

**THE RELATIONSHIP BETWEEN PROPERTY INVESTMENTS AND
PROFITABILITY OF INSURANCE COMPANIES IN KENYA**

BY

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DECLARATION

This research project is my original work and has not been submitted in any other University.

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Supervisors Declaration

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

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LIST OF ABBREVIATIONS

AKI	Association of Kenya Insurers
APT	Arbitrage Pricing Theory
CAGR	Compound Annual Growth Rate
CAPM	Capital Asset Pricing Model
DCF	Discounted Cash Flow
IRA	Insurance Regulatory Authority
MPT	Modern Portfolio Theory
NSE	Nairobi Securities Exchange
PBT	Profit before Tax
ROA	Return on Assets
ROE	Return on Equity
RBA	Retirement Benefits Authority
US	United States

CHAPTER ONE: INTRODUCTION

1.1 Background of the Study

The management of an insurance company's investments is an essential function which directly affects shareholder value. Shareholders are keen to maximize returns through both insurance underwriting and investment performance. There are several asset classes from which insurance companies can invest in and the portfolio weights have limitations which are governed by the Retirement Benefits Authority and the Insurance Regulatory Authority (Mwangi, 2014). Auma (2013) notes that insurance companies have to invest and provide for liquidity requirements to ensure that they are able to meet their financial obligations when they fall due.

Property is a non-traditional asset type possessing unique characteristics and has experienced superior returns over and above traditional asset types throughout Kenya's history as noted by Hassanali (2014). Property investments take up a significant portfolio allocation within the insurance industry in Kenya. Therefore analyzing property investments and evaluating the role of the property asset class in a portfolio is important. Property investments can take a variety of forms, from direct ownership in properties to indirect ownership of property through publicly traded equity securities, such as real estate investment trusts (Knight, 1993).

The role of an insurance company is to underwrite insurable risks, receive premiums which all get pooled together into a fund from which claims on these risks are settled. Birkinsha (1967) notes that the management of the pooled fund also involves investing a portion of the premiums from which the insurance company can earn investment income. Zeckhauser (2004) notes that an understanding of insurance must begin with the concept of risk. In exchange for a premium, the insurer pays a claim should a specified contingency occur. The insurer is able to offer such protection against financial loss by pooling the risks from a large group of similarly situated individuals or firms.

Profitability of insurance companies can be measured in several ways. The standard measures of profitability in the insurance industry include the return on assets (ROA), the return on equity (ROE), the underwriting margin and the net profit margin. This

study will use the ROE as the preferred measure of profitability because it measures an insurance company's profitability by revealing how much profit it generates with the capital the shareholders have invested (Kabajeh, 2012). It is a direct measure of the value the shareholders have gained through the insurance company's activities during a specified time frame. It does not take into consideration the liabilities the company has incurred through debt borrowing. The underwriting margin and net profit margin on the other hand are centered on the profit generated through sales. Kabajeh (2012) notes that the ultimate goal of any company is to maximize shareholder value and therefore this study will focus on the profitability metric that measures the direct impact of property investment for insurance companies in Kenya on the shareholders equity.

1.1.1 Property Investments

Property is an alternative investment which does not possess the risk and return characteristics of traditional investments such as quoted shares and fixed income and are therefore used to diversify investment portfolios (Mansley, 2015). Property investments include both land and permanent fixtures such as buildings. Property investments can be made either directly or indirectly through equity ownership of real estate investment trusts (REITs) which are new to the Kenyan capital markets and set to list on the Nairobi Securities Exchange in the year 2015. On the other hand, property investments can also be made through lending against the property as collateral through mortgage loans (McCord, 2014). Mwaniki (2014) notes that the Kenyan market currently has just over 20,000 active mortgage loans and the growth of this market has been slow over the last decade due to soaring interest rates which make it inaccessible and unattractive for Kenyans to take up mortgages.

There are numerous reasons why insurance companies in Kenya invest in property. Property investing has shown potential for superior long-term total returns generated by both rental income and capital appreciation. Insurance companies can therefore assess and make investment decisions on whether the yield gained through rental income outperforms that of capital appreciation and vice versa. The prospect that long term leases with predetermined rents for some property types may lower the cash flow impact from macroeconomic shocks. Furthermore, the diversification opportunities which insurance companies realize through the non-traditional characteristics of property through the low risk and return correlation with quoted shares and fixed

income instruments. Finally, property has also proven to deliver an inflation hedge when rental income can be adjusted parallel with inflation movements within the economy. This has however not been experienced in Kenya as rents have not been adjusted immediately during periods of high and low inflation (Global Property Guide, 2014).

The uniqueness of property compared to other asset classes is also demonstrated in its basic indivisibility and fixed location that it presents to investors. The size of a property investment is often very large and relatively illiquid. Property typically requires active operational management in maintaining the property and administering building tenants. Furthermore, government and county regulations in Kenya influence what can be done to alter or improve the existing land or property and govern the laws of how property ownership can be transferred. These unique characteristics of property therefore need to be taken into consideration by insurance companies as they venture and make investment decisions on what proportion of their portfolio to allocate to property (Bruggeman, 2011).

1.1.2 Profitability

Profitability is one aspect of financial performance. Financial performance is much broader and can be measured on various aspects other than profitability such as revenue growth, expense controls and working capital management. Schum (2014) notes that profitability also shows the quality of the senior management in a company. Profits can either be distributed to shareholders or reinvested in the company to increase solvency. One measure of profitability is the net profit margin which is computed as an organization's net income divided by its sales revenue. This margin measures the amount of income that the organization has been able to produce per unit currency of sales revenue. Therefore the higher the net profit margin, the higher the profitability for that company. This ratio is purely derived from the income statement and does not require any input from the balance sheet.

A second measure of profitability for insurance companies that is also derived purely from the income statement is the underwriting margin. The underwriting margin is computed as the underwriting profit from insurance operations divided by its gross written premium revenue. This margin measures the amount of income that the

organization has been able to produce from insurance operations only per unit currency of sales revenue.

Profitability can also be measured from metrics that come from an organization's balance sheet. A company's ability to generate profits on its investments is a key determinant of a company's overall value (Robinson, 2015). The return on assets (ROA) is a common measure of profitability and is an investment profitability ratio. ROA measures the return generated by a company on its total assets both fixed and current. The higher the ROA, the higher the profit generated by a given level of assets. It is computed as the net income divided by the average total assets from the current and prior year. The drawback with this computation is that net income is the return to shareholders, whereas assets are financed by both shareholders and creditors.

The final and most ideal measure of profitability for insurance companies from a shareholder perspective is the return on equity (ROE). ROE measures the profits generated by a company on all of its equity capital (Lan, 2012). It is computed as the net income divided by the average total equity from the current and prior year. Interest on debt borrowing is not included in the return on equity capital computation.

1.1.3 The Relationship between Property Investments and Profitability

Insurance companies are often faced with challenging investment decisions on how best to optimize their portfolios for both general and life insurance lines of business which have unique laws and regulations that govern them. The ultimate goal with these decisions are to maximize shareholder value through profits and at the same time not jeopardize policyholders by allocating too much of the fund into risky assets which may result in the company not being able to meet its future liabilities in the form of insurance claims (Auma, 2013). Henebry (1998) notes that insurance companies frame basic investment principles and policies that govern these investment decisions.

Property investments help insurance companies diversify their investment risk and cushion profit margins which benefit both the shareholders and policyholders in the long-run. Roitberg (2012) notes that the diversified portfolio approach helps companies reduce risk without decreasing the expected rate of return with a lower overall standard deviation of returns. Since the expected return for the portfolio remains the same, the measure of diversification known as the diversification ratio is computed as the ratio of

the standard deviation of the weighted entire portfolio of assets to the standard deviation of the selected property asset. Portfolios therefore affect risk more than they affect returns since their main objective is to eliminate the effects of downside risk associated with investing in a single asset (Jorion, 1992).

The rental income and capital appreciation of all the property investments in an insurance company's portfolio are reported as part of the investment income for the respective year. Nissim (2010) notes that insurance companies with large asset bases report higher amounts of investment income compared to insurance companies with smaller asset bases. Profit Before Tax (PBT) figures for larger and more mature insurance companies therefore tend to be boosted more by investment income amounts which takes up a larger portion of the overall profits compared to underwriting profits which are generated purely through insurance business.

Property investments owned by companies in Kenya tend to report significantly more income through capital appreciation compared to rental income and as a result the various methodologies used to determine the fair value that the property appreciated by is often under close scrutiny. During years of poor operational performance, companies tend to inflate the capital appreciation of their property values in an effort to hide the losses (Himmelberg, 2005). On the other hand it is much simpler to determine the investment income gained through rental income because rents are easily quantifiable and measurable. It is for this reason that this study seeks to look into the relationship between property investments and the profitability of companies in Kenya's insurance industry.

1.1.4 Insurance Industry in Kenya

Kenya's insurance industry is one of the most developed in the African continent with an insurance penetration in 2014 of 3.6% which is the fourth highest in Africa behind South Africa, Namibia and Mauritius (Insurance Regulatory Authority, 2014). The insurance industry in Kenya is regulated by the Insurance Regulatory Authority which implements directives within the industry under the Insurance Act, Cap 487. The regulator is responsible for supervising insurance companies, reinsurance companies, insurance brokers and agents, risk managers, loss adjusters and assessors. Chengo (2015) notes that Kenya's insurance industry has experienced a compounded annual growth rate (CAGR) of 18% over the last 10 years and this trend is expected to

continue over the next decade with the industry showing no signs of reaching its maturity stage in the medium term.

