

**RELATIONSHIP BETWEEN MACROECONOMIC VARIABLES
AND FINANCIAL PERFORMANCE OF INSURANCE COMPANIES
IN KENYA**

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DECLARATION

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

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DEDICATION

This project is dedicated to my father Adrian Murungi, to my mother Trizer Murungi, to my brothers Nelson and Robert Murungi and my sister Rosalind Murungi who inspired and encouraged me throughout my work.

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ABBREVIATIONS

AKI	-	Association of Kenya Insurers
CPI	-	Consumer Price Index
GDP	-	Gross Domestic Production
IRA	-	Insurance Regulatory Authority
KSH	-	Kenya Shilling
MFI	-	Micro-Finance Industry
ROA	-	Return on Asset
U.S	-	United States
USD	-	United States Dollar

ABSTRACT

The purpose of this study was to determine the relationship between macroeconomic variables and financial performance of Insurance Companies in Kenya. The financial performance measures of companies in Insurance industry used was the Return on Assets (ROA) which was regressed against the macroeconomic variables including real exchange rate (USD/Ksh), GDP growth rate, the change in money supply (M3), average annual lending interest rates as computed by CBK and inflation rate measured by annual percentage changes in the consumer price index (CPI) and other determinants of financial performance of Insurance companies included claim ratio, expense ratio and size of insurance companies as presented in published financial reports by Association of Kenya Insurers (AKI).

The study used descriptive correlation research design. The population of this study comprised of 46 Insurance firms listed in Kenya by the year 2013, according to AKI report 2013. The study employed annual secondary data which was obtained from the Central Bank of Kenya, Kenya National Bureau of Statistics and published annual financial statement from AKI reports. The period of study was five years from 2009 to 2013. The data was analyzed using descriptive analysis, correlation analysis and multiple regression analysis using SPSS.

This study found that Interest rate ($0.027 < 0.05$) Gross Domestic Product ($0.031 < 0.05$), Claim ratio ($0.000 < 0.05$) and Expense ratio ($0.01 < 0.05$) are statistically significant while Inflation rate ($0.151 > 0.05$), Exchange rate ($0.169 > 0.05$), Money Supply ($0.696 > 0.05$) and Size of the assets ($0.412 > 0.05$) with significance of more than 5% are not statistically significant. This reveals that x_1 , x_5 , x_6 and x_7 are suitable predictors of insurance company's financial performance.

The study recommends that in order for the Insurance companies in Kenya to improve, there is need for the Insurance Regulatory Authority (IRA) being the regulator of the industry to initiate policies measures that will help to manage the impact of exchange rate within the industry. Lower exchange rates would be more appropriate for companies in the Insurance industry in Kenya to perform better since they are negatively correlated with financial performance of these companies. The study also recommends that there is also need for the Government to control the broad money supply in Kenya as there is some evidence to suggest that higher money supply may lead to better performance of companies in the insurance industry in Kenya. This may be attributed to high disposable income by individual thus consuming services offered by Insurance companies. The study further recommends that there is need for the IRA to initiate policies that ensure lower inflation rate in the economy and create an insurance pool that will provide a low average lending interest rates which will improve the financial performance of companies in insurance industry as they are negatively correlated with each other. Lower interest rates will help improve the liquidity in the general sector and therefore lead to more investments and consumption. The results however clearly indicate that there are other variables that affect the financial performance of Insurance companies in Kenya this is due to the statistical insignificance between ROA and macroeconomic variables. The study therefore recommends the need for further studies on these variables, taking longer period into account.

CHAPTER ONE

INTRODUCTION

1.1 Background Of The Study

Insurance is important to individuals and a country at large. Kihara (2012) states that insurance plays a significant role in a country's economic growth and offers financial protection to an individual or firm against monetary losses suffered from unforeseen circumstances. This is because the world is characterized by risks and uncertainties and insurance has evolved as a way of providing security against the risks and uncertainties. Mwangi (2013), point outs that profitability is one of the important pointers of industry performance and has major insinuations on other sectors activities.

This study seeks to determine the relationship between selected macroeconomic variables such as exchange rate, GDP growth, money supply, interest rate, inflation, stock market and foreign direct investment (FDI) on financial performance of insurance companies in Kenya. This proposal will therefore attempt to present the concepts of macroeconomic variables, financial performance and a brief background of the insurance companies in Kenya.

Insurance is one of the most interesting and important transactions made by individuals in business. In the 1943 South Eastern underwriters' association decision by the U.S Supreme Court, Justice Hugo Black wrote "perhaps no modern commercial enterprises directly affect so many persons in all walks of life as does the insurance business. Insurance touches the home, the family and the occupation or business of almost every

person the United States.” Clearly, insurance is important to people of all community, color, gender and race. Insurance is important to everyone and many aspects of the insurance transaction merit study and thought.

Dorfman (1994) defines insurance as a financial arrangement that redistributes the cost of unexpected losses. Cathy Pareto (Investopedia) defines insurance as a form of risk management in which insured transfer the cost of potential loss to another entity in exchange of monetary compensation. Insurance involves the transfer of potential losses to an insurance pool. The pool combines all the potential losses and then transfers the cost of losses among the members of the pool. Certainty of financial payment from a pool with adequate resources and accurate ability to predict losses account the hall marks of insurance transactions.

According to Sneyd (1995) unexpected economic losses have occurred throughout human history and such losses would continue to occur whether or not a system of insurance had ever been advised. Through the operation of an insurance system losses can be predicted before they occur. The predictability of losses in advance is basic to insurance systems operations. An insurance system allows losses to be predicted in advance and the cost of losses to be financed and redistributed in advance. Insurance is always in demand; people and business are always looking for ways to minimize risks and due to demand and range of insurance policies available, insurance policies have become investments in and of themselves. The level of insurance concentrated in urban centers could lead to a huge losses and chaos in insurance industry.

1.1.1 Macroeconomic Variables

Akers (2001) defines macroeconomics as a branch of economics dealing with the performance, structure, behavior and decision-making of an economy as a whole, rather than individual markets. This includes national, regional and global economies. Macroeconomics studies aggregate indicators such as: Gross Domestic Production (GDP), unemployment rates and sometimes indices to understand how the whole economy functions. They develop models that explain the relationship between such factors as national income, output, consumption, unemployment, inflation, savings, investment, international trade, international finance and others.

While macroeconomics is a broad field of study, there are two areas of research that are emblematic of the discipline: the attempt to understand the causes and consequences of short – run fluctuations in national income (the business cycle), and the attempt to understand the determinants of long-run economic growth (increase in national income). These models and their forecasts are used by governments to assist in the development and evaluation of economic policy. For the purpose of this study, the researcher will analyze the relationship between the following Macroeconomic variables; interest rate, inflation rate (CPI) , currency exchange rate fluctuations, money supply, GDP, Claim ratio (CR), and Expense ratio(ER), size of the insurer as insurance specific variables and financial performance of insurance companies in Kenya.

Crowley (2007) defines interest rate as the price a borrower pays for the use of money they borrow from a lender or fee paid on borrowed assets. Ngugi (2001) describes interest rate as a price of money that reflects market information regarding expected change in the purchasing power of money or future inflation. Economists argue that the interest rate is the price of capital allocation over time ; monetarist use the interest rate as an important tool to attract more saving, as increases in the interest rates attract more savings and the decrease in interest rate will encourage investors to look for another investment that will generate more return accordingly. Insurance firms themselves earn high interest income when interest rates are high and on the contrary high interest rates discourage premiums.

Jhingan (2002) defines inflation as a persistent and appreciable rise in the general level of prices. Akers (2014) states inflation rate measures changes in the average price level based on a price index. The most commonly known index is the Consumer Price Index (CPI). The index measures average retail prices that consumers pay. A high or increasing CPI indicates existence of inflation. Higher prices tend to reduce overall consumer spending which in turn leads to a decrease in GDP while inflation itself is not negative, rapidly increasing rates of inflation signal the possibility of poor macroeconomic health.

