assuming that there is no churning of the book of business (new customers swapped for seasoned customers) this would actually reduce risk as the insurer collects more money for insuring the exact same exposures (Horvath, 2004).

With regard to changes in the average premium level, there are several influences to consider. These include historical rate changes, historical rating plan changes, the existence of rating plans that change the average premium level over time, and shifts in the mix of business. Some of these influences will cause abrupt, one-time shifts in the average premium level, while others cause more gradual and continuous shifts. One-time shifts that have a measurable effect should be accounted for through a direct adjustment to the historical premium figures. By using this direct approach, those changes will no longer interfere with the observation of the more gradual, continuous shifts in average premium (Tseng, 2007).

1.1.3 Risk Management and Premium Growth

The determination of the minimum surplus required to provide reasonable degree from the risks an insurance firm faces in the ordinary conduct of its business is critical. The surplus required for a line business depends on a great many characteristics including the distribution of claims amount, method of experience rating or underwriting and the security loading in the premium. Studying the optimal allocation of net retention level ensures: making insurance benefits or liabilities within acceptable limits; optimization of insurer's profitability by adopting a compromise on the distribution of portion of received

premiums. At the same time, insurance not only indemnifies the assured against costs for losses caused by unforeseen events, but also remarkably affects strengthening its financial position. Indiscriminate rating of risks may increase volume of business but similarly increase the claims frequency (Kozmenko, 2011).

At first glance, reinsurance protects insurers, but it implicates the protection of employees of insurance companies from work loss and shareholders from fall in profits. For insurers it means the preservation of insurance rates as long as changes, resulting in an increase in losses, do not change their sudden nature to continuing. For one part, reinsurance has a task to balance the insurance portfolio, its protection from catastrophic or large insurance events. It contributes to better general financial results of the ceding company's activity. For the other part, reinsurance is connected to transfer of premiums parts to insurers; consequently, depending on results of reinsurer's business, the financial indicators of the ceding company can degrade or improve. Therefore, an appropriate definition of the extent in insurance is important for every insurer. As a result, the main determinant is a so-termed net retention of an original insurer, constituting the economically feasible sum of money within which the original insurer is responsible for a certain share of insurance risks; and transfers funds to reinsurance exceeding this level (Chen, 2007).

As a general principle an original insurer fixes the liability limits or net retention limits in a specified payment, relating to the entire insurance risk for one insurance type: vessels, cargoes, industrial facilities, residential buildings, etc. (Thomas, 2005). An appropriate definition of the extent in insurance is important for every insurance company. As a result, the main determinant is a so-termed net retention of an original insurer, constituting economically feasible sum of money within which the insurance company keeps (holds) on its responsibility a certain share of insurance risks, which are insured, and transfers funds to reinsurance exceeding this level. In the present case a surplus treaty is the most common form of reinsurance treaty (Ravindran, 2011).

If a net retention limit is fixed at an understated level, the insurance company will be obliged to cede insurance an extra portion of premium, which could be potentially saved by a correct determining of a net retention limit. However, if a net retention limit is too high, it can negatively impact on case outcomes. For an insurer, the reinsurer's net

retention rate is also significant, as an undersized net retention rate does not give insurers confidence that reinsurer is sufficiently attentive while risks acceptance, since on a very low retention level negative insurance outcomes can be compensated for a commission or a tantieme rather significantly, than partially (Kozmenko, 2011). Therefore, it is necessary to develop a net retention ratio algorithm, which should be the responsibility of an insurance company for ensuring a minimum required level of the insurer's financial security (Chen, 2007).

Premium growth attributable to rate increases can actually reduce the risk of the firm if the same customers are paying more for the same risk exposure. On the other hand, if the price increases alter the mix of customers, the new book of business can generate unexpected losses if the new mix of business is mispriced. Exposure growth would have no effect on profits if the products are properly priced, but in a competitive market, significant exposure growth may be an indication of underpricing. Therefore, there are a variety of outcomes that may result from premium growth, some of which are desirable and some of which are not (Horvath, 2011).

1.1.4 The Insurance Industry in Kenya

The insurance industry in Kenya comprise of insurance companies, reinsurance companies, insurance and reinsurance brokers, loss adjusters, motor assessors, insurance investigators, insurance agents, medical insurance providers, claims settling agents and risk managers. These organizations are registered and licensed by the Insurance Regulatory Authority (IRA) in accordance with the provisions of the Insurance Act, Chapter 487 of the laws of Kenya. According to IRA's annual report (2013), the licensed insurers were forty seven (47), three (3) reinsurance companies, one hundred and seventy (179) insurance brokers, twenty four (24) medical insurance providers, and four thousand eight hundred and sixty two (4,862) insurance agents. The industry's performance has registered improvement in which for example it recorded gross premium of KShs.157.21 billion in 2014 compared to Kshs.130.65 billion in 2013, representing an increase of 20.30%. Over the same time, the profits before tax decreased to Kshs.15.46 billion from Kshs.17.79 billion. The overall insurance penetration decreased to 2.93% in 2014 compared to 3.44% in 2013(AKI, 2015).

The process of identifying and assessing likely risks and their possible impact on operations by insurance firms is a complex and difficult task for a single company in the country and indeed the world over. In Kenya for example, the incurred claims have been increasing at an unhealthy rate such that such classes as medical and motor vehicle insurance had the highest loss ratio of upwards of 75% and 70% respectively (AKI, 2013). What is worrying more is that total claims have been increasing over the years to the extent that some insurers have stopped insuring motor vehicles and others still diversifying away from health insurance. As a result, to assess vulnerabilities in their business operations, insurance firms in Kenya should not only identify direct risks to their operations but also the risks to all other entities as well as those risks caused by their client's business linkages between organizations.

The insurance firms should pursue a more robust risk management process such that they will have to introduce policies, procedures, and technologies to protect the firm's business line from theft, fraudulent claims, and reinsurance risks. A process should therefore be in place to identify, mitigate and manage risk for insurance firms at the underwriting stage and at the same time introduce a process of quickly settling genuine claims made. At the same time, the insurance players have a role to play that includes introduction of proper self-regulation, corporate governance and making sure that the companies have the capacity to meet claims by rating risks properly, avoiding undercutting and ensuring that their solvency margins are sufficient.

1.1.5 Marine Insurance Sector in Kenya

Marine Insurance is one of the oldest forms of insurance. It revolves around the premier and oldest mode of transport and trade in modern commercial enterprise – the sea. The hazardous nature of sea transport necessitated a form of protection against risks that face ships, cargo and merchants, which protection gradually matured into marine. However, as modes of transport evolved, aviation and road transit risks have all been classified under marine (Cummins, 1991).

The History of marine insurance in Kenya can be traced to 19th Century when the British based insurance companies appointed Agents, initially in Mombasa, to transact business on their behalf. In those days, Kenya as a country had little or no industries to speak of, and it therefore follows that only the very simple risks available at the time were written.