The motor and medical classes of insurance have experienced consistent underwriting losses within the industry with an increasing number of insurance companies reporting high claims loss ratios within the last 5 years. These consistent losses are attributed to increasing fraudulent claims and price undercutting within the motor and medical insurance segments. The Insurance Regulatory Authority has issued several guidelines and penalties to companies that are price undercutting by unjustifiably lowering premium rates to lure in business without considering the impact it will have on the claims loss ratio and the company's profitability. This however remains a challenge within the industry and has led to large underwriting losses being declared, the insolvency of some companies and notable changes in senior management across several insurance companies (Okulo, 2015).

Njeru (2015) notes that mergers and acquisitions are also beginning to take shape within Kenya's insurance industry. There are currently 48 registered insurance companies who compete in a cut-throat market largely dominated by the top 10 players. Significant increases in the number of mergers and acquisitions have occurred over the last 3 years along with the market entry by renowned international players such as Prudential. Analysts at local investment banks expect this trend to continue and eventually lead to an insurance industry with much fewer players, less cut-throat competition and healthier profit margins within the industry.

1.2 Research Problem

All sectors of the economy affect the insurance industry in one way or another. When the manufacturing sector grows, the insurance sector benefits through wider coverage of insurance provision to manufacturers. On the other hand when the tourism sector growth is dampened, the insurance sector is affected through less uptake of travel insurance, hotel protector insurance and other forms of interrelated insurance. The insurance industry therefore plays a significant role in the development of the economy, thus the regulatory attention that the Government of Kenya has instituted mainly through the Insurance Regulatory Authority and Retirement Benefits Authority (Chengo, 2015). Junker (2014) notes that the insurance industry is also affected when property developments surge within an economy. The uptake of domestic package, fire

industrial, contractors and erection risk insurance are the most impacted classes of insurance which benefit through property developments. When the insurance industry as a whole increases property allocation within their portfolios, it is perceived that the premium income that insurance companies underwrite increases and therefore their profits increase. Furthermore, it is also perceived that the more property that insurance companies allocate to their portfolio, the more they have to gain from capital gains and rental income on those properties thus increasing the profit levels (Mansley, 2015). This however comes at the opportunity cost of what other alternative asset classes the insurer could have invested in otherwise.

Do the benefits of increasing the portfolio weight on property investments increase profitability for insurance companies? Or are there alternate asset classes such as quoted shares and fixed income which should take more precedence and place the insurance companies in a better position to maximize on profitability in the long run? Does inflation of property values grossly affect the profitability of insurance companies in Kenya?

Some studies have been done in the past on property investments within the insurance industry. Locally, Kaaria (2003) studied the relationship between property investments and the financial performance of pension schemes in Kenya. The results showed that regulatory guidelines and procedures were not being adhered to for property investments in the same way that they were being strictly followed for other asset classes such as fixed income and equity. Ojiambo (2014) studied the effect of property mortgage loans on the financial performance of commercial banks in Kenya. The findings showed that mortgage loans had strong negative effect on the financial performance of the listed banks. In Pakistan, Malik (2011) examined the major factors which affect profitability of insurance companies and concluded that the claims insurance companies incur and the market size of the insurance industry are the main factors affecting their profitability. In this study, the impact of property investments was not considered as a major factor leading to the increase in profitability of insurance companies.

It is therefore apparent that there is lack of sufficient studies on the relationship between property investments and profitability of insurance companies in Kenya. No study has been carried out on the insurance industry in Kenya to determine the

relationship between property investments and profitability. This study therefore seeks to fill this research gap by answering one research question: What is the relationship between property investments and the profitability of insurance companies in Kenya?

1.3 Research Objective

The objective of the study is to determine the relationship between property investments and the profitability of insurance companies in Kenya.

1.4 Value of the Study

This study would of value to different stakeholders. First, the findings would be beneficial to investment managers within the insurance industry as the outcome would guide them on the impact that property investments is having on the profitability of the company they work for and the insurance industry as a whole.

This study will also benefit the regulators who supervise and issue policy within the insurance industry. The authorities in Kenya mainly include the Insurance Regulatory Authority and the Retirements Benefits Authority. Currently, these authorities issue guidelines on portfolio management and stipulate minimum weights and maximum weights on specific asset classes from which insurance companies can invest in depending on whether it is a life or general insurance company. The results of this study will give further insight to the authorities on the ideal weight that property should hold in an insurance company's portfolio.

Prospective and current investors of insurance companies will also benefit from this study because they will be able to make informed decisions on the likelihood of profitability of the insurance company based on the weight that property investments take up in an insurance company's portfolio of assets.

Finally, this study will benefit future researchers in the Finance discipline who wish to study this topic further and generate new insights. The study will therefore be a reference source for future academicians to build their knowledge base upon.

CHAPTER TWO: LITERATURE REVIEW

2.1 Introduction

This chapter presents an in-depth review of the literature on property investments and profitability. First, a review of theories is presented which focus on property investments and profitability. Thereafter, the chapter presents an empirical review of both international and local studies that have been done on how property investments influence profitability. The determinants of profitability demonstrate how property investments affect profitability within the insurance industry.

2.2 Theoretical Review

Ingram (2004) states that insurance companies should separate the functions of managing insurance businesses and that of managing their investment portfolios supporting their reserves and capital. Investments in particular are a key function due to the impact it has on an insurer's balance sheet and overall profitability. The theories reviewed in this section will be based on the modern portfolio theory, the arbitrage pricing theory, the comparison approach theory and the income approach theory for property valuation.

2.2.1 Modern Portfolio Theory

The Modern Portfolio Theory (MPT) dates back to the research findings of Nobel laureate Harry Markowitz in 1952. Markowitz and successive researchers Jack Treynor and Nobel laureate William Sharpe, built a foundation on this area of study. The MPT analyzed rational portfolio choices based on the efficient use of risk and since then it has changed the way investment managers at large invest (Jorion, 1992). First, investment managers began to appreciate the significance of the portfolio perspective in attaining investment objectives. Second, MPT helped develop knowledge in the use of quantitative methods in the management of portfolios. Both quantitative and qualitative methods go hand in hand in investment management practice nowadays.

As Markowitz established the MPT, he only considered investment over a single period. Nobel laureate Robert Merton added more periods in his model in a bid to make the model more applicable in a real world setting. Markowitz MPT proposes that investors should allocate investments across different asset classes that do not 'move'

together and possess similar risk and return characteristics (Ferson, 2003). The MPT further suggests that investors who are risk averse in nature can maximize return for a given level of risk by investing in classes that have a low correlation with each other. It defines a portfolio as the weighted combination of assets and emphasizes that investors should make decisions on their portfolio based on the expected returns and the standard deviation.

Markowitz's findings were built on the expected returns rule which did not account for the need for diversification. Instead, his findings confirmed that the both risk and return are essential in signifying the benefits of diversification (Elton, 1995). No matter how attractive an asset may seem, a portfolio should not concentrate its asset weight on one type of asset. Diversification through investing in assets which possess different risk and return characteristics wipes away non-systematic risk from a portfolio.

2.2.2 Arbitrage Pricing Theory (APT)

The Arbitrage pricing theory (APT) is based on a similar foundation the Capital Asset Pricing Model (CAPM) but adds more risk factors which are considered to affect the expected return on the portfolio at a macroeconomic level. The APT was developed by Stephen Ross (1976) and suggests a linear relationship between expected return and the risk factors which are all measured by sensitivity to the portfolio. Dybvig (2003) notes that apart from the risk-free rate, the risk factors are allowed to vary from one asset to another and a no-arbitrage condition is used to evaluate the betas of the risk factors.

APT is not commonly used by investment managers in practice despite the fact that it is more theoretically sophisticated and superior compared to the CAPM. This is because it is difficult in practice to identify risk factors and compute betas for all the assets in a portfolio. Ross argues that if equilibrium prices offer no arbitrage opportunities over static portfolios of the assets, then the expected returns on the assets are approximately linearly related to the betas. The common ground between APT and CAPM is that both models assert a linear relationship between the asset's expected returns and its covariance with other variables (Dybvig 2003). Covariance here implies the risk which investors cannot avoid by diversification.

2.2.3 Comparison Approach Theory for Property Valuation

The comparison approach theory for property valuation states that property value is equivalent to value of other similar comparable properties in the same market (Fisher & MacGregor, 2012). The similarities between the comparable property and the property being valued should include the size, age, location, construction quality and amenities. Since it is not easy to get perfect comparisons, value adjustments should be made to make up for these differences from the property being valued (Bruggeman, 2011). The idea is to determine what the comparable would have sold for if they were like the subject property. Computing the price per square foot is often used as a good way to account for differences in size, however other measures of size are more appropriate in some cases, such as cubic feet for a number of units in an apartment building.

McCloud (1993) argues that the disadvantage of the comparison approach is that it relies on a reasonable number of comparable properties to be able to make a judgment on the value of the property. If the market has had few transactions over a recent period, it becomes difficult to use the comparison approach to value the subject property. If the market has had many transactions, it may still be difficult to find comparable properties for this valuation method to be useful. Secondly, the comparison approach assumes that investors are rational in behavior in that the prices they pay for the property are the current fair market values. This is however not always the case since the investment value to some investors might be more than that of other investors. Furthermore, for the Kenyan market in particular there has been a trend where some investors do not portray rational behaviour through paying amounts that are far in excess of the market value of the property.