Harvey (2012) describes exchange rate as the value of two currencies relative to each other. It is the price of one currency expressed in terms of another currency. It is the price at which the currency of one country can be converted to the currency of another. Although some exchange rates are fixed by agreement, most fluctuate or float from day

to day. Martin and Mauer (2003), show that understanding the impact of foreign exchange risk is a critical element for purposes of firm valuation and risk management. Li et al. (2009) highlighted the importance of exchange rate exposure management within the U.S. insurance industry. A large proportion of insurers show significant foreign exchange exposure.

Haruna et al (2013) describes money supply as broad money supply in an economy; it is the entire stock of currency and other liquid instruments in a country's economy as of a particular time. Various types of money in the money supply are generally classified as "M"s such as M0, M1, M2 and M3, according to the type and size of the account in which the instrument is kept. M0 and M1 are also called narrow money and include coins and notes that are in circulation and other money equivalents that can be converted easily to cash. M2 includes M1 and, in addition, short-term time deposits in banks and certain money market funds. M3 includes M2 and residents foreign currency deposits. Increase in the supply of money lowers interest rates, which in turns generates more investment.

Gross Domestic Product is the market value of all finished goods and services produced in a country within a specified period, mostly one year. It is a gauge of economic recession and recovery and an economy's general monetary ability to address externalities. Mwangi (2013) states that (GDP) is a most commonly used macroeconomic indicator to measure total economic activity within an economy, its growth rate reflects the state of the economic cycle. Oshinloye et al (2009) shows that no country can experience meaningful development without the presence of formidable insurance

industry, thereby making insurance business in any nation indispensable irrespective of its quota to the gross domestic product (GDP) or its level of awareness among the populace. According to Ezirim and Muoghahu (2002), insurance industry is perceived as an indispensable tool of economic progress, growth and development.

1.1.2 Financial Performance

Financial performance is the level of performance of a business over a specified period of time expressed in terms of overall profits and losses during that time (Wikipedia). It is a subjective measure of how well a firm can use assets from its primary mode of business and generate revenue. It is also used as a general measure of a firm's overall financial health over a given period of time, and can be used to compare similar firms across the same industry or to compare industries or sectors in aggregation (Investopedia). Wild (2002) states that financial ratios usually provide a broader understanding of a company's financial position since they are calculated from the accounting information obtained from financial statements of a company.

These ratios are divided into five categories. According to the financial aspect of the business measures, liquidity ratios measure the availability of cash to pay debt. Activity ratios measures how quickly a firm converts non-cash assets to cash. Debt ratios measure the firm's ability to pay long term debt. Profitability ratio measures the firm use of its assets and control expenses to generate acceptable rate of return and market ratios measure investors' response to owning a company's stock and also the cost of stock. They are concerned with the return on investment for shareholders, and with the

relationship between returns and the value of an investment in company's shares. For the purpose of this study, financial aspect measured is profitability.

Profitability is a relative measure of success for a business; it is the efficiency of a company or industry to generate earnings. It is expressed in terms of how much a company makes with what they have got and how much they make from what they take in. In this study, performance of insurance companies is measured by its Return on Assets (ROA). ROA tells what a company can do with what they have got i.e. how many shillings of profit they can achieve for each shilling of assets they control. It is defined as net income divided by average total assets, reflects how well a company management is using the company real investment resources to generate profits. It is useful for comparing competing companies in the same industry.

1.1.3 Relationship Between Macroeconomic Variables and Financial Performance

Cheechee and Herbeman (2002) explain that economic environments have a profound effect on the growth of the insurance companies. Oliver (2000), states that macroeconomic variables are such factors that are pertinent to a broad economy at the regional or national level and affect a large population rather than few selected individuals. It is often argued that financial performance is determined by some fundamental macroeconomic variables such as the interest rate, Gross Domestic Product (GDP), exchange rate, inflation unemployment, money supply, stock market and FDI which are closely monitored by the government, businesses and consumers (Mwangi, 2013).

Evidence from the financial press indicates that investors generally believe that monetary policy and macroeconomic events have a large influence on the volatility of financial performance (Muchiri, 2012). The major macroeconomic factors are the income level (per capita and disposable income), inflation and price level, price of insurance, comparative return on investments of insurance and demographic factors act as determinants of insurance growth are the fundamental macroeconomic factors and form the linkage between the economy and insurance market.

Insurance is an important intermediary in the financial market and also plays a very vibrant role in the economy by mobilizing savings and supplying long term capital for economic growth and as an asset allocator. In a competitive insurance market, competition among the insurers increases productivity. Efficiency provides investors with diversified portfolio choice, enhances liquidity and induces better monitoring and corporate governance. A strong insurance industry promotes a developed contractual saving sector which contributes to a more resilient economy that would be less vulnerable to interest rate and demand shocks while creating a more stable business environment, including macroeconomic stability.

1.1.4 Insurance Companies in Kenya

Insurance industry in Kenya has been in existence for over sixty years, the first insurance companies are believed to have been owned by British insurers during the colonial times. The Kenyan insurance market is governed by the Insurance Act (1984) administered by the Insurance Regulatory Authority (IRA), a semi-autonomous regulator, set up in 2008.

Previously IRA was a department of the Ministry of Finance which administered the insurance industry, and it was headed by the commissioner of insurance, who is today at par with other regulatory authority heads. Finance Act 2011 boosted the power of the authority through amendments to Insurance Act. The industry operates under the umbrella body, Association of Kenya Insurers (AKI), established in 1987: it acts as an advisory body for insurance companies in Kenya.

By the year 2013, there were 46 licensed insurance companies, majority offering life and non-life insurance policies. There were 170 licensed brokers, 4862 insurance agents. Other licensed player included 140 investigators, 92 motor assessor and 21 loss adjusters, 3 claims setting agents, is risk managers and 27 insurance surveyors. The industry's contribution the country's GDP is still low although there has been notable growth for the last 9 years. The gross written premium by the industry was Ksh. 108.54 billion compared to Ksh. 91.60 billion in 2011, representing a growth of 18.49% (AKI, Report, 2012.) Performance of the industry relative to the Kenyan Gross Domestic Product has improved from 3.02 in 2011 to 3.16 in 2012

Kenya's fast growing insurance sector is reaping from product innovation, enhanced marketing campaigns which have mostly targeted the youth and wading through a voluminously unbanked population to drive industry growth. During the last few years, the insurance industry has undergone a series of changes through financial reforms, advancement of communication and information technologies, globalization of financial services and economic development. Those changes have had a considerable effect on

efficiency, productivity change, market structure and performance in the insurance industry. The industry faces challenges like coming up with a solution for companies whose viability is threatened by their inability to meet policy holder claims and how to generate growth for an industry that has significant potential for growing as a percentage of GDP but has been stagnant.

(Mungara 2009), There are various characteristics of insurance business which single it out from other industries for special treatment such as; insurance contracts are promissory in nature in that at the time of the sale, the insurer undertake to make a payment to, or on behalf of the policy holder upon the occurrence of a specified future event or at a future date. There is interplay between competition law and regulation of the insurance sector in Kenya. The regulation of the insurance industry in Kenya is inherently weak thus failing to stimulate competition in the industry. There is need to establish a regulatory framework in the insurance industry that is efficient and able to stimulate competition in the industry in a manner that will stir growth. Again the IRA should be able to manage the effects of the macroeconomic variables on the financial performance of the insurance companies

1.2 Research Problem

The insurance industry like any other industries in the market is affected by various macroeconomic variables such as interest rate, inflation, unemployment, Gross Domestic Product (GDP), exchange rate fluctuations and money supply. Firms and individuals need to be well informed about the available insurance options to enable them plan for their future through mitigating risks and losses that might occur in their normal operations.

The industry has currently received huge attention from different players in the market as the technological and economical changes pose greater risks that must be insured against. Most of the studies that have been done have focused largely on the relationship between these variables on banking industries among others with no much findings on the insurance industry. Therefore this study will aim at establishing the relationship between Macro-economic Variables and financial performance of insurance industries in Kenya.

Mwangi (2013) concluded that macroeconomic variables influence the financial performance of companies in the aviation industry in Kenya at 20.8% level of significance (5%). The study also found that the ROA had a weak positive insignificant correlation with GDP growth rate and annual change in money supply (M3). The study further concludes that there is a weak negative insignificant correlation between ROA and real exchange rate, annual average lending rate and annual average inflation.