Such Agents also doubled up as Claims Settling Agents on behalf of overseas Marine Underwriters. As industries developed and large agricultural farming evolved, so did insurance business pick up and with time, the Agents converted into full-fledged local branches of British companies.

The main players in the Kenyan insurance industry are insurance companies, reinsurance companies, intermediaries such as insurance brokers and insurance agents, risk managers or loss adjusters and other service providers (Insurance Regulatory Authority, 2010). The statute regulating the industry is the Insurance Act; Laws of Kenya, Chapter 487, while the office of the commissioner of insurance was established to strengthen the government regulation under the Ministry of Finance.

Kenya is a net importing country implying that imports into Kenya substantially surpass exports. This presents marine underwriters with the opportunity to tap into the premiums payable on cargo imported on cost and freight basis to enhance the overall underwritten premiums. Currently, 35 insurance companies underwrite marine business with gross underwritten premium of KShs.2.73 billion and net incurred claims of KShs.566 million (AKI, 2015). Marine insurance business is international in nature and subject to international laws and regulations as domesticated in every stage of its operation. Kenya is a net import country implying that imports into Kenya substantially surpass exports. This presents marine underwriters with the opportunity to tap into the premiums payable on cargo imported on cost and freight basis to enhance the overall underwritten premiums. However this opportunity doesn't come without challenges and these include the abuse of marine open covers (MOC) by brokers and assureds through withholding of declaration from insurers which is encouraged by Kenya Revenue Authority recognizing Risk Notes issued by brokers instead of Marine Certificates issued by underwriters (AKI, 2013).

1.2 Research Problem

The rationale for risks management among insurance firms is informed by the lag between receipt of premiums and final payment of all claims. An insurance company practicing cash flow underwriting can grow at an excessive rate for a number of years before finally running out of cash to pay claims. Excessive growth is often assumed to be a symptom of inadequate pricing, where a company grows its book of business by

charging less-than-market rates. Additionally, excessive premium growth may signal reserving problems; if the insurer is underestimating the true actuarial cost of business, it may be inadvertently pricing the business below the fair market value. Conversely, excessive premium growth could be the result of the insurer increasing the price per exposure (rate) and simply charging more for its product. Traditional assumptions of competitive markets suggest that this is not possible (Michael & David, 2009).

Insurers' insolvency risk is determined not only by the risks that they face and the actions that they take to mitigate those risks, but also by the capital cushion available to absorb potential losses. Thus, insurers may reduce solvency risk by increasing capital or reducing the assets base or operations supported by existing capital both of which will have an effect on rating of risks and thus premium charged. For example, when faced with a negative capital shock, insurers may sell off non-core businesses, blocks of business, or specific assets in order to pay down debt. Insurers may also securitize recognized receivables or unrecognized future premium receivables to enhance capital ratios. Capital may be increased by issuing shares or subordinated debt, or by cutting dividends (Adams, Hardwick & Zou, 2008).

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, risk management 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 (Naveed et al., 2011).

Losses in the marine class of insurance in Kenya can be attributed to the long supply chains, mismatch between the legislative framework and the practice of marine cargo insurance in Kenya due to blanket adoption of the Marine Insurance Act of 1906 of the United Kingdom into the Marine Insurance Act Chapter 390 Laws of Kenya. The dominance of marine business by brokers and the lack of adequate personnel with skills and knowledge in both broking, underwriting, claims and marine surveying are

challenges that face this sub-sector. In order to deal with these challenges and mitigate losses arising out of major marine casualties, it's important to identify and outline key risk management practices for this sector and the impact on premium growth.

A number of studies have been carried out on risk management and premium growth. Michael and David (2009) carried out an Empirical investigation of the effect of growth on short-term changes in loss ratios in the US and with the aim of evaluating the short-term effect of premium growth on the loss ratio of property-casualty insurers. The study established a negative relationship between premium growth and changes in loss ratios, suggesting that premium growth alone does not necessarily result in higher underwriting risk. Baranoff and Sager (2009) explored US life insurers' exposure to mortgage backed securities (MBS) and its potential impact on capital should the credit ratings of these bonds be lowered. Under all scenarios, they find large increases in assessed asset risk. They further model insurer capital structure as a function of asset risk and other factors to assess whether insurers had prepared their capital structures for the possibility of problems with these instruments. A study carried out on organizational risk management by Bekefi et al. (2008), on how to create growth using opportunity risk management effectively, argued that by focusing on the downside of risk, companies can overlook opportunities that provide significant possibilities for organizational innovation and new competitive advantage. His findings however fall short of aggregating the different risks into a portfolio making it impossible to see the interdependencies between risks leading to a poor comprehension of risk, hence the current study.

Locally, Kamau (2010) did a survey on adoption of risk management by commercial banks and found out that the common types of risks faced by the firm are foreign, inflation rates, interest rates and bad debts. He proposed holistic risk management practices where all the employees of the firm are involved in the mitigation of its effect on the firm's performance. His study is however limited to the extent that, he applies the traditional risk management view of risk as individual hazards rather than putting risks in the context of business strategy before building a portfolio of risk development which is the domain of the current study. Salesio (2006) studied the risk mitigation strategies adopted by Insurers in Kenya. He noted that perception of risk influences the way in which different options are evaluated and implemented in an organizational setting and

thus adaptability is viable, only when the pace of organizational change matches the pace of environmental change. His findings however fall short of linking the risk mitigation strategies to the premium growth of the respective firms, hence the current study.

While literature on risk management abounds, most studies have been conducted in the developed world with only a few focusing on Kenya and Sub-Saharan Africa. Consequently, most of past studies have largely ignored industry-specific and country-specific risk determinants of premium growth. Towards this end, little research has studied the impact of risk management practices on premium growth in the context of insurance companies. In view of the above literature review, it is evident that the establishment of risk management practices for firm underwriting marine business in Kenya has not been delved into. Besides, research information regarding risk management on offshore and marine industry lacks a risk mitigation framework across the insurance industry. Hence this gap leads to the following research question, what is the effect of risk management practices on marine premium growth by insurance companies in Kenya?

1.3 Research Objectives

The objectives of this study were:-

- i. To examine the risk management practices employed by marine insurance firms in Kenya; and
- ii. To establish the relationship between risk management practices and marine premium growth of insurance firms in Kenya.

1.4 Value of the Study

This study will assist management of insurance companies identify risk management practices that minimize losses and bolster premium growth. Also the areas which need improvements from the perspective of risk alleviation competency or customer sensitivity can be easily delineated. The study will also establish a framework that outlines the relationship between risk management and premium growth which is the main revenue stream of insurance firms. The presented approach will expand the subjective risk management process to include information management and to some extent knowledge management and thus add some more activities to the practice of risk management.