2.2.4 Income Approach Theory for Property Valuation

The income approach considers what price an investor would pay based on an expected rate of return that is commensurate with the risk of the investment. Fisher (2012) notes that the property value estimated with this approach is essentially the present value of the expected future income from the property, including proceeds from resale at the end of a typical investment holding period. The concept is that value depends on the expected rate of return that investors would require to invest in the property.

The direct capitalization method and discounted cash flow method (DCF) are two income approaches used to appraise a commercial income-producing property. Lennhoff, (2011) argues that the direct capitalization method estimates the value of an income-producing property based on the level and quality of its net operating income. The DCF method discounts future projected cash flows to arrive at a present value of the property. Net operating income, a measure of income and a proxy for cash flow, is a focus of both approaches.

2.3 Determinants of Profitability of Insurance Companies

This section reviews three key determinants that are perceived to affect the profitability of insurance companies in Kenya.

2.3.1 Property Investments

The gains from property investments contribute to the overall investment income of an insurance company. Investment income is one of the two major components which contribute to the overall profit before tax on the income statement of an insurance company with underwriting profit from insurance operations being the other. During periods of low underwriting margin performances, it is essential that the investment income generated through property and other asset classes are sufficient to make up for the underwriting losses for insurance companies. Birkinsha (1967) notes that insurance companies with large asset bases report more investment income, gains through property investments and as a result a higher amount of PBT compared to smaller firms. Investment income for these larger firms takes up a larger portion of the overall profits compared to underwriting profits which are generated purely through insurance business.

2.3.2 Claims Loss Ratio

One of the major factors that affect the profitability of insurance companies is the claims loss ratio. Desrosiers (2012) defines the claims loss ratio as the amount of claims that an insurer has incurred in its books over a specified period of time divided by the premium that it has earned over the same period of time. Hurlimann (2009) notes that when insurance products are not adequately priced to account for the risks that it is exposed to, this will result a higher claims loss ratio which in turn reduces the underwriting and profit margins for the insurance company. Insurance companies must therefore be vigilant of their pricing methodologies and framework in place which ensures a

sustainable claims loss ratio is experienced each financial year. The IRA (2014) notes that the claims loss ratio experienced within the Kenyan insurance industry has averaged 59% from 2009 to 2014 and has particularly been worse within the motor and medical classes of insurance.

2.3.3 Operational Expenses

Management and commission expenses are the two main cost classifications which have a direct impact on the profitability of insurance companies aside from the claims cost. Operational costs are typically performance measured as a ratio of expenses to the gross written premium revenue that an insurance company writes in a given period. Schum (2014) notes that the expense ratio is a key indicator of the quality and performance delivery of the top management within an organization. The IRA (2014) notes that the expense ratio experienced within the insurance industry in Kenya has averaged 32% from 2010 to 2014 and has particularly been the highest within the motor and medical classes of insurance. Inclusive of the claims loss ratio, this has given rise to a combined ratio of about 91% experienced within the insurance industry in Kenya over the given period. The detection and prevention of fraud within the insurance industry is also a key element in the effective management of operational expenses. Herbling (2014) notes that fraud cases reported the regulator having been on a decreasing trend in recent years, however there are still surging fraud cases which are affecting several insurers in Kenya resulting in alarming losses for some companies primarily in the medical and motor classes.

2.4 Empirical Review

This section reviews the studies that have been carried out by scholars and researchers in the field of property investments and the profitability of insurance companies.

2.4.1 International Evidence

A study by Malik (2011) found that there exists a positive and significant relationship between tangibility of assets and profitability of insurance companies and argued that the highest the level of fixed assets inclusive of property investments the higher the profitability. In contrast to this, Li (2007) in UK found no significant relationship between investment assets and profitability of insurance companies. Investment in property is the most significant alternative asset class in the portfolio of institutional

investors portfolio primarily due to its steady and predictable appreciation overtime, it's low correlation with other assets classes, it's strong risk adjusted performance in comparison to equities and bonds and its inflation hedging capabilities. Insurance companies have shifted their focus to new sets of asset classes for better performances to achieve growth in their investment portfolio. Property investments have increasingly become competitive and most firms are diversifying their portfolios to properties to increase their incomes. Property investments has been viewed as an important asset for insurance companies due to its investment characteristics of high quality, income producing, and its low risk and portfolio diversification benefits. Investment in property has been shown to reduce risk; enhance returns; act as a hedge for inflation and deliver strong cash flows to the investor (Fabozzi, Gordon and Hudson-Wilson, 2003).

Naveed (2011) investigated the impact of firm level characteristics on performance of the life insurance sector of Pakistan over the period of seven years. For this purpose, size, profitability, age, risk, growth and tangibility are selected as explanatory variables. The results of Ordinary Least Square (OLS) regression analysis revealed that leverage in terms of their investment portfolio was one of the main determinants of performance of life insurance sector. Other researchers include Bocchialini (2013) who analyzed Italian insurance company's funds to determine whether there was any relationship between diversification of property portfolios and increase in total assets. The results showed that a positive relationship between the two variables.

Andonov (2012) conducted an examination of pension fund in insurance company's investments in property in U.S, Canadian, European, and Australian/New Zealand companies which invest in direct real estate and real estate investment trusts (REITs) over the period 1990-2009. The study observed that the costs and performance of insurance company's real investments were driven by three main variables: size, the choice to invest internally or externally, and geography. They found out that insurance companies were more likely to invest in property internally and in their investment portfolio has lower costs and higher net returns

2.4.2 Local Evidence

Mwangi (2013) studied the relationship between underwriting profit and investment income using 12 years of industry data from 2000 to 2011 for the non-life insurers in Kenya. There results showed a low relationship between the underwriting profit and the

investment income within this industry segment. Admitted assets were used to calculate the investment return and it came out that the returns were positive for both the investment portfolio and underwriting portfolio. Underwriting took 20% of the total income before tax with investment income being 80% of the total income before tax. Insurers are supposed to generate surplus from the risk underwriting portfolio for their risk transfer to be a viable business. Investment income on the other hand should supplement the underwriting portfolio surplus. However, the findings showed that insurers focused more on the investment income and forgot about underwriting profit leading to a low correlation which is a risk to the insurance industry. Adequate pricing of the risks underwritten leads to the high underwriting profits that provide innovations to have a trend of high underwriting profits. The growth of insurance companies depends on the efficient and effective risk transfer mechanism thus the low correlation of the underwriting profit and selected variables validates the inefficiency. On the other hand also, the high correlation of investment income with other variables indicates dependency in the investment income so as to maximize shareholders wealth.

Ojiambo (2014) studied the effect of property mortgage loans on the financial performance of commercial banks in Kenya using 5 years of industry data. The model explained 59% of variance in financial performance thus the model was effective enough in the explanation of how the property mortgage loans influence the financial performance of the listed commercial banks in Kenya. The findings showed that mortgage loans had strong negative effect on the financial performance of the listed banks. Also through the study, the capital adequacy had a weak negative effect on the financial performance of the banks. The cost of operations on the other hand had a strong positive effect on the performance while the foreign ownership had a weak effect. Liquidity had a strong negative effect on the performance, inflation rate also was found to have a weak negative effect on the performance and lastly, bank size had a weak negative effect on the financial performance. There was examination of effects of mortgage loans and found out that mortgage loans had strong effect which led to the conclusion that mortgage loans influence financial performance. The capital adequacy effect had a weak negative effect and it does not affect the financial performance.

Auma (2013) studied the relationship between portfolio holdings and financial performance of insurance companies in Kenya. From the study it was established that

portfolio allocation to equity shares had been on a declining trend over the set study period from 2003 to 2010. The study also showed that the insurance industry allocated 28.49% of their portfolio to government securities investments which decreased by 2006 there after a slight increase was noted in 2008 before a sharp decrease in 2009. In 2010, the industry invested 26.42% of its portfolio in government securities which increased in 2011 and later decreased in 2012. For real estate there was a decreasing trend over the period from 2003 and the insurance industry invested 26.59% of the assets which decreased sharply in 2004 then further in 2005. In 2006, the industry invested 5.26% of total assets in real estate assets which decreased in 2007 but latter increased the percentage of total assets invested in real estate over the next 2 years. For bank deposits, the industry invested 7.53% of the total assets in bank deposit that increased by 2006 then reduced slightly in 2007 before increasing in 2008 which was the highest percentage of total assets invested in the study period. Lastly, in the overall profitability of insurance industry as at 2003 was Kshs 2.9 billion which reduced in 2004 and by 2007 it had increased. The overall profitability decreased over the following 2 years and at last increased by end of December 2012. The main objective was to establish the relationship between portfolio holdings and the financial performance of the insurance companies in Kenya and it was concluded that there is a strong and positive relationship in the overall profitability increased over study period and it was affected by the choice of portfolio allocations made. There was also an inverse relationship between investment in equity shares and the overall profitability in the industry. For the government security investment, it concludes that it has a positive impact on the overall profitability of the insurance industry. Lastly, investment in real estate had a positive relationship with the overall profitability within the insurance industry.

Kaaria (2003) observed the way in which pension schemes in Kenya construct their investment portfolios and manage their performance. He studied how the factors changed before and after the construction of the property portfolios, what procedures were in place to monitor the performance and whether rebalancing of the portfolios was done in an objective or subjective manner. Recommendations were made that would narrow the gap between how other traditional securities such as equities and fixed income are managed and invested within the pension scheme portfolio. Primary research was used for this study in the form interviewing and issuing questionnaires to both in-house and outsourced investment managers of pension schemes. The results of

this study showed that property investments were not over invested in and the allocation on the overall portfolio to property was sustainable and fair. Investment managers were also evidenced to be following objective procedures which were in place in how performance of pension scheme investments were carried out although at a weak level within the property asset class. Signs of political pressure came into play as well since the results showed that pension schemes belonging to parastatals and public institutions experience over investment in the property asset class. It was recommended that the services of pension scheme investment management are better off outsourced to specialist firms due to the gap shown in which the property investments did not have adequate procedures in place for effective management.