Njuguna (2013) found out that MFI financial performance could be determined to a very large extent by three macroeconomic variables; economic growth (measured by GDP), interest rate and inflation. He argued that if microfinance industry has to have a boost in Kenya they should check the three macro-economic factors.

Kung'u (2013) concludes that GDP, inflation and banks' lending interest rates in that respective order were established to be the macroeconomic factors that had the greatest positive effect on PE firms' financial performance while exchange rate of the dollar against the Kenya Shilling showed a negative relationship though to a small extent.

Muchiri (2012) concludes that exchange rate has a significant negative impact on stock market performance; higher money supply and lower interest rates may lead to better stock market performance. He recommends the Government to initiate measures that will control exchange rate, money supply and initiate policies that will lower interest rates.

Most of the studies on the effects of macroeconomic indicators have covered Aviation industry (Mwangi, 2013) the stock market (Muchiri, 2012) the commercial banks in Kenya (Illo, 2012). Muchiri (2012) suggested in his research the need to replicate the study of macroeconomic variables in other sectors of the economy like manufacturing, insurance in order to find out whether these variables influence performance of the firm. There was therefore a gap in literature as far as the study on the relationship between macroeconomic variables and financial performance of insurance companies in Kenya. Thus this study sought to fill this research gap by answering the following question: What is the relationship between macroeconomic variables and financial performance of insurance companies in Kenya?

1.3 Objective of the Study

The objective of this study was to establish the nature of relationship between specific macroeconomic variables (Interest rate, Inflation rate, Real exchange rate, GDP, Money supply, Claim ratio, Expense ratio and Size of the company) and financial performance of insurance companies in Kenya (ROA).

1.4 Value of the Study

The study findings will provide pertinent information on how macroeconomic factors affect insurance companies in Kenya. The study findings will be of interest to the government of Kenya, shareholders, insurance firms in Kenya, Association of Kenya Insurer (AKI) and Insurance Regulatory Authority (IRA), as well as scholars and academicians.

The study will benefit scholars and academicians who would wish to undertake further studies and increase the body of knowledge on the effect of macroeconomic variables in Kenya. It will increase knowledge on the relationship between macroeconomic variables and financial performance of insurance industry in Kenya. It also suggests areas where gap in literature exist and where further research studies are required so that scholars in the field of finance and economics can do further studies in them. Insurance companies will be more informed on the macroeconomic variables that affect their financial performance thus allowing them to develop measures and ways to mitigate the risks that may come as a result.

The government of Kenya will understand the forces of economic growth mainly in the insurance industry and try to develop a mixture of policies that will be suitable for curing such variables like unemployment, inflation, interest rate and exchange rate fluctuations. Association of Kenya Insurers (AKI) and Insurance Regulatory Authority (IRA) will benefit from the study by getting information on how macro-economic variables affect the insurance industry thus they will provide data and information on better strategies that can be used to deal with macro-economic variables, improve efficiency and growth in the industry.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

This chapter presents the theoretical framework, review of empirical studies and determinants of financial performance in insurance industry. Theoretical framework focuses on theories that explain the relationship among the variables considered important to the study. Review of empirical studies is about past and present studies that have been done on the area of study. Determinants of financial performance explain how the specific macroeconomic variables influence financial performance of insurance industry in Kenya.

2.2 Review of Theories

It will help to have concepts, definitions and existing theories on effects of macroeconomic variables. It will give logic sense of the relationship between variables and factors that have been deemed relevant to the problem and will therefore guide in determining what factors to be measured.

2.2.1 Modern Portfolio Theory

Modern Portfolio Theory (MPT) was developed by Harry Markowitz in 1952; it assists in selecting the most efficient investments by analyzing various possible portfolios of the given securities. By choosing securities that do not 'move' exactly together, MPT model shows investors how to reduce their risk. It is based on expected returns (mean) and the standard deviation (variance) of the various portfolios. MPT attempts to maximize

expected portfolio returns for a given amount of portfolio risk, or equivalently minimize risk for a given level of return by carefully choosing the proportions of various assets. It models a portfolio as a weighted combination of assets, so that the return of a portfolio is the weighted combination of the assets return.

An investor either maximizes his portfolio return for a given level of risk or maximizes his return for the minimum risk. A portfolio that gives maximum return for a given risk, or minimum risk for given return is an efficient portfolio. It is assumed that investors are rational, they would like to have higher return and they are risk averse, they want to have lower risk. Thus, when selecting a portfolio from the portfolios that have the same return, the investor will prefer the portfolio with lower risk, when selecting from the portfolios that have the same risk level, an investor will prefer the portfolio with higher rate of return.

Due to macroeconomic variables fluctuations, Kung'u (2013) points out that any investment firm should have a portfolio of investments in different types of investment to maximize returns and minimize risks. Since insurance firms are investments by themselves its standard practice for them to invest in a diversified portfolio to minimize risk and harness the returns of the various investment options on offer. When choosing a portfolio investors should maximize the discounted (or capitalized) value of future returns. Since the future is not known with certainty, it must be "expected" or "anticipated" returns which are discounted. Through combining different assets whose returns are not perfectly positively correlated, MPT seeks to reduce the total variance of

the portfolio return. MPT also assumes that investors are rational and the markets are efficient.

MPT emphasizes maximizing returns while minimizing risks, while giving recognition to the existence of systematic and non-systematic risks. These concepts are usually referred to when discussing financial investments. Insurance being influenced by risks and returns as well, also finds meaning through MPT. Diversification is the solution against being a victim of concentration risk. Over-reliance on similar assets' profitability and hopes that contingent liabilities do not become actual obligations are risks that can wipe-out risk-portfolios in an instant. Non-systematic risks and alphas are the main items that give underwriting skills meaning. Non-systematic risks can be eliminated by widening the coverage of insurance over more Assureds. In doing so, diversification is achieved. Alphas, on the other hand, represent the surprise return or inherent profitability of an asset and in converting this concept onto the insurance industry, this is perhaps the inherent characteristics of an insured property/person/event and how the hazards and other circumstances are minimized, wherein it is more probable that the premiums paid by the Assured will eventually be kept at the end of the insurance policy coverage period. While financial assets are capable of delivering abnormal returns, insurable risks are also able to remain abnormally intact and avoid transforming into real obligations for the insurance company. The fewer obligations an Insurance company has, the more the profit hence better financial performance.

2.2.2 Arbitrage Pricing Theory

Arbitrage Pricing Theory (APT) was proposed by Stephen Ross in 1976. It is an asset pricing theory that states the expected return of an investment or a financial asset can be modeled as a linear relationship of various macroeconomic variables or where degree of correlation to changes in each variable is represented by a beta coefficient. The model derived rate of return will then be used to obtain the price or value of the asset correctly. The asset value should equal the expected end of period asset value or future cash flows discounted at the rate implied by the model. If the asset value changes, arbitrage should bring it back to the line.

APT agrees that though many different specific forces can influence the return of any individual stock, these particular effects tend to cancel out in large and well diversified portfolio. This is the principle of diversification and it has an influence in the field of insurance. An insurance company has no way of knowing whether any particular individual will become sick or will be involved in an accident, but the company is able to accurately predict its losses on a large pool of such risk. However, an insurance company is not entirely free of risk simply because it insures a large number of individuals. Natural disaster or changes in health care can have major influences on insurance losses by simultaneously affecting many claimants.

Cummins (1987) states that insurance companies are corporations and insurance policies can be interpreted as specific types of financial instrument or contingent claim thus it is natural to apply financial models to insurance pricing. The models are designed to

estimate the insurance prices that would pertain in a competitive market. Charging a price at least as high as the competitive price (reservation price) increases the market value of the company. Charging a lower price would reduce the company's market value. Thus, financial models and financial prices are among the key items of information that insurers should have at their disposal when making financial decisions about tariff schedules, reinsurance contract terms, etc. The model requires estimates of the market prices of risk for the k risk factors as well as the beta coefficients for insurance. Like most other financial pricing models it is possible to get insurance model that gives the price for an insurance policy that is free of default risk.