This study will create a monograph which could be replicated in other sectors of the economy. Most importantly, this research will contribute to the literature on risk management and how risk management practices can improve premium growth. The findings will be valuable to academicians, who may find useful research gaps that may stimulate interest in further research in future. Recommendations will be made on possible areas of future studies. The study further justifies its value to insurers in the country interested in developing the marine portfolio since they will be able to understand the practices for success in the sector.

This study will reaffirm the reason why risk management is an integral part of the decision-making process particularly with respect to premium growth that can proactively help in overcoming the possibilities of the business failures. As a result, the government and regulators in the insurance sector will also find invaluable information in the management of risk and as a result put in place policies that will guide and encourage other firms within and without the industry in implementing risk management practices.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

The chapter provides an extensive literature and research related to the risk management practices in the marine insurance market. It gives an overview of the theoretical foundation, insurance risk management practices and organizational performance measurement.

2.2 Theoretical Foundation

The debate on risk management practices in the insurance industry can be discussed in light of three theories in literature: Portfolio Theory, Collective Risk Theory and New Institutional Economic Theory.

2.2.1 Portfolio Theory

Advanced by Borch (1974), the theory assumes that an insurance firm competes for investors' funds in the capital market such that their profits must compensate the existing and potential stakeholders for the risks they assume through their investment. Fairly recent financial theory suggests that exact relationship between the expected return and the risk must prevail in the market's equilibrium. The basic idea in portfolio theory which has been suggested by the pioneering work of Markowitz (1952) is embedded in the mathematical properties of the standard deviation of a linear combination of stochastic variables is typically lower than the weighted sum of the individual standard deviations. Each individual risk is represented by a stochastic variable which is assumed to be fully characterized by its expected value and standard deviation. In the model, the expected value is taken as a measure of profitability, while the standard deviation is used as a measure of the risk. The theory emphasizes risks associated with revenue streams and how these risks can be managed to realize profits.

2.2.2 Collective Risk Theory

Also known as the Ruin Theory or Risk Theory was advanced by Filip Lundberg and uses mathematical models to describe an insurer's vulnerability to ruin or insolvency. The business of insurance is essentially faced with two main types of risks, commercial risk and insurance risk (Kahn, 2002). The commercial risks are those types of risks that

are attendant upon general economic fluctuations and poor investment decisions. However, insurance risks are pure risks in a class by itself and is related to risk fluctuations as measured by difference between actual and expected claim amounts. Cramer (2000) classified insurance risks into two kinds, external risks such as one that can result from heavy excess mortality resulting from wars and epidemics and the risk of random fluctuations not attributable to any definite cause and resulting from a large number of claims or from particularly large claim amounts or both.

Cramer's collective risk theory seeks to investigate directly the risk enterprise as a whole with the primary interest focused not upon the gains, losses or claims from individual policies but upon the amount of total claims or the total gain arising from all the policies in the portfolio considered. Thus the collective risk theory is concerned with finding the distribution function of the total gain or the total amount of claims in a portfolio or risk enterprise, and finding the probability that the risk reserve of a risk enterprise will become exhausted (Schemetter, 2005). This theory will establish a balance between premium rating/underwriting inflows against claims or loss from hull and cargo policies within the marine portfolio in insurance companies under consideration.

2.2.3 New Institutional Economic Theory

Advanced by Williamson (1998), this theory predisposes that risk management practices may be determined by institutions or accepted practice within a market or industry. The theory links security with specific assets purchase, which implies that risk management can be important in contracts which bind two sides without allowing diversification, such as insurance contracts or close cooperation within a supply chain. Firms in regulated industries provide top management with few opportunities for discretion in corporate investment and financing decisions. Smith and Watts (1992) showed that regulation is a key determinant of a firm's insurance policy on claims. Therefore, if insurance firms tighten scrutiny and face lower claim costs, then they are less likely to use derivatives to hedge firm risk. According to Froot, Scharfstein, and Stein (2003), if external claims of an insurance firm are more costly to a firm than the premiums generated, then the firm could benefit from using derivatives.

In particular, firms can hedge cash flows to avoid a shortfall in funds that may require a costly visit to the capital markets and at the same time derivatives are positively related to

measures of the firm's investment opportunity set proxies. When market participants detect the presence of a large number of urgent claims, for example, the price of an insurance cover can rise sharply. As a result, natural buyers of premium hold back from supplying liquidity, accentuating the problem and placing a greater burden on market makers and intermediaries. The financial instability that results can contribute to further risk aversion as policy holders receive information on the value of their wealth from a market driven by urgent selling pressure and as buyers hold back and wait for calmer markets. In essence, the equilibrating mechanism necessary for the normal functioning of insurance markets as a part of the economic allocation process becomes dysfunctional, requiring external intervention to prevent a broadening and deepening of the financial malaise.

2.3 Insurance Risk Management Practices

Traditional risk management propose the existence of markets that allow risks to impose real costs on firms and that risk management can increase firm value by reducing total risk, typically measured as some type of volatility. In the insurance sector, several mechanisms have been adopted in management of risks that face firms in the industry. These include loss financing, risk avoidance, loss prevention and control.

2.3.1 Loss Financing

In insurance companies, this is a broad category that involves risk transfer, risk retention and diversification. It is primarily concerned with ensuring the availability of funds in the event of a loss through aggressive marketing and prudent underwriting premised on sound risk assessment and premium rating techniques. The insurance premiums should reflect both the expected claims and certain loadings like commissions, administrative costs, claim settlement expenses, profit and risk by underwriter. Alijoyo (2004) indicated that risk retention, risk transfer and diversification could be used as measures of loss financing in insurance companies. Under the risk transfer practice, insurance companies use this practice to transfer the exposure to a loss to another person or entity that can be able to bare the loss (Johnson, 2001). Both Naik (2003) and Ayali (2000), agree that using a re-insurance practice, insurance companies can allocate risks to those parties who are most appropriate to bear them. This can reduce losses of the original insurer and therefore improve financial performance.

2.3.2 Risk Avoidance

Risk assessment helps in determining factors that make the risk either bad or good and provides recommendations on improvement. Risks that have a higher likelihood of resulting into a loss can be avoided altogether if improvement is not tenable. Avoidance means that a certain loss exposure is never acquired or an existing loss exposure is abandoned (Rejda, 2003). It is a practice, which implies that the chance of loss is reduced to zero because the loss exposure is never acquired. If insurance companies fail to avoid some of the risks, they can run bankrupt (Kiochos, 1997). Insurance companies therefore apply a system of policies and strategies in order to avoid the risk of bankruptcy provided their resources are applied effectively (Owen, 1995). Many insurance policies, although surprisingly popular should be avoided because they tend to be very profitable to the insurance companies but they lead to losses especially when claims by clients accumulate. Such policies include; burial, children's life, disability and single disease such as cancer (Rejda 2003). However, he further indicated that, avoidance has two disadvantages where the insurance company may not be able to avoid all the risks and it may as well as not being practical to avoid all the losses.