2.5 Summary of the Literature Review

This chapter reviewed the literature on the relationship between property investments and profitability of insurance companies in Kenya. Naveed (2003) investigated the impact of firm level characteristics on performance of the life insurance sector of Pakistan and did not consider property investments as one of his factors. Andonov (2012) conducted an examination of pension fund in insurance company's investments in property in developed countries of North American and European companies, but did not include the portfolio investments from non-life insurance companies. Mwangi (2013) studied the relationship between underwriting profit and investment income for the non-life insurers in Kenya. Ojiambo (2014) studied the effect of property mortgage loans on the financial performance of commercial banks in Kenya, and did not consider the property investments made by the commercial banks themselves. Auma (2013) studied the relationship between portfolio holdings and financial performance of insurance companies in Kenya which broadly covered all asset classes in the portfolio without any particular focus on property investments. Kaaria (2003) observed the way in which pension schemes in Kenya construct their investment portfolios and manage their performance across all asset classes. There is however no study that has examined the relationship between property investments and profitability of insurance companies in Kenya. This study therefore seeked to fill this research gap.

CHAPTER THREE: RESEARCH METHODOLOGY

3.1 Introduction

This chapter explains the research methods that were used to carry out the study. It encompasses the research design, target population, sampling design and data collection that was used to base conclusions regarding the relationship between property investments and profitability of insurance companies in Kenya.

3.2 Research Design

The study adopted a descriptive research design and endeavored to describe the subject at hand by categorizing a group of problems or events through data collection and analysis of data in an effort to combine relevance to the purpose of the research.

This method of research is more comprehensive compared to explanatory research since it goes further to describe the data and characteristics, evaluates what percentage of the target population of all insurance companies in Kenya is relevant to the data and predicts future demand. Descriptive research design studies frequencies, averages and other statistical key metrics in an effort to make the researcher to comprehend the topic better by studying the historical data to better predict the future.

3.3 Population

The population of the study consisted of all insurance companies in Kenya as at 31st December 2014. According to the Insurance Regulatory Authority, there were 49 licensed insurance companies in Kenya in 2014 which are life, general and composite insurers in nature. A census study on all 49 insurance companies was carried out because the target population size was small. This study covered a period of 5 years starting from 2010 to 2014.

3.4 Data Collection

Secondary data was used for this study and was obtained from the IRA, AKI and insurance company websites. IRA and AKI both publish annual industry reports on their websites, whereas insurance companies post their financials on their official websites. Data was sourced from both income statements and balance sheets to measure asset portfolio weights and profitability ratios of all the insurance companies.

Data on profitability was further obtained from the audited income statements for all insurance companies published on the IRA and AKI websites. Data on the amount of property investments, the claims loss ratio control variable and the operational expenses control variable was also be obtained from the audited balance sheets and income statements published on the IRA and AKI websites.

3.5 Data Analysis

The aim of this study was to discover the relationship between property investments and the profitability of insurance companies in Kenya. The study used the following linear regression model to determine this relationship:

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

Where:

Y = Profitability (measured using ROE)

X1 = Property investments (measured as a percentage of the total assets)

X2 and X3 are the research control variables which represent:

X2 = Claims loss ratio (measured as a percentage of net claims to net earned premium)

X3 = Operational expenses (measured as a percentage of the net earned premium)

ε = the error term

An analysis of variance (ANOVA) was used to test the strength of the relationship between property investments and profitability. A 5% level of significance was used for this model. If the significance number obtained was less than the critical value (α) obtained through an F-Table, then the conclusion was that the model is significant in explaining the relationship between property investments and profitability.

Statistical Package for the Social Sciences (SPSS) was used for analysis and presentation due to its ability to cover a wide range of options, superior output organization and its effective way in how it manages data. The Y value will be the average for the 5 year period, 2010 to 2014 obtained from secondary data through the IRA and AKI.

CHAPTER FOUR: DATA ANALYSIS, RESULTS AND DISCUSSION

4.1 Introduction

This chapter presents analysis and findings of the study as set out in the research objectives and methodology. The study findings are presented on the relationship between property investments and profitability of insurance companies in Kenya. The data was gathered exclusively from the secondary source which included the Insurance Regulatory Authority and the Association of Kenya Insurers.

4.2 Data Presentation

This section presents the descriptive findings of this study, measures of central tendency, the trends analysis including the trend of property investments as a percentage of total assets, claims loss ratio and expense ratio.

4.2.1 Descriptive Statistics

Table 4.1 shows the summary of descriptive analysis results for all the variables in the study in terms of the mean scores, the median, the standard deviation and the number of observations.

Table 4.1: Descriptive Statistics

Return on Equity (ROE)		Property / Total Assets Ratio		Claims Loss Ratio		Expense Ratio	
Mean	16.0%	Mean	15.6%	Mean	77.6%	Mean	65.0%
Median	18.0%	Median	13.8%	Median	64.9%	Median	52.3%
Std. Dev	29.9%	Std. Dev	12.0%	Std. Dev	43.8%	Std. Dev	50.1%
Count	194	Count	194	Count	194	Count	194

Source: Research Findings

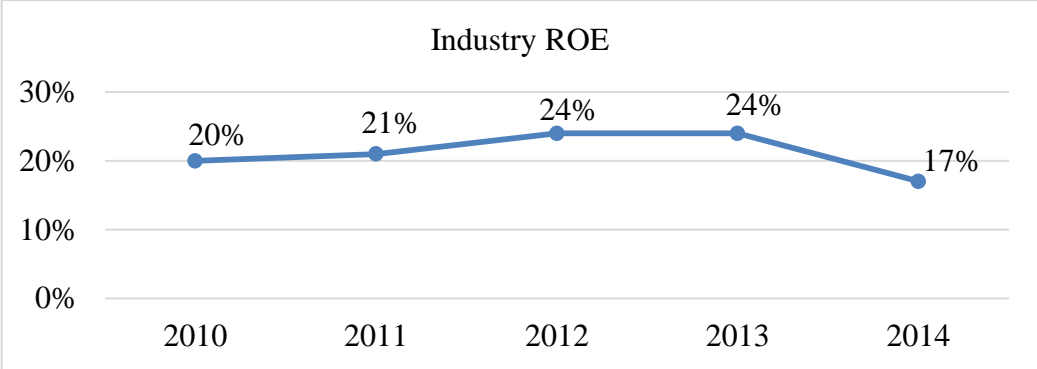
Data for the above table 4.1 was collected from the revenue accounts and balance sheets posted on the AKI and IRA websites for all registered insurance companies in Kenya. The number of registered insurance companies from year to year varied from 45 to 49 and outlier cases were excluded from the data set. This resulted in a total of 194 observations across the 5 year period that were used in the study for analysis. The average profitability as measured by ROE was 16.0% with a standard deviation of

29.9%. The average ratio of property investments to total assets was 15.6% with a smaller standard deviation of 12.0% showing the stability of the ratio over the period.

4.2.2 Average Trend Analysis

The trend of the weighted average ROE experienced in the Kenyan insurance industry from 2010 to 2014 in Figure 4.1 shows that it increased from 20% in 2010 to a high of 24% in 2013 and then fell significantly to a 5 year low of 17% in 2014.

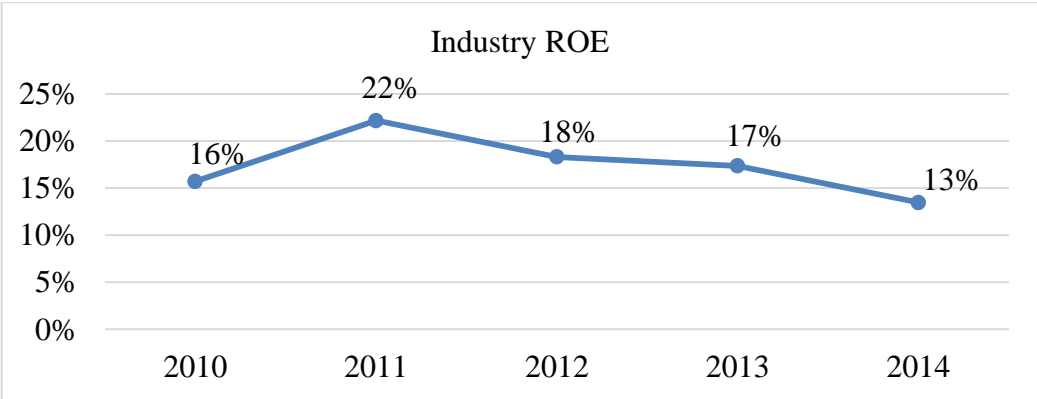
Figure 4.1 Weighted Average ROE trend



Source: Research Findings

The trend of the arithmetic average ROE experienced in the Kenyan insurance industry from 2010 to 2014 in Figure 4.2 was significantly lower than the weighted averages in figure 4.1 except for the year 2011. The ROE in each year has also been on a declining trend from 2011 to 2014 which reaffirms that profitability in the insurance industry has been on a declining trend.