2.2.3 Black Swan Theory

The concept of black swan events was popularized by Nassim Nicholas Taleb in 2008. It states that the world is severely affected by events that are rare and difficult to predict, events of low probability but high impact. Silberzath (2013), states that a black swan does not create a new category of events, but is simply the occurrence of a known category, the probability of which was under estimated. They occur not because their probability is inherently incalculable, but because the model used to calculate them is wrong, or because though the model was correct, the possibility of occurrence was dismissed in practice. Their implications for markets and investment are compelling and need to be taken seriously.

The Black Swan is an essential concept for understanding how we make mistakes in estimating the probabilities of different events belonging to a known universe. These errors are mainly due to bias, either psychological or methodological. Knight (1921) wrote that the universe may not be knowable but objective phenomenon is certainly knowable to a degree so far beyond our actual powers and therefore any limitation of knowledge due to lack of real consistency in the universe may be ignored. He suggests that any lack of knowledge about external reality that might be attributed to a lack of real consistency over time in the universe is insignificant and may be ignored when compared to humans' cognitive failures to identify a predetermined external reality of "unique" events.

Davidson (2010) states that since probabilistic risks can be quantified by human computing power, Knight (1921) argued that the future is insurable against risky probabilistic occurrences. The cost of such insurance, or self-insurance, will take into account all entrepreneurial marginal cost calculations (or by contingency contracts in a complete general equilibrium system). This insurance process permits entrepreneurs to make profit maximizing rational production and investment choices even in the short run when dealing with risky known processes. It is just that the short run does not provide a sufficiently large sample, for enough black swans to appear to calculate the probabilistic risk of encountering a black swan. In the long run, those entrepreneurs who in their price marginal cost calculations include these insurance costs as if they knew the objective probabilities implicit in Knight's unchanging reality will make the efficient decision and will, in Knight's system, earn profit.

The greatest risks are never the ones you can see and measure, but the ones you can't see and therefore can never measure. The ones that seem so far outside the boundary of normal probability that you can't imagine they could happen in your lifetime even though, of course, they do happen, more often than you care to realize. What may be a black swan to society at large may have limited insurance impact; likewise, some events that cause catastrophic losses may not seem extreme from other perspectives. Nobody wants to de-risk, in the sense that they want to actually take some money off the table. It's all about pricing and quantifying risk, and of course hedging against it. Demand for protection against so-called tail risks is increasing as investors react to black swan events. An investor or a firm does not have to try to be too smart in trying to forecast what is going to happen and which hedge is going to perform better what they need to do is accumulate cheap protection. Insurance firms offer this cheap protection where by large losses can be hedged against by paying small amounts known as premiums. By having such products, insurance firms accumulate premiums in a pool, since the occurrence of these events is minimal, they may end up paying none thus better financial performance.

2.3 Determinants of Financial Performance in Insurance Company

Hicks (2000) explain that insurance companies have other sources of revenue besides collecting premiums, and as such they depend on several macroeconomic factors for their growth and survival. When certain things happen in the economy, they have a direct impact on the financial health of insurers worldwide. It is important to pay attention to these indicators when planning for the financial future of insurance industry. According

to Buyinza et al (2010) and Indranarain (2009) the level of a firm's profit is influenced by the level of revenue and expenditure. These two factors – revenue and expenditure are influenced by firm-specific characteristics, industry features and macroeconomic variables.

Pervan and Pavic (2010) and Curak et al (2011) investigated the impacts of firm-specific, industry-specific and macroeconomic variables on the financial performance of the Croatian non-life and composite insurance companies respectively. Results of Pervan and Pavic revealed an inverse and significant influence of ownership, expense ratio and inflation on profitability. Curak et al (2011) indicated that size; underwriting risk, inflation and equity returns have significant association with composite insurers' financial performance.

Hicks (2000) states unemployment does not affect the insurance industry as much as it does the broader economy, but there are some correlations. High unemployment is a bad indicator for insurers. Insurers earn money by collecting premiums and also by investing the capital they have on hand, usually in short-term investments. When interest rates fall, their revenue falls as well. Insurers have the power to change their investment strategy as needed to mitigate against investment losses, but overall interest rates serve as a good economic indicator for the health of insurance companies. When investment revenue falls, insurers must raise premiums or cut costs to compensate.

Grace and Hotchkiss (1995), show that GDP is negatively related to premium and interest rates have a reverse effect on the underwriting profits. Brown et al. (2001) identified important economic and market factors and insurer specific characteristics related to the life insurer performance. In his paper, firm performance was positively related to the size and liquidity band portfolio returns whereas negatively related to anticipate inflation. Chen and Haung (2001) confirmed that a relationship exists among macroeconomic factors and premium receipt in the life insurance industry. Doumpos and Gaganis (2012) estimated the performance of non-life insurers and found that macroeconomic indicators such as gross domestic product (GDP) growth, inflation and income inequality influence the performance of firms.

The Geneva Association (2012) states that increasing unemployment rates are typically accompanied by a decline in per capita income. In this case the number of emergency surrenders would be likely to increase since people use their life insurance savings either as substitute or complement of benefits of unemployment insurance. This will definitely affect financial performance of insurance companies due to massive surrender. In this study, they recommend policymakers to ensure that macroeconomic stability is maintained. In particular they recommend that unemployment should not exceed established levels, stability of the currency needs to be maintained and high volatility of interest rates needs to be avoided.

Pervan et. Al (2014) investigated how insurance companies in Macedonia performed and according to the findings of panel analysis regarding the determinants of profitability, it was revealed that expense ratio (ER), claim ratio (CR), Size of the insurer, economic growth (GDP), and inflation have statistically significant influence on insurers' performance. Expense as well as Claims ratios (CR) have negative and statistically significant influence on insurers' profitability while size has a positive influence on the insurers' profitability. GDP growth positively affects insurers profitability i.e. growth of overall economic activity encourage demand for insurers services and indirectly result in higher insurers income while Inflation on profitability is statistically significant and negative, suggesting that higher levels of inflation cause higher interest rates and lower bond prices which in turn reduce portfolio returns.

2.4 Review of Empirical Studies

Profitability in industries is influenced by both internal factors (firms' specific characteristic) and external factors (concern both industry and macroeconomic variables). The literature review is about the effect by macroeconomic variables on profitability.

Outreville (1990) assessed the link among property liability insurance (general insurance) in terms of premiums and gross domestic products and financial development. The results indicated that income in terms of GDP and financial development had a significant contribution to the development of property liability insurance demand in less developed economies. Browne et al. (1993) found that average life expectancy, dependency ratio and enrolment ratio at third level of education were not significant in assessing life insurance demand, they found that income and social security expenditures were

significant factors of insurance demand but inflation was found to have inverse link. Dummy variable of religion indicated that Muslim countries have significant inverse association towards life insurance.

Ugur and Ramazan (2005) in a study on the effect of inflation on return on stocks in Turkey from 1986 to 2000 reveal that expected inflation and real returns are not correlated. The results suggest there is a negative relationship between inflation and stock returns which may be caused by the negative impact of unexpected inflation on stock returns. Li (2006) states high rate of inflation negatively effects the real economic growth and thus causes adverse consequences for economic performance at the aggregate level. However, the nature of relationship between inflation and economic growth and the channels through which inflation affects real economic activities is still a debatable issue.

Bräuninger and Pannenberg (2002), show that an increase in unemployment is associated with a decline in productivity growth in Europe and the U.S. during the period 1960-1997. Dell' Anno and Solomon (2008) find a negative correlation in the U.S. between quarterly changes in the unemployment rate and the quarterly growth rate of GDP between 1970 and 2004. Zagler (2006) finds that individual value added growth, measured by the GDP growth rate of the region and the sector in which the individual resides, has a negative impact on the individual unemployment rate, which captures the number of days a person spends being unemployed over the entire year. Using a panel of 15 industrialized countries covering the period 1965-1995, most empirical research shows that productivity growth has negative impact unemployment.

Akotey et.al (2012) performed an in depth analysis of the determinants of profitability of life insurance companies in Ghana and concluded that Life insurers' financial performance was measured by three parameters: investment income, underwriting profit and overall sales profitability. These parameters capture the key operations of life insurers. Usually the overall profitability is a summation of the investment income and the underwriting profit. That is the investment income must complement the underwriting profit towards the enhancement of the overall profitability of a life insurance company. The findings revealed that life insurers have been incurring underwriting losses which detract from their financial performance. The high underwriting losses as the results showed is due to overtrading, high claims payments and high managerial expenses. The study further showed that gross written premiums and total assets have a negative effect on investment income. This may be due to the excessive attention on marketing to grow premiums without a proportionate allocation of resources towards the management of their investment portfolios. This is evidenced in the low levels of investment income in the industry.