2.3.3 Loss Prevention and Control

Kiochos (1997), states that to prevent or to minimize the chance of fire, insurance companies generally advise that some preventive measures be taken. He also commented that insurance companies can only reimburse financial loss but not intangible things such as valuable information and loss of files. Loss prevention refers to the measures that reduce the frequency of a particular loss for example measures that reduce vessel or truck accidents and strict enforcement of safety rules (Rejda, 2003). Insurers generally advise their clients to instill good housekeeping habits, such as ordering goods from reputable overseas suppliers with good track record or using reputable shipping lines. These advisory services are either for free or are considered as value added service with the insurance package. An experienced Insurer also advises on the preventive measures that could be installed in the building (Kiochos, 1997).

2.4 Premium Growth Measurement

Premiums written are a leading indicator of premiums earned – the primary component of most insurers' revenue. This is because a portion of the premiums written in the current

year will be earned and recognized as revenue in future years. For mature companies, previously written premiums that are earned in the current year are approximately equal to currently written premiums that will be recognized in future years. Accordingly, for mature companies the ratio of premiums written to premiums earned is approximately one. In contrast, for growing companies the ratio is greater than one, because currently written premiums that will be recognized in future years are greater than currently recognized premiums that were written in prior years. More generally, expected premium growth increases with the written-to-earned premiums ratio.

Dividend growth performs well in predicting earnings growth because managers are reluctant to cut dividends, and so increase dividends only when they expect higher, sustainable earnings. However, when dividends are small relative to earnings, or when no dividends are paid, this growth predictor is less informative or unavailable, respectively. Historical growth rates in equity help predict future equity and earnings growth due to the persistence of growth rates and the correlation across financial statement items. That is, high historical equity growth implies high future equity growth and therefore high earnings growth. More importantly, historical equity growth predicts earnings growth because it implies that additional equity will be available to generate future earnings, that is, next year's ROE will be earned on a larger investment base (Nissim & Ziv 2001).

For insurers and other financial services companies, the relationship between equity growth and subsequent revenue and earnings growth is also due to regulatory capital requirements, which restrict the operations of weakly-capitalized institutions. While current equity growth generally implies future growth, it does have some negative implications. As discussed earlier, growth in equity is often negatively related to earnings quality; there could be premium growth emanating from bad risks. In addition, earnings growth due to equity growth is costly. This follows because equity growth due to stock issuance dilute the share of existing stockholders by creating new claims on the firm's assets and cash flows, and equity growth due to earnings reinvestment implies that stockholders forego the opportunity to use the reinvested funds (Harris & Nissim 2006).

With regard to changes in the average premium level, there are several influences to consider. These include historical rate changes, historical rating plan changes, the

existence of rating plans that change the average premium level over time, and shifts in the mix of business. Some of these influences will cause abrupt, one-time shifts in the average premium level, while others cause more gradual and continuous shifts. One-time shifts that have a measurable effect should be accounted for through a direct adjustment to the historical premium figures. By using this direct approach, those changes will no longer interfere with the observation of the more gradual, continuous shifts in average premium (Cummins & Lewis, 2003). Another reason to use the direct approach for these types of changes involves the purpose of the indicated rate level change calculation. The overall rate level consists of base rates and rating plan factors. The indicated rate level change is based on the current rate level. Therefore, it would be incorrect to project anticipated changes to base rates and rating plan factors, which would yield a level higher rate level than the current rate level. This error would occur if historical rate changes and rating plan changes were captured in the overall premium trend and that premium trend is projected to a future date (Cummins & Lewis, 2003).

2.5 Empirical Studies and Research Gaps

Epermanis and Harrington (2006) conducted an analysis of abnormal premium growth surrounding changes in financial strength ratings for a large panel of property/casualty insurers. The findings generally indicated significant premium declines in the year of and the year following rating downgrades. Consistent with greater risk sensitivity of demand, premium declines were concentrated among commercial insurance, which has narrower guaranty fund protection than personal insurance. Premium declines were greater for firms with low pre-downgrade ratings, and especially pronounced for firms falling below an A- rating. There is no evidence of moral hazard in the form of rapid commercial or personal lines premium growth following downgrades of A or low-rated insurers.

Omasete (2014) conducted a study on the effect of risk management on financial performance of insurance companies in Kenya and found out that; a majority of insurance companies in Kenya had adopted risk management practices in their operations and that this had a strong effect on their financial performance. Tillinghast-Towers Perrin (2004) conducted a web-based survey and concluded that insurers have come to recognize risk management as fundamental to creating and improving shareholders' value through better

risk-based decision making and capital allocation. Economic capital was a key decision making tool for all companies at all levels.

Baranoff, Papadopoulos, and Sager (2007) explore the role of risk in the capital structure decision of life insurers during the period 1994 through 2000. It identifies two groups of insurer risk factors that arise from the major activities of life insurers: investing (asset risk) and underwriting (product risk). The authors compare two candidate measures for the role of proxy for asset-related risks. One measure, called regulatory asset risk (RAR), derives from the regulatory tradition of concern with solvency and is related to the C-1 component of risk-based capital. The other measure, called opportunity asset risk (OAR), is motivated by traditional finance concerns with market risk and reflects volatility of returns. Product-related risks are proxied by underwriting exposures in different product lines. The authors find that RAR and OAR are not equivalent proxies for asset risks. Although overlapping to some extent, each illuminates different aspects of the asset risk-capital interrelationship. In particular, RAR does not seem to affect the capital structure decision of small firms, although OAR does. This contrasts with large insurers, for whom both RAR and OAR have significant effects on capital that comport with the finite risk hypothesis. More detailed analysis suggests that the lack of effect of RAR for small insurers may result from RAR's proxy some factors that induce finite risk for part of the small insurer sample, and other factors that favor the excessive risk hypothesis.

Although previous research indicates that increasing numbers of insurance companies are adopting and implementing risk management systems, there has been little work exploring the adoption drivers and the determinants of risk management implementation within insurance companies. Second, despite the fact that some research has argued for a positive relationship between risk management practices implementation and capital (Lam, 2001; Barati et al. (2013), limited empirical research has been conducted to address the impact of risk management practices on premium growth in the context of insurable risks within the marine class of insurance. This research attempts to address this gap.

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

This chapter describes the research design, population of the study, data collection and data analysis that were applied in the study.

3.2 Research design

The study adopted a cross-sectional survey design which is suitable for the study because it involves collection of data from several respondents in all insurance companies underwriting marine business and operating in Kenya at the same point. This research design allowed for contact with otherwise inaccessible participants. According to Cooper and Schindler (2000) cross-sectional surveys are studies aimed at determining the frequency (or level) of a particular attribute, in a defined population at a particular point in time.

In this type of research study, either the entire population or a subset thereof is selected, and from these individuals, data are collected to help answer research questions of interest. A cross sectional study was used to determine the interrelationship between the variables under consideration among the different firms in the study and this permitted the researcher to make statistical inference on the broader population and generalize the findings to real life situations and thereby increase the external validity of the study.