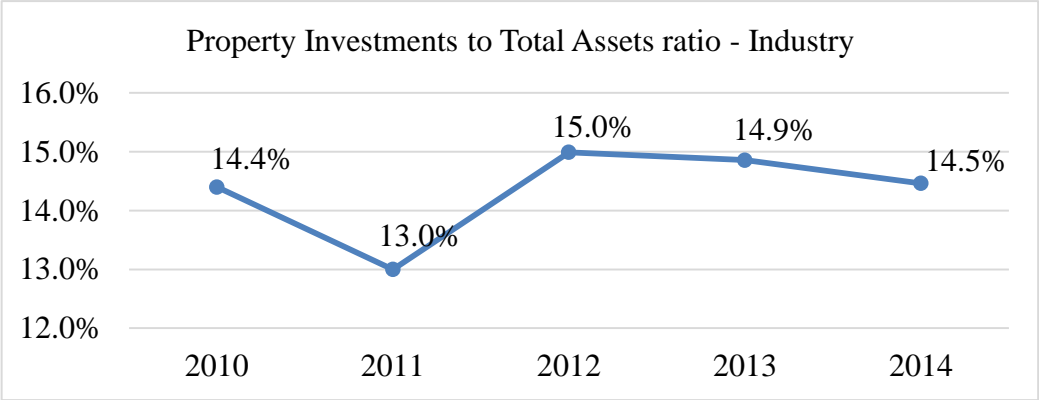
Figure 4.2 Arithmetic Average ROE trend



Source: Research Findings

The trend of the weighted average of the ratio of Property Investments to Total Assets experienced in the Kenyan insurance industry from 2010 to 2014 in Figure 4.3 shows that it remained stable between 13% and 15% across the 5 years with 2011 being the lowest ratio and 2012 the highest ratio.

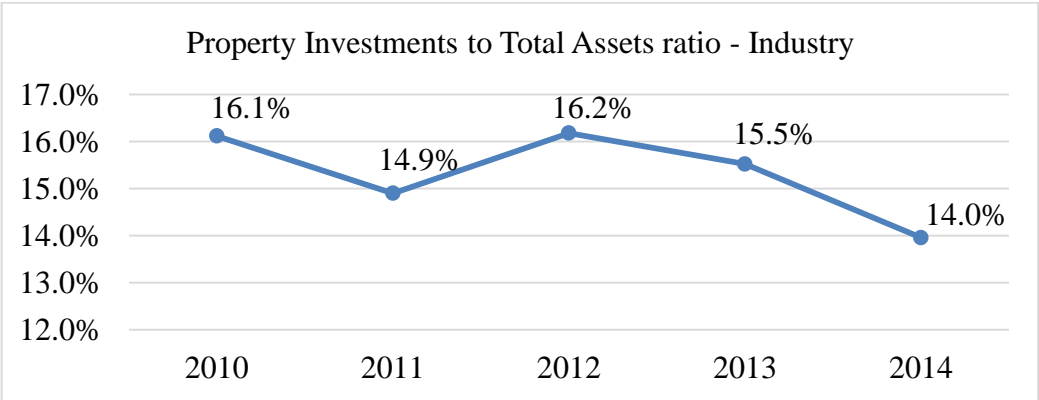
Figure 4.3 Weighted Average ratio of Property Investments to Total Assets



Source: Research Findings

The trend of the arithmetic average of the ratio of Property Investments to Total Assets experienced in the Kenyan insurance industry from 2010 to 2014 in Figure 4.4 shows that it has been on a declining trend from 16.1% in 2010 to 14.0% in 2014.

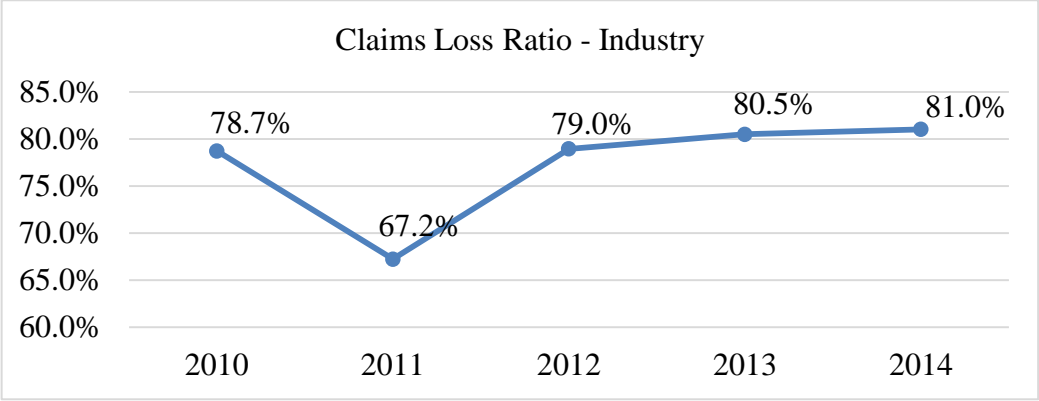
Figure 4.4 Arithmetic Average ratio of Property Investments to Total Assets



Source: Research Findings

The trend of the weighted average Claims Loss ratio experienced in the Kenyan insurance industry from 2010 to 2014 in Figure 4.5 shows that it has been marginally increasing from a low of 67.2% in 2011 to a high of 81.0% in 2014.

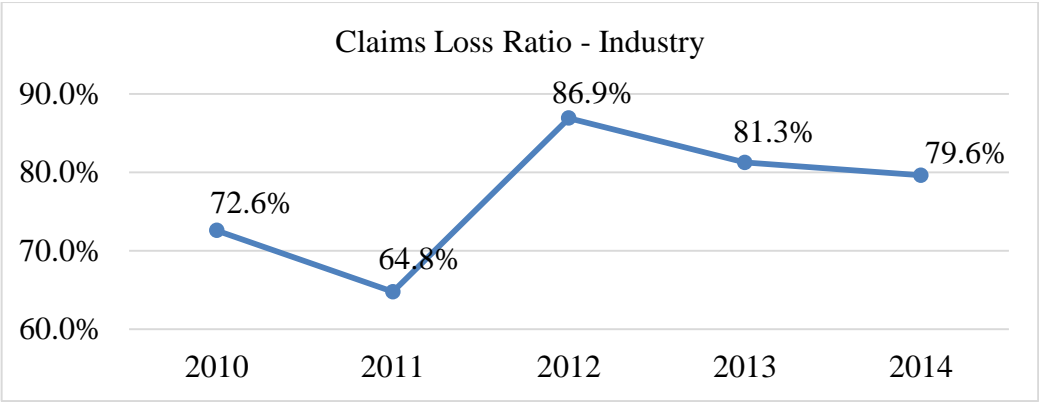
Figure 4.5 Weighted Average Claims Loss Ratio trend



Source: Research Findings

The trend of the arithmetic average Claims Loss ratio experienced in the Kenyan insurance industry from 2010 to 2014 in Figure 4.6 shows that it was significantly lower in 2010 and 2011 before spiking in 2012 to 86.9% and gradually decreasing in the subsequent two years to 79.6% in 2014.

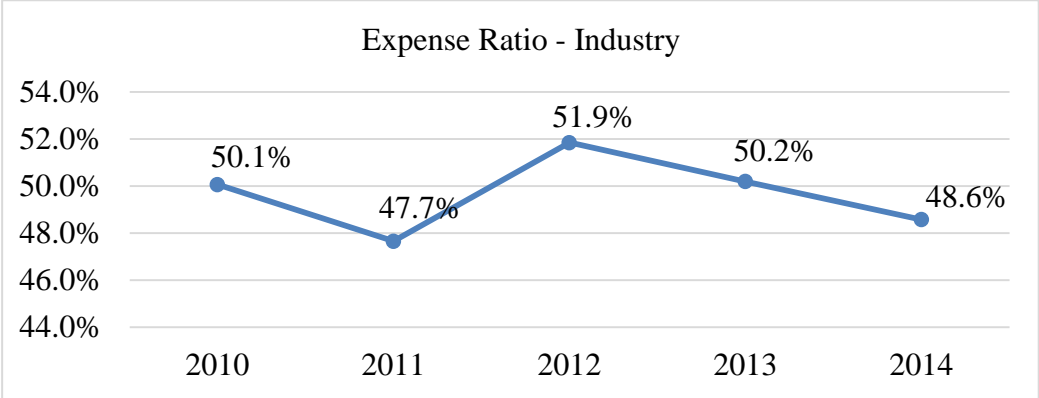
Figure 4.6 Arithmetic Average Claims Loss Ratio trend



Source: Research Findings

The trend of the weighted average Expense ratio experienced in the Kenyan insurance industry from 2010 to 2014 in Figure 4.7 shows that it was stable and between 47.7% and 51.9% across the 5 years with 2011 the lowest year and 2012 the highest year.

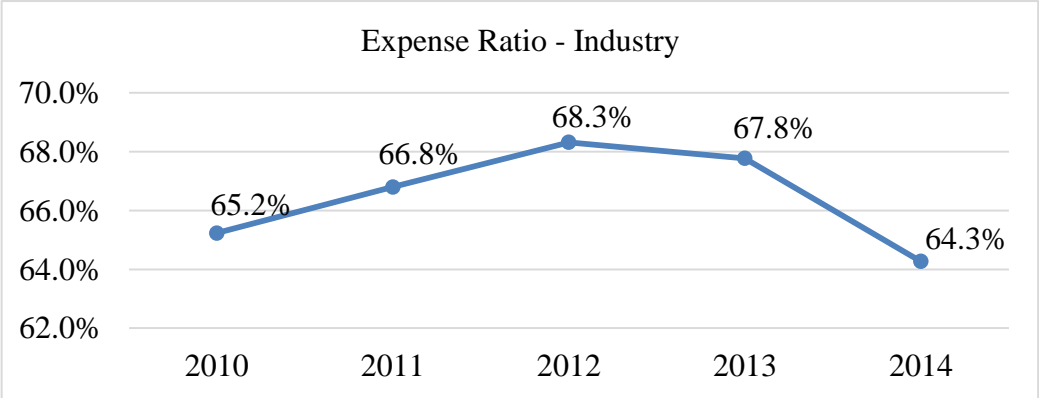
Figure 4.7 Weighted Average Expense Ratio trend



Source: Research Findings

The trend of the weighted average Expense ratio experienced in the Kenyan insurance industry from 2010 to 2014 in Figure 4.8 shows that it was more than 15% higher than the weighted average expense ratio across the 5 years. This is due to the large outliers in some of the insurance companies where expense ratios were particularly high and this affected the arithmetic means. The weighted average therefore gives a better indication of the true picture of the industry expense ratio.