Ghimire (2013) did a study of the efficiency of non-life insurance industries in Nepal and concluded that the trend of expense ratio fluctuated over the five years period. The expense had decreased in last few years which were good indicator of financial efficiency of insurer. Combined ratio which is the combination of claim ratio and expense ratio, fluctuated during the period. The ratio of investment income and premium collection decreased drastically from 2007/08 which means insurance fund was not invested in comparatively profitable. The aggregate operating expense ratio increased from 2008/09

which means financial health of the insurance industry was failing the return on equity (ROE) and return on assets (ROA) both ratios increased for previous three years and remain constant in last two years. These trend shows that insurance industry had experienced sluggish growth and low rate of return after 2008/09

Kipngetich (2011) in his study of the relationship between interest rate and financial performance of commercial banks concluded that there is a positive relationship between interest rate and financial performance of commercial banks. Muchiri (2012) in his study the impact of macroeconomic variables on the performance of Nairobi Securities Exchange in Kenya, concluded that money supply and inflation rate had a positive but insignificant effects on share prices while interest rate had a negative but insignificant effect on share prices but found out that exchange rate has a significant impact on stock market performance.

Gikungu (2012) in his study the impact of macroeconomic variables on the performance of Nairobi Securities Exchange (NSE) concluded that there was a general rise in share prices, money supply, exchange rate, inflation, and interest rate over the period under study. The study also found that money supply and inflation rate had positive but insignificant effects on share prices while interest rate had a negative but insignificant effect on share prices. Further, exchange rate has a negative and significant effect on share prices. The variables jointly accounted for 95.6% of the variance in share prices. The F statistic was also significant suggesting that the model was fit to explain the determinants of share prices. The study also concludes that exchange rate has a

significant negative impact on stock market performance. The study recommends that in order for the stock market performance in Kenya to improve, there is need for the Government to initiate measures that will control the exchange rate in Kenya. The study also recommends that there is also need for the Government to control the broad money supply in Kenya as there is some evidence to suggest that higher money supply may lead to better stock market performance. The study further recommends that there is need for the government to initiate policies that will lower the interest rates in Kenya as lower interest rates may translate to higher stock market performance.

Illo (2012) conducted a study on effect of macro-economic factors on financial performance of commercial banks in Kenya. The study use ROA which was regressed against the macroeconomic variables including GDP growth rate, exchange rate (US dollar) the money supply (M3), inflation (CPI), and lending rate of the selected commercial banks. The study found out that financial performance of commercial banks as measured by ROA was found to be positively correlated with money supply (M3), lending interest rate of individual banks, GDP growth and inflation but negatively correlated with exchange rate.

Mwangi (2013) conducted study on effect of macroeconomic variable on financial performance of aviation industry in Kenya. The macroeconomic variables included real exchange rate (USD/Ksh) GDP growth rate, exchange in money supply (M3), and average annual lending interest rate as computed by CBK and inflation rate measured by annual percentage changes in the consumer price index/CPI. The study revealed that

ROA of aviation has a weak positive insignificant correlation with GDD growth and annual change in money supply M3; it also found that ROA has a weak negative significant correlation with exchange rate, annual average lending rate and annual average inflation.

Muya (2013) investigated factors that determine financial performance of insurance companies in Kenya and concluded that fluctuations in interest rates affect the financial performance of insurance companies both ways, because it affects the rate of borrowing as well as the rate of return on investments. Profitability as an indicator of financial performance enables insurance companies to invest in viable ventures while avoiding the too risky ones. Competition was found to have an effect on insurance company's financial performance especially through the prices and innovation in new products. Liquidity affects financial performance of insurance companies and this is why the insurance companies have liquid investments. They help them to settle claims especially if their underwriting income cannot cover claims. He recommended that insurers should invest in financial analysts so that they can gauge when interest rates can work in their favor in increasing their income.

2.5 Summary of Literature Review

This chapter has covered past studies as well as theoretical frameworks on effect macroeconomic variables on financial performance of different industries and economy in general, with the objective of gaining a deeper understanding of the history, evolution, direction and gaps in earlier studies. . In theoretical review the researcher covered

Modern Portfolio theory which shows the need and how insurance firms can select efficient investment by analyzing various possible portfolio of given securities, Arbitrage Pricing theory which helps insurance firms to derive a model of how to price their policies assuming insurance policies are financial investments and Black Swan theory which shows the Importance of entrepreneurs' including Insurance cost in their expenses even if the probability of their occurrence are rare and difficult to predict because the impact in case of occurrence are high.

In the review of empirical studies, Grace and Hotchkiss (1995) show that GDP is negatively related to premium and interest rates have a reverse effect on the underwriting profits. Brown et al. (2001) in his paper concluded that firm performance was positively related to the size and liquidity band and portfolio returns whereas negatively related to anticipate inflation. Chen and Haung (2001) confirmed that a relationship exists among macroeconomic factors and premium receipt in the life insurance industry. Doumpos and Gaganis (2012) found that macroeconomic indicators such as gross (GDP) growth, inflation and income inequality influence the performance of firms. The Geneva Association (2012) states that increasing unemployment rates are typically accompanied by a decline in per capita income, the number of emergency surrenders would be likely to increase since people use their life insurance savings either as substitute or complement the benefits of unemployment insurance. This will definitely affect financial performance of insurance industry due to massive surrender.

The review of literature clearly found a research gap in Kenya as most of the studies done in the area had focused on three to four variables in different sectors; this current study therefore narrows the gap by establishing financial performance of insurance industry relate with specific macroeconomic variables.

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

This chapter deals with the research design which were used to conduct the study, the population of the study and sample size used as well as data collection method, data analysis and model specification that were used to arrive at conclusions regarding the relationship between macroeconomic variables and financial performance of insurance Companies in Kenya.

3.2 Research Design

Claire et al, (1962) describes research design as the arrangement of conditions for collection and analysis of data in a manner that aims to combine relevance to the research purpose with economy in procedure.

Descriptive correlation research design was applied. According to Dusan Rijbarova (2005) descriptive correlational study measures two or more variables as they exist naturally and the goal is to establish that a relationship exists between variables. This research design was used to obtain information concerning the current status of the phenomena to describe what exists with respect to variables or conditions in a situation (Mwangi, 2013). It involves range from the survey to the correlation study which investigates the relationship between variables (Key, 1997).

The researcher used time series empirical data on the variables to examine the relationship between selected macroeconomic variables i.e. interest rate, exchange rate, inflation rate, GDP, money supply, claim ratio, expense ratio and size of the company by establishing correlation coefficient between the variables and financial performance of companies in insurance industry in Kenya measured by ROA. Where ROA will be the dependent variable and the selected macroeconomic variables will be the independent variables. This method captures most of the objectives of the study hence reasons for selection.

3.3 Population

The population of study comprised all 46 insurance firms licensed in Kenya by year 2013 (see appendices). Therefore a census study was carried out due to small size of the population. The study covered a period of five years starting from 2009 to 2013 financial statements.

3.4 Data Collection

The study utilized secondary data from World Bank, CBK, NSE, IRA and AKI websites and financial statements from the stated insurance companies (See appendices).

3.5 Data Analysis

Data collected was quantitative in nature from secondary sources. Descriptive statistical tool helped to describe the data and determine the extent used analysis was quantitative and qualitative. This included frequency distribution, tables, percentages mean, mode,

median, standard deviation, correlation, SPSS, Microsoft Excel, percentages, tabulation, exams and other central tendencies. Test of significance was 5%.

Tables were used to summarize responses for further analysis and comparison. This generated quantitative reports through tabulations, percentages and measure of central tendency. Cooper and Schindler (2003) notes that the use of percentages is important because they simplify the data by reducing all the numbers to range between 0 and 100 and they translate data into standard form with a base of 100 for relative comparison. The mode of presenting information was graphs and tables.