3.3 Population of the Study

According to Kothari (2011), a population is the total of all the individuals who have certain characteristics and are of interest to a researcher. Lewis & Thornhill (2009) view a population as the totality of all members or cases. Mugenda and Mugenda (2003) define a population as an aggregate of all that conform to given characteristics. The population of the study consisted of all insurance companies underwriting marine business and operating in Kenya. According to the Association of Kenya Insurers, there are 34 insurance companies underwriting marine in Kenya (Appendix II). The sampling method was a census because of the small number of the targeted insurers in the study.

3.4 Data Collection

The study utilized both primary and secondary data. Primary data was obtained by the use of a semi-structured questionnaire. The questionnaires was administered through drop and pick method thus consisted of both closed and open ended questions designed to elicit specific responses for qualitative and quantitative analysis respectively.

A questionnaire is a useful tool for collecting data from respondents in expressing their views more openly and clearly (Kothari, 2011). The respondents were the underwriting managers or supervisors with knowledge of marine business in insurance companies. From each firm, the researcher was to distribute one questionnaire to either an underwriter or claims supervisor. The 34 respondents were expected to give an insight into some of the risk management practices and premium growth in the marine class of insurance in Kenya. Secondary data was obtained from the AKI industry survey annual report and the audited financial statements of the respective firms.

3.5 Data Analysis and Presentation

Scandula and Williams (2013) argue that; data analysis involves examining what had been collected and making deductions and inferences. Descriptive statistics was used to describe (and analyse) the variables numerically. These included: simple means and standard deviations. A multivariate regression model was used to analyse the relationship between the adoption of risk management practices and firm performance in Kenya's marine class of insurance.

Snijders & Bosker (2000) outline the rationale for multivariate regression analysis based on the following salient features: The fact that conclusions can be drawn about the correlations between the dependent variables, notably, the extent to which the correlations depend on the individual and on the group level. The multiple regression model was computed as follows;

$$Y = \beta_0 + \beta_1X_1 + \beta_2X_2 + \beta_3X_3$$

Where;

Y = Premium growth (Percentage growth of Marine premium sales
Volume over the last five years)

β_0 = Constant

$\beta_1, \beta_2, \beta_3, \beta_4$ = Coefficients of determination

X_1 = Loss financing

X_2 = Risk avoidance

X_3 = Loss prevention & control

The values X_1 , X_2 , and X_3 were computed from the mean score of the response on each Likert-scaled data for each insurance firm. The mean score was thus obtained for the respective variables for each of the insurance companies and the values were utilized for regression analysis. The value of Y (Premium Growth) was an average of the five year period that, is 2009-2014.

CHAPTER FOUR

DATA ANALYSIS, FINDINGS AND DISCUSSION

4.1 Introduction

This chapter presents the findings of the study in establishing the risk management practices and premium growth of firms in the marine class of insurance in Kenya. The chapter presents; the response rate, the findings on the organizational profiling, the study findings on risk management practices adopted by firms in the marine class of insurance, the relationship between risk management and premium growth and a discussion of the results.

4.2 Response Rate

Thirty-four (34) questionnaires were administered to the insurance firms. Twenty eight (28) of these questionnaires were returned representing a response rate of 82.35 percent. This response rate was sufficient and representative and conforms to Mugenda and Mugenda (2003) stipulation that a response rate of 50% is adequate for analysis and reporting; a rate of 60% is good while a response rate of 70% and over is excellent.

To establish the relationship between risk management and marine premium growth of firms in the marine class of insurance in Kenya was analysed using descriptive statistics and summarized in various frequency tables. With the help of SPSS version 21 statistical software, data on risk management practices adopted and their impact on the premium growth of respective firms was analysed using; mean scores, standard deviations and regression analysis. The factors were ranked in order of importance, the correlation between them yielded the key factors that loaded most on the components and therefore had the greatest impact on premium growth.

4.3 Organizational Profile

The demographic characteristics of the firms that were tested include the firm's experience in underwriting, human resource capacity and the existence of a risk management framework.

4.3.1 Experience in Underwriting

The study sought to determine the number of years that the firms had been involved in underwriting. The results are shown in Table 4.1.

Table 4.1: Experience of Respondents

Working experience		Frequency	Percent
Valid	Less than 2 yrs	2	7.1
	2-5 yrs	4	14.3
	6-10 yrs	3	10.7
	Over 10 yrs	19	67.9
Total		28	100.0

From Table 4.1 it is clear that most of the firms (67.9%) have over ten years' experience in underwriting. This implies that the information collected was from respondents who have substantial experience and familiarity with risk management practices adopted by their respective firms.

4.3.2 Human Resource Capacity

The study sought to determine whether the insurance firms had a dedicated marine and aviation staff of department. The results are shown in Table 4.2.

Table 4.2: Dedicated Staff and Department

Dedicated department		Frequency	Percent
Valid	Yes	22	78.6
	No	6	21.4
Total		28	100.0

The findings in Table 4.2 show that 78.6% of the firms have a dedicated marine and aviation staff or department. This implies that most insurance firms have committed adequate human resources.

4.3.3 Existence of a Risk Management Framework

An inquiry was named into whether the marine insurance firm had a well-established risk management approach. The results are presented in Table 4.3.

Table 4.3: Existence of a Risk Management Framework

Risk management frame work		Frequency	Percent
Valid	Yes	24	85.7
	No	4	14.3
Total		28	100.0

From the findings in Table 4.3, it is clear that most marine insurance firms (85.7%) have a well-documented risk management approach. This implies that globalization and the increasing market complexes in Kenya's marine sector have compelled insurance firms to adopt risk management models to enhance their agility and responsiveness to changes in the macro-environment.

4.4 Risk Management Practices adopted by Firms in the Marine Class of Insurance

Unlike the classical functional approach, risk management is process oriented. The study sought to examine the various risk management practices adopted by insurers in the marine class of insurance in Kenya. The effectiveness of a risk management process lies in the implementation of specific risk management practices in the context of a given risk management framework. In this context, the study sought to determine the various risk management practices adopted by insurance firms in the marine class of insurance in Kenya. The respondents were asked questions on the extent to which their firms have adopted various risk management practices on a likert scale of 1-5 where: 5 = strongly agree; 4= Agree; 3= Moderate extent; 2= Disagree; and 1= Strongly disagree. A rating of 3 (Moderately extent) was considered significant in this study. In the initial step, a correlation matrix was generated to identify any significant relation between the items then descriptive statistics were used to determine the variance of the risk management practices as shown in Table 4.4.