Figure 4.8 Arithmetic Average Expense Ratio trend



Source: Research Findings

4.3 Correlations

Table 4.2 shows the results of correlation analysis on three independent variables used in the study. This analysis was conducted to test how the three independent variables were related to each other in order to determine whether multicollinearity exists.

Table 4.2: Correlation Matrix

	Property / Total Assets Ratio	Claims Loss Ratio	Expense Ratio
Property / Total Assets Ratio	1		
Claims Loss Ratio	-0.081	1	
Expense Ratio	-0.213	0.230	1

The results in Table 4.2 show that there is a weak negative correlation between the claims loss ratio and the ratio of property investments to total assets. On the other hand it shows a relatively weak negative correlation between the expense ratio and the ratio of property investments to total assets. Lastly, Table 4.2 also shows a relatively weak positive correlation between the expense ratio and the claims loss ratio. Overall, this means that there is weak evidence of multicollinearity between the independent variables which is an ideal situation for proceeding directly to use multiple linear regression analysis and there is no need for model improvement measure such as first differencing.

4.4 Regression Analysis

Table 4.3 shows the regression summary on the analysis conducted on the 194 observations across the 5 year data set. The table shows the R-square, F-statistic, coefficients, the standard errors, the t-statistics, the p-values and the 95% confidence intervals of the coefficients.

Table 4.3: Regression Statistics

Multiple R	0.485
R Square	0.236
Adjusted R Square	0.224
Standard Error	0.264
Observations	194

ANOVA

	df	SS	MS	F	Significance F
Regression	3	4.077	1.359	19.529	4.439E-11
Residual	190	13.220	0.070		
Total	193	17.297			

	Coefficients	Standard Error	t Stat	P-value	Lower 95%	Upper 95%
Intercept	0.378	0.053	7.163	1.69052E-11	0.274	0.482
X1	0.267	0.162	1.651	0.100327712	-0.052	0.585
X2	-0.174	0.045	-3.906	0.000130472	-0.262	-0.086
X3	-0.191	0.040	-4.819	2.94734E-06	-0.270	-0.113

Table 4.3 shows a positive relationship between the ratio of property investments to total assets and the profitability as measured by ROE for insurance companies in Kenya over the 5 year period. This positive effect was significant at the 10% level, $\beta = 0.267$, $p = 0.100$ but not significant at the 5% level. The results also show that the claims loss ratio had a negative effect on the profitability as measured by ROE. This effect was significant at 5% level, $\beta = -0.174$, $p = 0.000130$. The table further shows that the expense ratio had a negative effect on the profitability of insurance companies in Kenya. This effect was significant at 5% level, $\beta = -0.191$, $p = 2.947E-06$. The R^2 value shows that the model explained only 23.6% of the variance in the profitability of insurance companies in Kenya implying a relatively weak predictive power in the model. The F -statistic was 19.529 and significant at 5% level, $p = 4.439E-11$.

The multiple regression model for this study was of the form:

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

Which became:

$$Y = 0.378 - 0.174X_2 - 0.191X_3 + \varepsilon$$

The independent variable X_1 which represents the ratio of property investments to total assets was therefore removed from the model because it was not significant at the 5% level.

4.5 Interpretation of Findings

The study examined the relationship between property investments and the profitability of insurance companies in Kenya. Property investments was the main independent variable in the study and the results showed that property investments had a positive effect on the profitability of insurance companies in Kenya. A unit increase in the ratio of property investments to total assets led to a 0.267 unit increase in the profitability

of insurance companies in Kenya. However, property investments as an independent variable was not significant at a 5% level and was only significant at a 10% level. It was therefore excluded as an independent variable that affects profitability of insurance companies in Kenya and this is consistent with the findings of Malik (2011). The standard deviation for property investments as a percentage of total assets (X1) was 12.0% which was the lowest amongst all three independent variables. This was a positive attribute as it showed how stable the variable has been over 194 data points across the 5 years. There was also a slight difference between the weighted average and the arithmetic average trend in the ratio of property investments to total assets. The spread between the two measures of average was about 1% over the 5 years which shows a negligible difference in characteristics between large and small insurance companies in the X1 independent variable.

The study also examined the effect of the claims loss ratio as a control variable on the profitability of insurance companies in Kenya. The results also showed that the claims loss ratio had a negative effect on the profitability of insurance companies. A unit increase in the claims loss ratio led to a 0.174 unit decrease in the profitability of insurance companies in Kenya and this control variable was significant at a 5% level. This is consistent with the findings of Hurlimann (2011). The standard deviation for the claims loss ratio (X2) was 43.8% which was much higher than the X1 variable and was a negative attribute as it showed how spread the variable has been over 194 data points across the 5 years. There was also a slight difference between the weighted average and the arithmetic average trend in the claims loss ratio. The spread between the two measures of average was about 3% over the 5 years which shows a moderate difference in characteristics between large and small insurance companies in the X2 independent variable.

The study further examined the effect of the expense ratio as another control variable on the profitability of insurance companies in Kenya. The results also showed that the expense ratio also had a negative effect on the profitability of insurance companies. A unit increase in the claims loss ratio led to a 0.191 unit decrease in the profitability of insurance companies in Kenya and this control variable was significant at a 5% level. This is consistent with the findings of Schum (2014). The standard deviation for the claims loss ratio (X3) was 50.1% which was much higher than the X1 and X2

variable and was also a negative attribute as it showed how spread the variable has been over 194 data points across the 5 years. There was also a large difference between the weighted average and the arithmetic average trend in the expense ratio. The spread between the two measures of average was about 15% over the 5 years which shows a large difference in characteristics between large and small insurance companies in the X3 independent variable.

The regression model had an R^2 of 0.236 which shows the model explained only 23.6% of the variance in the profitability of insurance companies in Kenya implying a relatively weak predictive power in the model. The F -statistic was 19.529 and was significant at 5% level. This demonstrates that there was independence between the three variables in the model and that multicollinearity did not exist. The 95% confidence interval for the X1 independent variable had zero within the lower and upper limit which shows that a 0% ratio was a plausible value for any insurance company for this variable. The y-intercept value was 0.378 which shows that when all three independent variables are zero, then the ROE would be 37.8%. This is however not plausible since the effect of the claims ratio and the expense ratio are both negative as shown by the confidence intervals for both the X2 and X3 variables which are strictly negative between the lower and upper bounds. There was also a slight difference between the weighted average and the arithmetic average trend in the ROE. The spread between the two measures of average was about 4% over the 5 years which shows the difference in characteristics between large and small insurance companies in ROE.

CHAPTER FIVE:

SUMMARY, CONCLUSION AND RECOMMENDATIONS

5.1 Summary

The objective of this study was to establish the relationship between property investments and the profitability of insurance companies in Kenya between 2010 and 2014. The results were analyzed using descriptive statistics and the relationships between three independent variables were investigated using correlation analysis, measures of central tendency and the trends analysis. The analysis of descriptive statistics showed that the arithmetic mean over the 5 year period for the ROE was 16.0%, the mean of the ratio of property investments was 15.6%, the mean of the claims loss ratio was 77.6% and the mean of the expense ratio was 65.0% over the same period.

The analysis of the industry trends showed that the weighted average ROE increased from 20% in 2010 to a high of 24% in 2013 and then fell significantly to a 5 year low of 17% in 2014. The trend of the arithmetic average ROE was significantly lower than the weighted average ROE except for the year 2011. The ROE in each year has also been on a declining trend from 2011 to 2014 which reaffirms that profitability in the insurance industry has been on a declining trend. The trend of the weighted average of the ratio of Property Investments to Total Assets remained stable between 13% and 15% across the 5 years with 2011 being the lowest ratio and 2012 the highest ratio. The trend of the arithmetic average of the ratio of Property Investments to Total Assets was on a declining trend from 16.1% in 2010 to 14.0% in 2014. The trend of the weighted average Claims Loss ratio was marginally increasing from a low of 67.2% in 2011 to a high of 81.0% in 2014. The trend of the arithmetic average Claims Loss ratio was significantly lower in 2010 and 2011 before spiking in 2012 to 86.9% and gradually decreasing in the subsequent two years to 79.6% in 2014. The trend of the weighted average Expense ratio was stable and between 47.7% and 51.9% across the 5 years with 2011 the lowest year and 2012 the highest year. The trend of the weighted average Expense ratio was more than 15% higher than the weighted average expense ratio across the 5 years. This is due to the large outliers in some of the insurance companies where expense ratios were particularly high and this affected the arithmetic means. The weighted average therefore gives a better indication of the true picture of the industry expense ratio.