The independent variables being measured in this research were interest rate, inflation rate (CPI), real exchange rate, GDP, and money supply. Also other determinants of financial performance of Insurance Industries like Claim ratio, Expense ratio and size of insurance companies. A multiple regression models were used to test relationship among (independent variables on financial performance (ROA)).

The regression equation to be used in this research will be

Y=

$$\beta_0 + \beta_1 X_1 + \beta_2 X_2 + B_3 X_3 + B_4 X_4 + B_5 X_5 + B_6 X_6 + B_7 X_7 + B_8 X_8 + \varepsilon$$

Where

Y = ROA

β_0 = Constant of profitability i.e. the intercept

X_1 = Interest rate in percentage per year

X_2 = Inflation rate (Consumer Price Index)

X_3 = Real Exchange Rate of Ksh against US Dollar

X_4 = Gross Domestic Product growth

X_5 = Money Supply

X_6 = Claim ratio

X_7 = Expense ratio

X_8 = Size of insurance company

ε = the error term

$\beta_1, \beta_2, \beta_3, \beta_4, \beta_5, \beta_6, \beta_7, \beta_8$, = The coefficient of the explanatory variable of macroeconomic variables i.e. $X_1, X_2, X_3, X_4, X_5, X_6, X_7$, and X_8 .

Where the Macroeconomic variables will be subjected to the following measures

Return on Assets (ROA): will be measured as Net Income divided by Average Total Asset: $ROA = \text{Net Income} / \text{Average Total Assets}$.

Interest rate: will be measured as the base lending interest rate as computed by CBK.

Inflation rate: will be measured by the annual percentage changes in the consumer price index (CPI).

Real Exchange Rate: will be measured as the nominal exchange rate between USD and

KSh **GDP growth:** will be measured as change in total economic activity within an economy i.e. Measure of the final output of goods and services.

Money supply: will be measured as annual change in money growth of M3

Claim ratio: will be calculated as claims incurred divided by gross premiums

Expense ratio: will be calculated as management expenses divided by gross premiums

Size of insurance company: value total assets.

CHAPTER FOUR

DATA ANALYSIS, RESULTS AND DISCUSSION

4.1 Introduction

This chapter focused on the analysis of the collected data to establish the relationship between macro-economic variables and financial performance of insurance companies during the period 2009-2013. The results were analyzed using descriptive statistics, tabulated and graphically presented as shown in the following sections.

4.2 Data Presentation

This section presents the descriptive findings of this study, measures of central tendency, the trends analysis including average interest rate trend, average inflation trend, real exchange rate trend, money supply trend, and claim ratio and expense ratio trend.

4.2.1 Descriptive statistics

From the analysis of table 4.1, it was found that money supply has the largest mean of 58.86 and standard deviation of 12.99, interest rate 16.23 and standard deviation of 2.225. Size of the company and expense ratio has the lowest mean of 0.2518 and 0.1634 and standard deviation of 0.74 and 0.0152 respectively. The growth domestic product mean is 3.05 and standard deviation of 0.58, real exchange rate has a standard deviation of 0.8298 and standard deviation of 0.046.

Table 4.2.1 Descriptive statistics

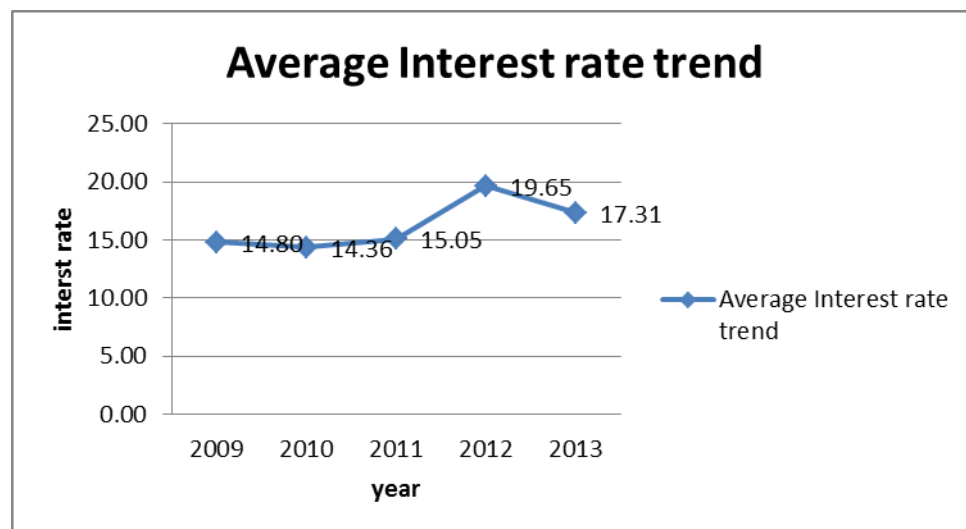
	Mean	Std. Deviation
Interest rate (% per year)	16.2340	2.22469
Inflation rate (% per year)	8.1260	5.03873
Real exchange rate (% per year)	.8298	.04556
GDP (% per year)	3.0520	.57890
Money supply (% per year)	58.8600	12.99588
Claim ratio (% per year)	.4776	.04022
Expense ratio (% per year)	.1634	.00152
Size of the company (% per year)	.2518	.07441
ROA (% per year)	.3468	.02603

Source: Research Findings

4.2.2 Average trend analysis

From the analysis of the industry interest rate trend, it was found that the industry lending rate decreases between 200 and 2010 with a sharp increase in 2012. Furthermore the interest rate decreases gradually between 2012 and 2013 respectively.

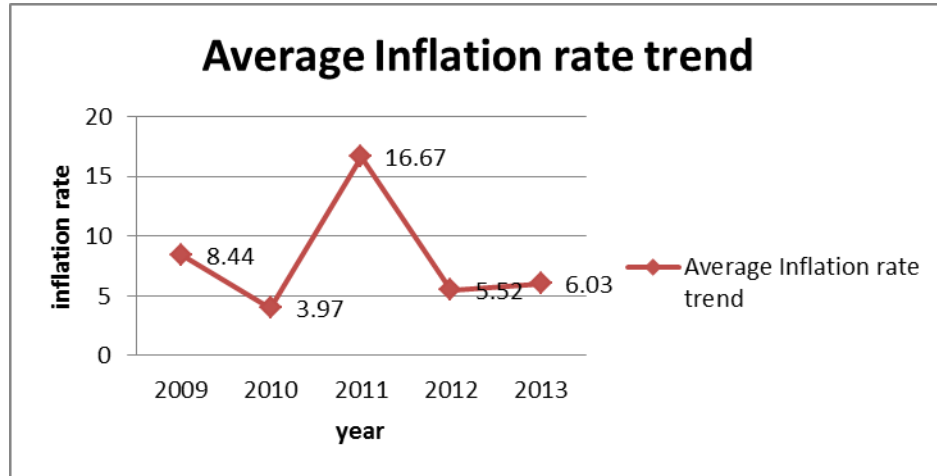
Figure 4.2.1 Average interest rate trends



Source: Research Findings

From the analysis of inflation rate trend, it was found that inflation rate drastically decrease significantly between 2009-2010 with drastic increase between 2010 and 2011 to 16.67%. Furthermore the inflation rate decreases drastically to 5.52% in 2012 On average.