Table 4.4 Risk Management Practices

	Mean	Std deviation
Wholly retains risk without transferring to other insurers for covers of up to KShs1 million without affecting cash flows	4.1071	.73733
The company has re-insurance treaties for amounts that are beyond its retention limits	4.5000	.79349
Premiums payable are based on expected claims for the portfolio, certain loadings and the risk the underwrite undertakes by going on cover	3.3929	.78595
The company rejects to underwrite some risks on the basis of higher likelihood that risk will occur and effects will be severe	2.3929	.91649
The firm conducts risk assessment prior to going on cover and makes risk improvement recommendations to the Insured	3.1786	.72283
The company spreads its risk exposure by insuring different business lines and not concentrating only on one or a few markets	3.2143	1.16610
The firm selects the type of risks that it can take and avoids the ones in which the level of risk exposure is high	2.3571	1.16155
The firm has benchmarks for identifying risks that cannot be covered and selecting those that can be insured by the firm	3.0000	1.15470
The firm has a process to integrate the effects of major risk types (strategic, operational, financial, hazard, and legal) into the overall organizational operations	3.3929	.87514
The analysis of the clients financial health is multifaceted and includes such areas as claims experience, stature in society, liquidity, solvency, repayment capacity, profitability, and financial efficiency measures which will establish their capacity t	2.9286	1.21499
The firm trains its clients through in-house seminars on preventive measures that can be taken in their operations to minimize the level of risks	2.8571	.97046
The company makes suitable recommendation to clients on risk improvement for example the routes that should be taken to avoid piracy prone areas	3.3929	1.22744
The Insured's supply chain network is considered and reputable service providers like clearing agents and shipping lines are encouraged to increase and secure subrogated insurers' third party recovery chances	2.8929	1.39680
The insurance company has put in place measures that reduce the severity of a loss after it has occurred	3.7500	1.10972
The insurance firm communicates the evaluation results openly to all the clients concerned	4.1429	1.29713

The findings in Table 4.4 indicate that on the overall the company's re-insurance treaties for amounts that are beyond its retention limits is the risk management practice adopted to the largest extent with a mean of 4.5 and standard deviation of 0.14996. On the other

hand, the firm's selection of the type of risks that it can take and avoid the ones in which the level of risk exposure is high is adopted to the lowest extent at 2.3571 and 0.21951 respectively.

For easy analyzability, the risk management practices were categorized into three mainstreams: risk management practices associated with loss financing; risk avoidance and loss prevention and control. The company's re-insurance treaties for amounts that are beyond its retention limits is the most influential risk management practice associated with loss financing. The firm's establishment of a process to integrate the effects of major risk types (strategic, operational, financial, hazard, and legal) into the overall organizational operations is the most critical risk management practices associated with risk avoidance with a mean of 3.3929 and standard deviation at 0.16539 implying that it is adopted to a moderate extent among the insurance firms. The insurance firm's ability to communicate the evaluation results openly to all the clients concerned is the most influential risk practice associated with risk prevention and control with a mean of 4.1429 and standard deviation of 0.24513 indicating that the practice is adopted to a large extent among the insurance firms.

4.5 Relationship between Risk Management and Premium Growth

A multiple regression model was used to establish the relationship between risk management practices (predictor variables) and Premium Growth (dependent variable). Using SPSS version 21 package, the resulting regression coefficients have been used to interpret the direction and magnitude of the relationship. The β coefficients show the responsiveness of the dependent variable as a result of unit change in each of the independent variables (risk management practices). The error term ε captures the variations that cannot be explained by the model. Premium growth (dependent variable) was measured by the percent premium growth in sales over the study period. The results are shown in Table 4.5.

Table 4.5: Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics					Durbin-Watson
					R Square Change	F Change	df1	df2	Sig. F Change	
1	.954 ^a	.910	.074	2330.00870	.910	2.384	3	24	.001	2.338

- a. Predictors: (Constant), Loss prevention & control, Loss financing , Risk avoidance
b. Dependent Variable: Premium Growth

From Table 4.4 the Coefficient of Multiple Determination (R^2 Square) is 0.91 indicating that that the regression line is of “*High goodness of fit*” explaining up to 91% of the variation in Premium growth. This implies the 91% of the variation in marine premium growth can be attributed to risk management practices adopted by firms in in the marine class of insurance in Kenya.

Table 4.6: ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	6249288.137	3	2083096.046	2.384	.001
	Residual	1.303E8	24	5428940.543		
	Total	1.365E8	27			

- a. Predictors: (Constant), Loss prevention & control, Loss financing , Risk avoidance
b. Dependent Variable: Premium Growth

As depicted in Table 4.6 the F static was 2.384 with a significant change of 0.001%. This implies that the impact of risk management practices on premium growth is significant at 5% confidence level. The Model coefficients are presented in Table 4.7.

Table 4.7: Model Coefficients

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	95.0% Confidence Interval for B	
		B	Std. Error	Beta			Lower Bound	Upper Bound
1	(Constant)	.439	1.496		.002	.001	7223.703	7134.825
	Loss financing	.583	.155	.143	.703	.001	785.607	1596.774
	Risk avoidance	.434	.312	.031	.132	.002	897.159	1019.426
	Loss prevention & control	.762	.880	.138	.588	.001	1264.743	703.719

The results in Table 4.7 all the risk management practices had a positive effect on the marine premium growth of the insurance firms in the marine class of insurance in Kenya over the period under study. The most influential risk management practice is loss prevention and control with the highest regression coefficient at 0.762 and a p- value of 0.001. Loss financing is the next risk management practice that accounts for the variation of premium growth with a regression coefficient of 0.583 and p-value of 0.001. The least influential risk management practice is risk avoidance 0.434 and with a p-value of 0.002. As per the SPSS generated results shown in Table 4.7, the Equation $Y = \beta_0 + \beta_1X_1 + \beta_2X_2 + \beta_3X_3$ becomes;

$$Y = 0.439 + 0.583X_1 + 0.434X_2 + 0.762X_3$$

Where;

Y = Premium growth (Percentage growth of Marine premium sales volume over the last five years)

β_0 = Constant

$\beta_1, \beta_2, \beta_3, \beta_4$, = Coefficients of determination

X_1 = Loss financing

X_2 = Risk avoidance

X₃= Loss prevention & control

According to the regression equation established above, taking all the independent variables at zero, the marine premium growth of firms in the marine class of insurance will be 0.439. The data findings analyzed also shows that holding all other independent variables constant, a unit increase in loss financing will lead to a 0.583 increase in the marine premium growth of the insurance firms. On the other hand, keeping all other variables constant, a unit increase in the company's risk avoidance will lead to an increase of 0.434 in the marine premium growth of the insurance firms. Finally, taking all other variable constant, a unit increases in Loss prevention and control will lead to a 0.762 increase in the marine premium growth of the insurance firms in Kenya.

4.6 Discussion of Results

The study findings depict a near perfect positive relationship between risk management and premium growth among the insurance firms in the marine class of insurance in Kenya.