5.2 Conclusions

A 5% level of significance was used and the F-statistic computed was 19.529 which confirmed that multicollinearity does not exist between the three independent variables and therefore the multiple regression model was a suitable model for explaining how the independent variables influenced the profitability of insurance companies. The study concluded that there was a positive relationship between the ratio of property investments to total assets and the profitability as measured by ROE for insurance companies in Kenya over the 5 year period. This positive effect was significant at the 10% level, $\beta = 0.267$, $p = 0.100$ but not significant at the 5% level. The study also concluded that the claims loss ratio had a negative effect on the profitability as measured by ROE and this effect was significant at 5% level, $\beta = -0.174$, $p = 0.000130$. The study further concluded that the expense ratio had a negative effect on the profitability of insurance companies in Kenya and this effect was significant at 5% level, $\beta = -0.191$, $p = 2.947E-06$. The R^2 value showed that the model explained only 23.6% of the variance in the profitability of insurance companies in Kenya implying a relatively weak predictive power in the model. The independent variable X1 which represents the ratio of property investments to total assets was therefore removed from the model because it failed the 5% significance level test.

Property investments was the main independent variable in the study and the results showed that a unit increase in the ratio of property investments to total assets led to a 0.267 unit increase in the profitability of insurance companies in Kenya. However, since property investments was not significant at a 5% level and was only significant at a 10% level, the variable was excluded from the model. The study also concluded that a unit increase in the claims loss ratio led to a 0.174 unit decrease in the profitability of insurance companies in Kenya and this control variable was significant at a 5% level. The study further concluded a unit increase in the claims loss ratio led to a 0.191 unit decrease in the profitability of insurance companies in Kenya and this control variable was significant at a 5% level.

5.3 Policy Recommendations

The study recommends that the IRA more closely monitors and regulates the key fundamental determinants of profitability of insurance companies in Kenya which are the claims loss ratio and the expense ratio which this study has shown to be very

significant factors. The IRA should impose penalties or caveats on insurance companies which deviate too far from the industry average ratios because policyholders are at risk when mismanagement of these key ratios lead to soaring losses of insurance companies and insolvency risk in the long run.

The senior management of insurance companies are mainly responsible for the delivery of a stable and sustainable claims loss ratio and expense ratio from the pricing and spending decisions that they make on behalf of shareholders. The IRA should be vigilant, set guidelines and impose tight requirements on senior management of insurance companies to continue in office when these two key ratios deviate by large margins from the industry average ratios for a long period of time such as two consecutive years. This way, the industry players that actively practice price undercutting leading to soaring claims loss ratios will be better regulated since the top management accountable for continued poor financial performances will be more answerable to the regulation of managing their claims ratios more tightly. The same principle can be applied to the expense ratio which the regulator can impose an industry benchmark and impose penalties and sanctions on companies who mismanage their expense ratios on consecutive years.

New policies on the ratio of property investments to the total assets of insurance companies can also be imposed to control volatility of the asset mix. The study showed that this ratio has been stable and between 13% and 16% over the last 5 years and this stability should be maintained. The recommended policy should therefore control the deviation from the industry portfolio weight in property investments such that those companies who are more than 10% above or below should be made to reallocate accordingly to come within 10% of the industry average ratio. This will ensure a healthy and sustainable asset mix for the industry as a whole and control cash liquidity since property is a relatively illiquid asset to hold. The companies which currently hold more than 30% of their total assets in property should be made to reduce this asset allocation because of liquidity risk concerns. On the other hand, since the study showed that property positively affects profitability of insurance companies at a 10% level of significance, the IRA should still encourage investments in property since it has a much lower downside risk compared to quoted shares and other more risky asset classes. A minimum asset allocation of 5% and a maximum asset allocation of 25% should

therefore be recommended as a policy from the IRA for property investments within the insurance industry with those outside this range facing penalties for placing their stakeholders at more risk than they ought to be in.

These recommended policies will not only benefit the policyholders of the insurance companies by ensuring the safety of the liabilities the insurance companies hold, but the policies shall also benefit the shareholders and employees of the insurance companies since sustained profitability secures the existence of the companies they invest in and work for in the long run. Profitability of insurance companies also creates more jobs within the insurance industry, creates opportunities for existing employees to grow in their careers and benefits the economy as a whole.

5.4 Limitations of the Study

The main limitation of the study was that secondary data from the IRA and AKI websites was available for the last 5 years, but not the last 10 years. The secondary data obtained from these websites prior to the year 2010 did not show a detailed balance sheet and revenue account breakdown where the researcher could identify the property investments as a percentage of total assets, the claims loss ratio and the expense ratios for each insurance company in Kenya prior to the year 2010. A 5 year study was therefore the longest study period that could have been used for this particular study with the available secondary data sources.

It would have also been more insightful to have a full breakdown of the type of property investments to understand the property asset mix at a deeper level. Some insurance companies concentrate their property investments in commercial property, whereas others are more skewed towards residential property and rural land. This level of breakdown is not available on the financial statements that are availed to the public through the IRA and AKI websites and therefore this was a limitation.

The data had a few outlier companies whose financial ratios were questionable and distorted the quality of the data. These few cases had to be removed from the data set as they were questionable.

Finally, the unique characteristics that distinguish life and general insurance companies was a limitation because the life companies tended to have loss ratios that were much

higher than the general companies and this affected the model results.

5.5 Suggestions for Further Studies

The data analyzed in this study showed that the line of business which the insurance company specializes in was a significant determinant of profitability. Companies that specialize in life insurance had significantly lower profitability compared to companies that specialize in general insurance. The segregation of these two lines of business therefore needs to be incorporated in future studies as this would enhance the predictive power of the model. Further, it was also noted that medical insurers experience lower ROEs and therefore the segregation by line of business should be done three ways and the use of dummy variables would help best to track the three lines.

The incorporation of company size as a determinant of profitability is also suggested for future studies since larger companies are better able to benefit from economies of scale and are able to use technology and synergies to enhance their ROE and minimize their expense ratios much more efficiently than smaller companies. The segregation into large, medium and small sized companies is suggested and can be tracked using dummy variables as well. This would isolate the added advantages that large companies have over the smaller ones in efficiency and maximizing profitability. The R^2 of the model would also be improved which implies a better predictability of the profitability of insurance companies.

The stock market performance in any given year also strongly affects the investment income performance of insurance companies and in turn affects the profitability. When the stock market performs well, insurance companies that have high exposure generate higher ROEs for that given year. The stock market is a relatively volatile market which experiences large swings in price movements over a given year. This impacts the ROE of insurance companies significantly and is therefore a suggested factor to incorporate in future studies to enhance the strength of the model and improve upon its R^2 .

Future studies should also extend the study period from 5 years to 10 years to increase the data set and gaining better insight on the trends of the ROE and the key determinants of profitability at hand.

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APPENDICES

Appendix I: List of Insurance Companies in Kenya

1	AAR
2	AIG
3	Amaco
4	APA Insurance
5	APA Life
6	Britam
7	Britam General (formerly Real Insurance)
8	Cannon
9	Capex Life
10	CIC General
11	CIC Life
12	Corporate
13	Directline
14	Fidelity Shield
15	First Assurance
16	GA Insurance
17	GA Life
18	Gateway
19	Geminia
20	Heritage
21	ICEA LION General
22	ICEA LION Life
23	Intra Africa
24	Invesco
25	Jubilee
26	Kenindia
27	Kenya Orient
28	Kenya Orient Life
29	Kenyan Alliance

30	Liberty Life
31	Madison
32	Mayfair
33	Metropolitan Cannon Life
34	Occidental
35	Old Mutual Life
36	Pacis
37	Pan Africa Life
38	Phoenix
39	Pioneer Life
40	Prudential Life
41	Resolution
42	Saham (formerly Mercantile)
43	Takaful
44	Tausi
45	The Monarch
46	Trident
47	UAP General
48	UAP Life
49	Xplico

Source: AKI Annual Report 2014

Appendix 2: Research Data

	Company	Return on Equity	Property / Total Assets Ratio	Claims Loss Ratio	Expense Ratio	Year
1	AAR	45%	0%	67%	41%	2014
2	AIG	46%	4%	55%	57%	2014
3	Amaco	15%	15%	54%	54%	2014
4	APA Insurance	16%	7%	70%	42%	2014
5	APA Life	-7%	10%	153%	59%	2014
6	Britam	19%	12%	92%	50%	2014
7	Britam General	4%	0%	59%	61%	2014
8	Cannon	13%	28%	61%	63%	2014
9	CIC General	22%	14%	69%	32%	2014
10	CIC Life	16%	25%	73%	34%	2014
11	Directline	62%	4%	60%	48%	2014
12	First Assurance	28%	27%	72%	41%	2014
13	GA Insurance	25%	27%	66%	52%	2014
14	Geminia	22%	20%	54%	51%	2014
15	Heritage	34%	2%	40%	72%	2014
16	ICEA LION General	24%	23%	52%	56%	2014
17	ICEA LION Life	19%	21%	245%	52%	2014
18	Intra Africa	2%	26%	67%	42%	2014
19	Jubilee	19%	6%	106%	29%	2014
20	Kenindia	-14%	10%	168%	62%	2014
21	Kenya Orient	11%	19%	48%	50%	2014
22	Kenya Orient Life	-74%	0%	91%	64%	2014
23	Kenyan Alliance	11%	30%	59%	56%	2014
24	Liberty Life	32%	6%	120%	72%	2014
25	Madison	15%	37%	73%	71%	2014
26	Mayfair	30%	15%	50%	57%	2014
27	Metropolitan Cannon Life	-57%	0%	85%	89%	2014
28	Occidental	35%	16%	64%	45%	2014
29	Old Mutual Life	-15%	12%	168%	282%	2014
30	Pan Africa Life	39%	5%	101%	31%	2014
31	Pioneer Life	61%	26%	62%	28%	2014
32	Prudential Life	-7%	0%	71%	60%	2014
33	Resolution	-25%	0%	65%	93%	2014
34	Saham	3%	3%	61%	107%	2014