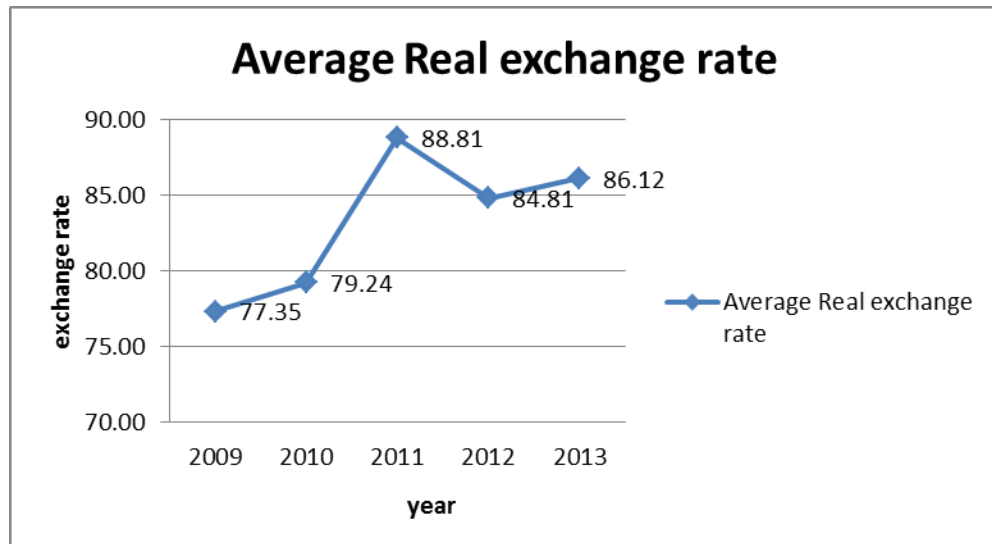
Figure 4.2.2 Average inflation rate trends



Source: Research Findings

From the analysis of real exchange rate trend, it's very clear that exchange rate increases between 2009 and 2011 leading to loss in value of the Kenya shilling compared to dollar value. The exchange rate decreases between 2011 and 2012 with a slight loss in value in 2013.

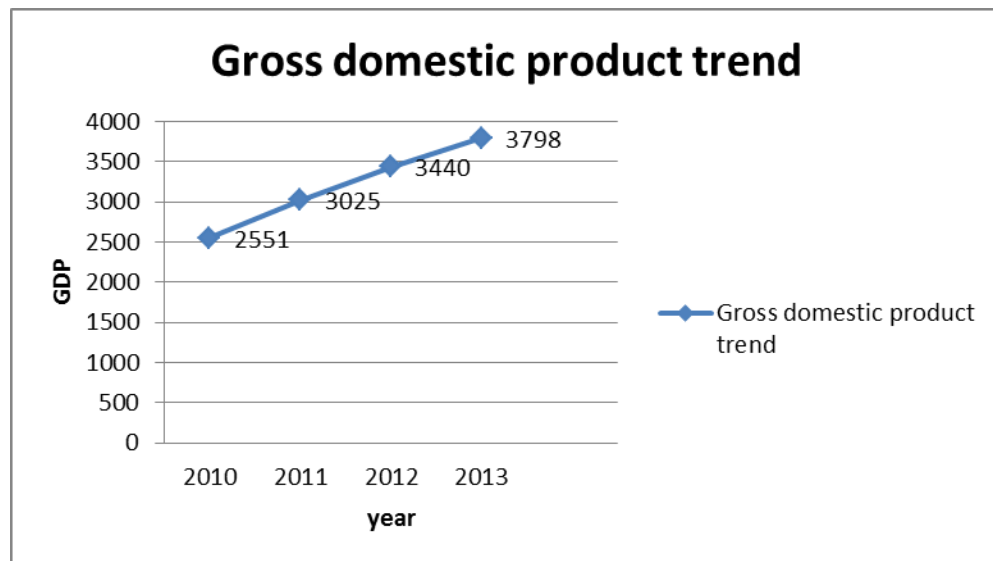
Figure 4.2.3 Average real exchange rate trends



Source: Research Findings

It's very clear that gross domestic product increases significantly between 2009 and 2013 with a high of 3798 billion in 2013. This indicates 10.41% increase in 2013 from 2012.

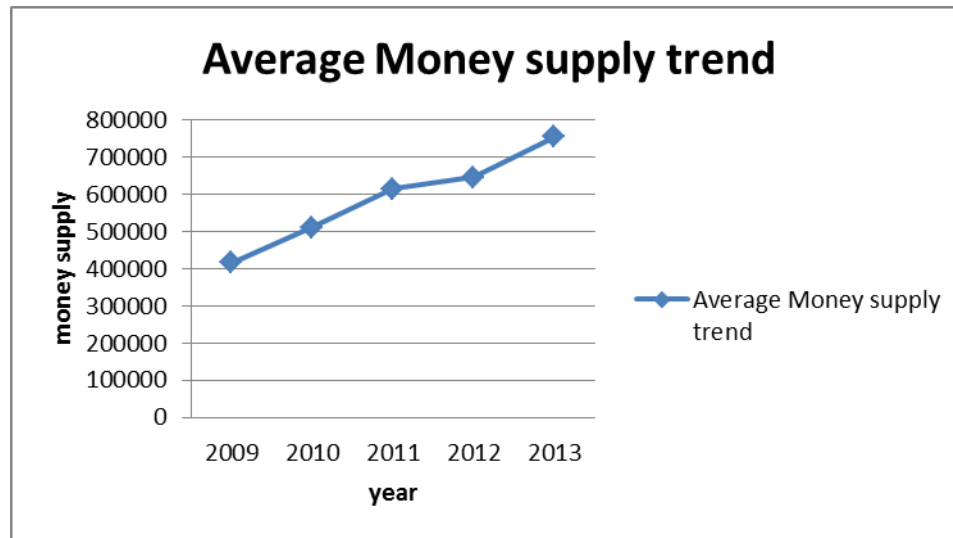
Figure 4.2.4 Average real exchange rate trends



Source: Research Findings

From the analysis of money supplied to the economy by the central bank of Kenya, it was revealed that money supply has minimal fluctuations from 2009 and 2013 with insignificant decrease between 2011 and 2012 as shown by the results.

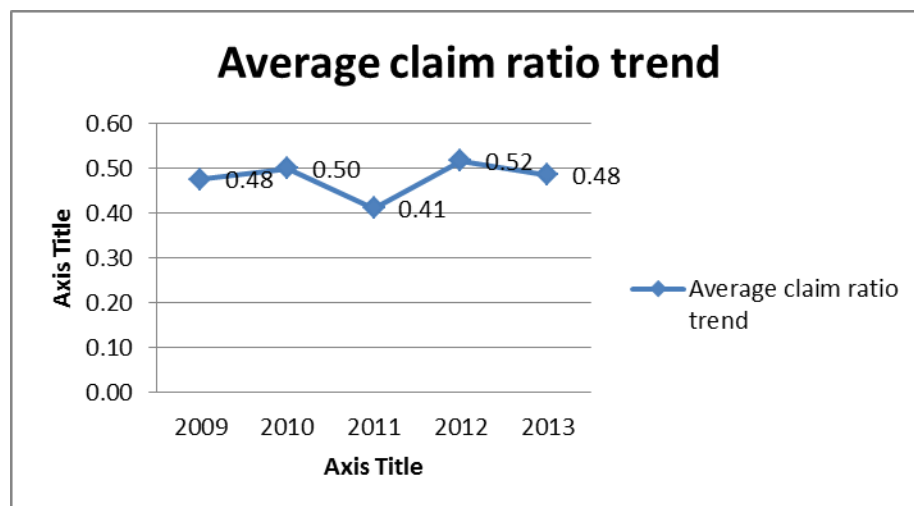
Figure 4.2.5 Average money supply trends



Source: Research Findings

The claim ratio trend fluctuates largely for the period considered in this study, there is slight increase between 2009 and 2010 with slight decrease between 2010 and 2011. The ratio increases equally in 2012 followed by insignificant decrease in 2013

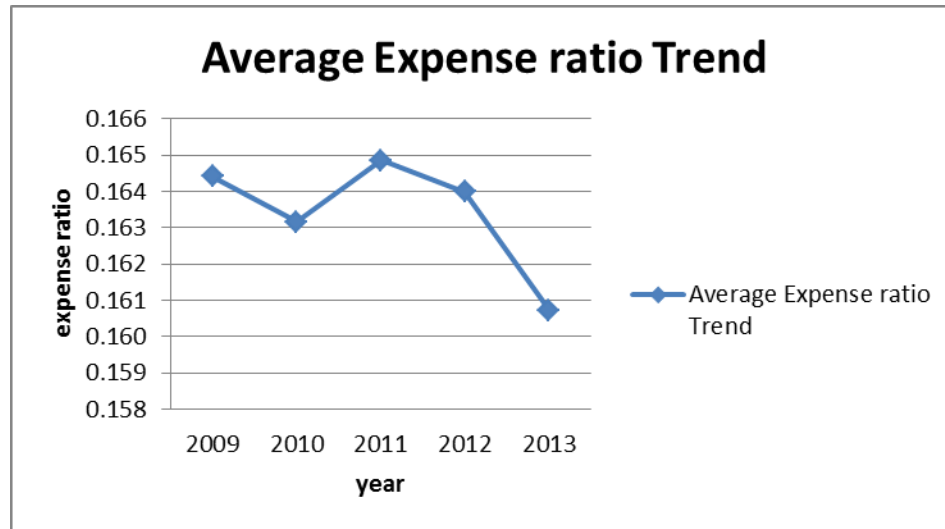
Figure 4.2.6 Average claim ratio trends



Source: Research Findings

From the analysis of the expense ratio, it was revealed that the management expenses compared to gross industry premium decreases drastically for the period with slight increase between 2010 and 2011 followed by consistent decrease between 2011 and 2013.