This is supported as evidenced by the high Coefficient of Multiple Determination (R^2) of 0.910. The p-value of 0.001 is within the acceptance region ($p \leq 0.05$) indicating that there impact of risk management on premium growth is significant at 95% confidence level among the firms in the marine class of insurance in Kenya.

In summary, the findings above concur with the literature review on the subject of risk management and premium growth. The finding above corroborates Epermanis and Harrington (2006) who postulate that significant premium declines in the year of and the year following rating downgrades. Consistent with greater risk sensitivity of demand, premium declines were concentrated among commercial insurance, which has narrower guaranty fund protection than personal insurance. The findings equally support Alijoyo (2004) who indicated that risk retention, risk transfer and diversification could be used as measures of loss financing in insurance companies. Under the risk transfer practice, insurance companies use this practice to transfer the exposure to a loss to another person or entity that can be able to bare the loss (Johnson, 2001). Both Naik (2003) and Ayali (2000), agree that using a re-insurance practice, insurance companies can allocate risks to those parties who are most appropriate to bear them. This can reduce losses of the original insurer and therefore improve financial performance.

CHAPTER FIVE

SUMMARY, CONCLUSION AND RECOMMENDATIONS

5.1 Introduction

The study sought to determine; the effect of risk management on the premium growth of marine insurance firms in Kenya. This chapter presents; the summary of the findings, conclusions and recommendations of the study.

5.2 Summary of the Findings

The outcome of the study revealed that most the insurance firms in the marine class of insurance (85.7%) have a well-documented risk management approach. According to the study the company's re-insurance treaties for amounts that are beyond its retention limits is the risk management practice associated adopted to the largest extent while, the firm's selection of the type of risks that it can take and avoids the ones in which the level of risk exposure is high is adopted to the lowest extent. The study reveals that the company's re-insurance treaties for amounts that are beyond its retention limits is the most influential risk management practice associated with loss financing.

The same study findings indicate that the firm's establishment of a process to integrate the effects of major risk types (strategic, operational, financial, hazard, and legal) into the overall organizational operations is the most critical risk management practices associated with risk avoidance. With regards to loss prevention and control the study established that the insurance firm's ability to communicate the evaluation results openly to all the clients concerned is the most influential risk practice associated with risk prevention and control. The outcome of the regression analysis further affirms the above findings by indicating that the loss prevention and control accounts for the greatest variation in the marine premium growth among the firms followed by loss financing and risk avoidance in that order.

5.3 Conclusion

The outcome of the study establishes a relationship between risk management and marine premium growth among the insurance firms in the marine insurance class. Three main categories of risk management practices are identified as; loss financing, risk avoidance

and loss prevention and control. Of the above risk management practices associated with loss prevention and control constitute the most influential risk management practices implemented by insurance firms in the marine class of insurance in Kenya.

5.4 Limitations of the Study

The study sought to establish the relationship between risk management practices undertaken in the marine insurance sector in Kenya and their premium growth. It is clear that a study of this magnitude should include all classes of insurance. The researcher had to juggle between work and the field particularly during data collection. This was a major hindrance particularly in ensuring that the research work did not hamper the performance and productivity of the researcher at the work place.

Despite these challenges the validity of the findings emanating from this study cannot be compromised. In addition, some of the risk management practices cut across all class of insurance and it is sometimes impossible to attribute the growth of marine premiums to these practices.

5.5 Suggestions for Further Research

Studies involving confirmatory factor analysis will need to be carried out to further test the model so established and to confirm the findings of the study. Further studies can be conducted to test and confirm the factor loadings in different insurance firms so as to establish the validity and strength of the model. In the same context, there is need for further research to focus on the critical success factors in the adoption and implementation of risk management models.

The fact that the degree to which various risk management practices affects the premium growth of the marine insurance firms varies from one firm to the other calls for further research efforts to identify optimal risk management practices and on the possibility of setting benchmarks. The need for further research into this aspect of risk management is further compounded by the fact that Risk management approach is a relatively new phenomenon in Kenya.

5.6 Implications for Policy and Practice

The study found that about 21.4 % of the firms lack a dedicated marine and aviation staff or department underscoring the need for local firms in the marine class of insurance to

embrace risk management approaches given the fact that they constitute a potential competitive strategy. In the same context, the study found out that 14.3% of the firms in the marine class of insurance lack a risk management framework. This underpins the need for stakeholders in the marine class of insurance to establish a holistic mechanism for managing risks across the insurance sector which can be based on established benchmarks.

Private and public finance policy makers should focus on the scope and functionality of a risk management model specifically tailored to the Kenyan macro-environment to enhance risk management and the overall premium growth of firms in the marine class of insurers in Kenya. The study thus establishes an important aspect of risk management that can be replicated across firms in other sectors of the economy.

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APPENDICES

APPENDIX I:

INTRODUCTION LETTER


UNIVERSITY OF NAIROBI
SCHOOL OF BUSINESS
MBA PROGRAMME

Telephone: 020-2059162
Telegrams: "Varsity", Nairobi
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P.O. Box 30197
Nairobi, Kenya

DATE... 15/9/2015

TO WHOM IT MAY CONCERN

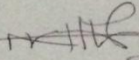
The bearer of this letter ALFRED MUSUNZU WAKWOBIA
Registration No. DG1171199/2014


is a bona fide continuing student in the Master of Business Administration (MBA) degree program in this University.

He/she is required to submit as part of his/her coursework assessment a research project report on a management problem. We would like the students to do their projects on real problems affecting firms in Kenya. We would, therefore, appreciate your assistance to enable him/her collect data in your organization.

The results of the report will be used solely for academic purposes and a copy of the same will be availed to the interviewed organizations on request.

Thank you.


PATRICK NYABUTO
MBA ADMINISTRATOR
SCHOOL OF BUSINESS



**APPENDIX II:
QUESTIONNAIRE**

The questionnaire seeks to collect information on Risk Management Practices in the Marine Insurance Market in Kenya.

PART A: GENERAL INFORMATION

- 1) Name of the Insurance firm (optional).....
- 2) For how long has your organization been underwriting marine risks?
 a) Less than two years [] c) 6-10 years []
 b) 2-5 years [] d) Over 10 years []
- 3) Does your organization have dedicated marine and aviation staff or department?
 Yes [] No []
- 4) Does your organization have a structured and well documented risk management approach?
 Yes [] No []

PART B: RISK MANAGEMENT PRACTICES EMPLOYED BY THE MARINE INSURERS IN KENYA

- 5) Please tick appropriately the extent to which your organization has been practicing the following risk management practices (use the scale below to tick the most appropriate response).
- 6) **Strongly agree; 4) Agree; 3) Moderate extent; 2) Disagree; 1) Strongly disagree**