35	Takaful	2%	0%	51%	58%	2014
36	Tausi	21%	12%	52%	62%	2014
37	The Monarch	22%	37%	30%	65%	2014
38	Trident	9%	38%	60%	61%	2014
39	UAP General	13%	22%	68%	39%	2014
40	UAP Life	-33%	10%	119%	87%	2014
41	AAR	40%	0%	66%	41%	2013
42	AIG	32%	4%	49%	66%	2013
43	Amaco	17%	16%	53%	61%	2013
44	APA Insurance	15%	6%	69%	39%	2013
45	APA Life	-20%	12%	190%	67%	2013
46	Britam	34%	10%	93%	51%	2013
47	Britam General	-42%	0%	79%	52%	2013
48	Cannon	19%	37%	66%	66%	2013
49	CIC General	35%	14%	65%	32%	2013
50	CIC Life	25%	28%	67%	38%	2013
51	Directline	22%	11%	63%	45%	2013
52	First Assurance	31%	16%	74%	37%	2013
53	GA Insurance	36%	24%	69%	51%	2013
54	Gemina	25%	21%	52%	47%	2013
55	Heritage	40%	3%	37%	68%	2013
56	ICEA LION General	29%	22%	48%	55%	2013
57	ICEA LION Life	44%	23%	228%	49%	2013
58	Intra Africa	8%	26%	67%	39%	2013
59	Jubilee	24%	7%	112%	37%	2013
60	Kenindia	23%	9%	141%	56%	2013
61	Kenya Orient	23%	30%	47%	56%	2013
62	Kenyan Alliance	62%	34%	50%	56%	2013
63	Liberty Life	29%	7%	137%	78%	2013
64	Madison	16%	38%	92%	63%	2013
65	Mayfair	36%	13%	63%	56%	2013
66	Metropolitan Cannon Life	-26%	0%	67%	153%	2013
67	Occidental	32%	18%	65%	48%	2013
68	Old Mutual Life	-111%	13%	242%	279%	2013
69	Pan Africa Life	38%	5%	103%	29%	2013
70	Pioneer Life	16%	37%	68%	35%	2013
71	Resolution	22%	0%	80%	157%	2013
72	Saham	3%	3%	75%	84%	2013
73	Takaful	-3%	0%	33%	80%	2013
74	Tausi	33%	11%	45%	57%	2013

75	The Monarch	8%	37%	37%	80%	2013
76	Trident	8%	38%	70%	62%	2013
77	UAP General	17%	21%	61%	42%	2013
78	UAP Life	31%	12%	100%	99%	2013
79	AAR	14%	0%	83%	44%	2012
80	AIG	45%	4%	44%	70%	2012
81	Amaco	9%	14%	57%	54%	2012
82	APA Insurance	-21%	8%	70%	40%	2012
83	APA Life	-67%	14%	280%	93%	2012
84	Britam	22%	8%	62%	77%	2012
85	Cannon	28%	35%	43%	59%	2012
86	CFC Life	-4%	6%	191%	83%	2012
87	CIC General	39%	12%	63%	32%	2012
88	CIC Life	18%	11%	65%	38%	2012
89	Corporate	28%	43%	57%	53%	2012
90	Directline	49%	9%	56%	43%	2012
91	First Assurance	35%	20%	70%	35%	2012
92	GA Insurance	33%	17%	68%	46%	2012
93	Gemina	21%	25%	62%	51%	2012
94	Heritage	53%	4%	48%	73%	2012
95	ICEA LION General	25%	36%	46%	64%	2012
96	ICEA LION Life	44%	20%	237%	56%	2012
97	Intra Africa	14%	17%	60%	41%	2012
98	Jubilee	18%	8%	98%	38%	2012
99	Kenindia	9%	11%	143%	51%	2012
100	Kenya Orient	23%	27%	41%	62%	2012
101	Kenyan Alliance	14%	29%	48%	66%	2012
102	Madison	45%	30%	86%	68%	2012
103	Mayfair	10%	14%	78%	57%	2012
104	Saham	-40%	16%	63%	89%	2012
105	Metropolitan Life	-28%	0%	162%	254%	2012
106	The Monarch	-60%	32%	47%	87%	2012
107	Occidental	14%	19%	68%	40%	2012
108	Old Mutual Life	-141%	14%	276%	227%	2012
109	Pacis	4%	19%	45%	61%	2012
110	Pan Africa Life	12%	6%	108%	27%	2012
111	Real	18%	0%	58%	53%	2012
112	Takaful	31%	0%	53%	78%	2012
113	Tausi	6%	7%	55%	55%	2012
114	Trident	49%	51%	63%	51%	2012
115	UAP General	52%	24%	57%	46%	2012

116	UAP Life	26%	15%	140%	67%	2012
117	Amaco	14%	16%	52%	59%	2011
118	APA	18%	1%	70%	35%	2011
119	Apollo Life	15%	27%	120%	51%	2011
120	British American	27%	1%	45%	50%	2011
121	Cannon	10%	30%	72%	36%	2011
122	CFC Life	36%	5%	70%	88%	2011
123	Chartis	60%	0%	44%	66%	2011
124	Concord	-3%	0%	66%	51%	2011
125	CIC	18%	13%	59%	39%	2011
126	Corporate	5%	25%	56%	51%	2011
127	Directline	48%	9%	59%	39%	2011
128	Fidelity Shield	10%	8%	68%	43%	2011
129	First Assurance	33%	5%	69%	35%	2011
130	GA Insurance	24%	15%	65%	28%	2011
131	Gateway	64%	47%	43%	69%	2011
132	Gemina	18%	24%	61%	50%	2011
133	Heritage	41%	10%	52%	56%	2011
134	ICEA Lion Life	10%	21%	123%	52%	2011
135	ICEA Lion General	37%	40%	57%	48%	2011
136	Intra Africa	31%	15%	59%	42%	2011
137	Jubilee	37%	8%	89%	39%	2011
138	Kenindia	-10%	9%	120%	51%	2011
139	Kenya Orient	14%	9%	44%	59%	2011
140	Kenyan Alliance	18%	29%	35%	53%	2011
141	Madison	12%	32%	77%	51%	2011
142	Mayfair	9%	11%	71%	54%	2011
143	Mercantile	18%	17%	51%	87%	2011
144	Metropolitan Life	-38%	1%	28%	304%	2011
145	The Monarch	21%	32%	34%	66%	2011
146	Occidental	17%	24%	73%	45%	2011
147	Old Mutual Life	14%	2%	63%	89%	2011
148	Pacis	4%	19%	49%	51%	2011
149	Pan Africa Life	1%	0%	57%	39%	2011
150	Pioneer Life	23%	0%	61%	46%	2011
151	Real	-9%	0%	57%	49%	2011
152	Takaful	14%	0%	73%	346%	2011
153	Tausi	15%	8%	56%	56%	2011
154	Trident	180%	41%	80%	28%	2011
155	UAP Life	37%	21%	135%	88%	2011
156	UAP Insurance	3%	26%	53%	41%	2011
157	Amaco	14%	16%	54%	53%	2010

158	APA	12%	9%	71%	38%	2010
159	Apollo Life	20%	20%	149%	41%	2010
160	British American	14%	7%	104%	52%	2010
161	Cannon	31%	33%	63%	50%	2010
162	CFC Life	16%	5%	93%	62%	2010
163	Chartis	47%	3%	41%	66%	2010
164	Concord	-23%	18%	67%	69%	2010
165	CIC	23%	13%	57%	37%	2010
166	Corporate	38%	45%	61%	46%	2010
167	Directline	21%	9%	65%	37%	2010
168	Fidelity Shield	31%	36%	66%	44%	2010
169	First Assurance	31%	15%	71%	37%	2010
170	GA Insurance	15%	23%	65%	33%	2010
171	Gateway	7%	23%	59%	47%	2010
172	Geminia	13%	26%	61%	53%	2010
173	Heritage	16%	6%	62%	48%	2010
174	ICEA Lion Life	38%	23%	144%	48%	2010
175	ICEA Lion General	36%	27%	59%	45%	2010
176	Intra Africa	25%	14%	57%	43%	2010
177	Jubilee	48%	8%	116%	39%	2010
178	Kenindia	26%	10%	112%	52%	2010
179	Kenya Orient	1%	18%	58%	46%	2010
180	Kenyan Alliance	33%	29%	29%	65%	2010
181	Madison	21%	35%	78%	48%	2010
182	Mayfair	8%	0%	72%	52%	2010
183	Mercantile	13%	15%	54%	81%	2010
184	Metropolitan Life	-18%	0%	57%	276%	2010
185	Occidental	-56%	26%	70%	47%	2010
186	Old Mutual Life	22%	7%	50%	316%	2010
187	Pacis	41%	21%	44%	52%	2010
188	Pan Africa Life	11%	5%	85%	40%	2010
189	Real	2%	0%	62%	49%	2010
190	Shield Assurance	30%	0%	43%	71%	2010
191	Tausi	15%	8%	47%	61%	2010
192	Trident	-44%	26%	81%	33%	2010
193	UAP Life	15%	22%	194%	122%	2010
194	UAP Insurance	0%	27%	55%	51%	2010

Source: AKI and IRA Reports 2010-2014