	Risk Practices	5	4	3	2	1
	Loss Financing					
i	Wholly retains risk without transferring to other insurers for covers of up to KShs1 million without affecting cash flows					
ii	The company has re-insurance treaties for amounts that are beyond					

	its retention limits					
iii	Deductible clause is inserted in policies to share risk with Insured					
iv	Premiums payable are based on expected claims for the portfolio, certain loadings and the risk the underwrite undertakes by going on cover					
v	The company rejects to underwrite some risks on the basis of higher likelihood that risk will occur and effects will be severe					
vi	The firm conducts risk assessment prior to going on cover and makes risk improvement recommendations to the Insured					
vii	The company spreads its risk exposure by insuring different business lines and not concentrating only on one or a few markets					
	Risk Avoidance					
viii	The firm selects the type of risks that it can take and avoids the ones in which the level of risk exposure is high					
ix	The firm has benchmarks for identifying risks that cannot be covered and selecting those that can be insured by the firm					
x	The firm has a process to integrate the effects of major risk types (strategic, operational, financial, hazard, and legal) into the overall organizational operations					
xi	The analysis of the clients financial health is multifaceted and includes such areas as claims experience, stature in society, liquidity, solvency, repayment capacity, profitability, and financial efficiency measures which will establish their capacity to honor the premium payment					
	Loss Prevention and Control					

xii	The firm trains its clients through in-house seminars on preventive measures that can be taken in their operations to minimize the level of risks					
xiii	The company makes suitable recommendation to clients on risk improvement for example the routes that should be taken to avoid piracy prone areas					
xiv	The Insured's supply chain network is considered and reputable service providers like clearing agents and shipping lines are encouraged to increase and secure subrogated insurers' third party recovery chances					
xv	The insurance company has put in place measures that reduce the severity of a loss after it has occurred					
xvi	The insurance firm communicates the evaluation results openly to all the clients concerned					

PART C: RISK MANAGEMENT AND PREMIUM GROWTH

7) Please provide us with the following information regarding the overall performance of your organization for the last five years.

	Measures of Organizational Performance	2010	2011	2012	2013	2014
xvii	Percentage growth of Marine premium sales volume over the last five years					

THANK YOU VERY MUCH FOR YOUR TIME

APPENDIX II:

LIST OF INSURANCE FIRMS OFFERING MARINE INSURANCE

1. AAR Insurance Company Ltd
2. AIG Kenya Insurance Ltd
3. Amaco Insurance Company Ltd
4. APA Insurance Ltd
5. Britam Insurance Company Ltd
6. Cannon Assurance Company Ltd
7. CIC General Insurance Company Ltd
8. Corporate Insurance Company Ltd
9. Fidelity Shield Insurance Company Ltd
10. First Assurance Company Ltd
11. GA Insurance Company Ltd
12. Gateway Insurance Company Ltd
13. Geminia Insurance Company Ltd
14. Heritage Insurance Company Ltd
15. ICEA Lion General Insurance Company Ltd
16. Intra Africa Insurance Company Ltd
17. Invesco Insurance Company Ltd
18. Jubilee Insurance Company Ltd
19. Kenindia Assurance Company Ltd
20. Kenya Orient Insurance Company Ltd
21. Kenya Alliance Insurance Company Ltd

22. Madison Insurance Company Ltd
23. Mayfair Insurance Company Ltd
24. Saham Insurance Company Ltd
25. Occidental Insurance Company Ltd
26. PACIS Insurance Company Ltd
27. Phoenix of East Africa Assurance Company Ltd
28. Britam General (Formerly REAL)
29. Takaful Insurance Company Ltd
30. Tausi Assurance Company Ltd
31. The Monarch Insurance Company Ltd
32. Trident Insurance Company Ltd
33. UAP Insurance Company Ltd
34. XPLICCO Insurance Company Ltd

Source: AKI (2014).

APPENDIX III:
MARINE PREMIUM GROWTH

	2009	2010	2011	2012	2013	2014		Average		% Growth rate
1	AAR	67,037	72,737	58,576	70,900	471	53,944.00	53,944	-99.3357	99.3357
2	AIG	6,683	7,963	25,254	4,790	53,340	19,906.00	19,606	1013.57	1,013.57
3	AMACO	142,473	206,067	235,033	327,018	8,146	183,747.00	183,747	-97.509	-97.51
5	APA	111,122	141,552	182,647	155,590	231,888	164,560.00	164,560	49.03786	49.04
6	Britam	22,095	32,025	39,599	36,052	135,207	52,996.00	52,996	275.0333	275.03
7	Cannon	1,919	4,400	9,944	95,968	29,367	28,320.00	28,320	-69.3992	-69.40
8	CIC General	5,176	6,176	4,820	3,495	84,205	20,774.00	20,774	2309.299	2,309.30
9	Corporate	32,766	37,688	47,985	47,866	2,212	33,703.00	33,703	-95.3788	-95.38
10	Fidelity	61,919	79,407	88,810	90,108	62,293	76,507.00	76,507	-30.8685	-30.87
11	First Assurance	116,943	152,740	174,535	220,413	92,578	151,442.00	151,442	-57.9979	-58.00
12	GA Insurance	456	787	1,273	4,924	286,704	58,829.00	58,829	5722.583	5,722.59
13	Gateway	71,868	102,753	115,628	137,952	2,046	86,049.00	86,049	-98.5169	-98.52
14	Gemina	53,303	64,208	62,513	61,373	146,496	77,579.00	77,579	138.6978	138.98
15	Heritage	77,511	124,850	252,931	209,491	52,670	143,491.00	143,491	-74.8581	-74.86
16	ICEA LION	40,501	46,962	69,599	76,622	258,448	98,426.00	98,426	237.3026	237.31
17	Intra Africa	30	859	430	795	88,769	18,177.00	18,177	11065.91	10,065.91
18	Invesco	225,383	204,811	121,218	205,822	2,006	151,848.00	151,848	-99.0254	-99.03
19	Jubilee	334,809	366,936	360,161	283,398	121,055	293,272.00	293,272	-57.2845	-57.28
20	Kenindia	4,185	5,959	12,506	16,218	241,378	56,049.00	56,049	1388.334	1,388.33
21	Kenya Orient	6,526	12,043	15,231	21,635	18,240	14,735.00	14,735	-15.6922	-15.69
22	Kenya Alliance	7,341	4,399	6,410	9,536	19,474	9,432.00	9,432	104.2156	104.22
23	Madison	68,525	101,136	110,001	116,104	9,751	81,103.00	81,103	-91.6015	-91.60
24	Mayfair	4,200	6,830	4,531	5,206	119,876	28,129.00	28,129	2202.651	2,202.65
25	Saham(Mercantile)	115,821	134,081	131,093	143,225	3,350	105,514.00	105,514	-97.661	-97.66
26	Occidental	2,113	2,875	3,402	4,780	162,040	35,042.00	35,042	3289.958	3,289.96
27	Pacis	8,179	17,780	12,323	16,313	7,046	12,238.00	12,328	-56.8075	-56.80
28	Phoenix	29,108	31,506	142,049	82,692	18,944	60,860.00	60,860	-77.0909	-77.09