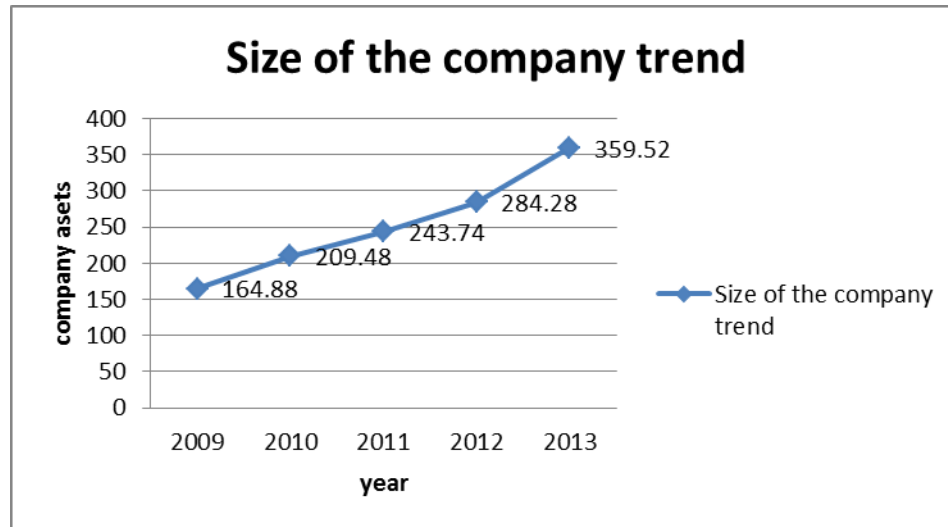
Figure 4.2.7 Average expense ratio trends



Source: Research Findings

From the analysis of the industry size measured by the company's total number of assets it was found that, the industry assets growth follows upward trend between 2009 and 2013 with a sharp increase in 2013.

Figure 4.2.8 Average sizes of the company trends



4.2.3 Correlation Analysis

Correlation analysis is used to establish if there exists a relationship between two variables which lies between (-) strong negative correlation and (+) perfect positive correlation.

Table 4.2.2 Correlation analysis

	Interest rate	Inflation rate	Real exchange rate	GDP	Money supply	Claim ratio	Expense ratio	Size of the company	ROA
Interest rate	1								
Inflation rate	-.311	1							
Real exchange rate	.400	.523	1						
GDP	.767	-.101	.757	1					
Money	.641	-.006	.836	.977**	1				

supply

Claim ratio	.498	-.960**	-.477	.145	.015	1			
Expense ratio	-.188	.621	-.020	-.519	-.503	-.456	1		
Size of the company	.667	-.156	.724	.984**	.982**	.150	-.637	1	
ROA	.576	-.867	-.485	.101	-.059	.969**	-.270	.064	1

** . Correlation is significant at the 0.01 level (2-tailed).

From the analysis of the relationship between return on asset and independent variables it was found that, it exists a positive insignificant relationship between return on assets and interest rate ($p=0.576$, $p>0.05$), return on asset and claim ratio ($p=0.969$, $p<0.05$), return asset and gross domestic product ($p=0.10$, $p>0.05$), return on assets and return on assets and size of the company ($p=-0.064$, $p>0.05$) respectively with a negative correlation between return on asset and inflation rate ($p=-0.867$, $p>0.05$), return on assets and real exchange rate ($p=-0.485$, $p>0.05$), return on asset and expense ratio and money supply. There exist a positive correlation between interest rate and real exchange rate ($p=-0.40$, $p>0.05$), interest rate and gross domestic product ($p=0.767$, $p>0.05$), interest rate and money supply ($p=0.641$, $p>0.05$), interest rate and claim ratio ($p=0.498$, $p>0.05$), interest rate and size of the company ($p=0.667$, $p>0.05$) while the findings revealed that there exists a negative correlation between inflation rate and interest rate ($p=-0.311$, $p>0.05$) and interest rate and expense ratio ($p=-0.188$, $p>0.05$).

Table 4.2.3 Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.351	.732	-.002	.145

Source: Research Findings

This table indicates that there is an R^2 value of 73.2%. This value indicates that independent variables explain 73.2% of the variance of dependent variable changes. It's very clear that these independent variables contribute to a large extent insurance company's level of performance. It is therefore sufficiently to conclude that these variables significantly influence financial performance of companies given the unexplained variance is only 39.7%.

Table 4.2.4 Analysis of Variance (ANOVA)

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	.090	6	.015	2.943	.0498
	Residual	.207	13	.016		
	Total	.298	19			

Source: Research Findings

Given 5% level of significance, the numerator df =6 and denominator df =13, critical value 2.74, table 4.2.3 shows computed F value as 2.943. This confirms that over allly the multiple regression model is statistically significant, in that it is a suitable prediction model for explaining how the selected independent variables influences insurance company's financial performance.

Table 4.2.5 Regression Model

Model	Unstandardized Coefficients		Standardize d Coefficients	t	Sig.	95.0% Confidence Interval for B	
	B	Std. Error	Beta			Lower Bound	Upper Bound
1 (Constant)	-.528	.318		-1.306	.214	-1.137	.280
Interest rate	.073	.041	.279	1.327	.027	-.040	.166
Inflation rate	-.186	.122	-.446	-1.526	.151	-.451	.077
Exchange rate	.013	.013	.413	1.458	.169	-.016	.083
Money supply	-.002	.054	-.008	-.400	.696	-.138	.095
GDP	.068	.040	.463	.946	.031	-.061	.156
Claim ratio	.018	.116	.023	.167	.000	-.210	.246
Expense ratio	.024	.108	.024	.198	.001	-.345	.361
Size of the asset	.452	.021	.214	.247	.412	.211	.238

Source: Research Findings

Where x1 = interest rate, x2 = inflation rate, x3 = exchange rate, x4 = money supply, x5 = GDP, x6 = claim ratio, x7= expense ratio and x8= size of the asset. Using a significance level of 5%, any independent variable having a significant value greater than 5% is considered not statistically significant. This study found that x1, x5, x6 and x7 are statistically significant while x2, x3, x4 and x8 with significance of more than 5% are not statistically significant. This reveals that x1, x5, x6 and x7 are suitable predictors of insurance company's financial performance. That means that for every unit increase in total assets the company's performance increases by 0.214 units and taking all variables constant at zero, ROA will be negative 52.8%. At 5% level of significance and 95% level of confidence.

The general multiple regression model for this study will be

Y=

$$\beta_0 + \beta_1 X_1 + \beta_2 X_2 + B_3 X_3 + B_4 X_4 + B_5 X_5 + B_6 X_6 + B_7 X_7 + B_8 X_8 + \varepsilon$$

Which becomes:

$$Y = -0.528 + 0.279x_1 + -0.446x_2 + 0.413x_3 + -0.008x_4 + 0.463x_5 + 0.023x_6 + 0.024x_7 + 0.214x_8.$$

4.3 Summary and Interpretation of Findings

The results (Table 4.2.4) established that ROA and annual average lending interest rate had a positive impact in that a unit change in lending interest rate will lead to a 0.279 increase in ROA. This finding is consistent with the empirical finding of Mwangi (2013) and Kipngetich (2011). At 5% level of significance and 95% level of confidence, the study found that ROA and annual average lending interest rate had insignificant level of 0.33 and 0.273 respectively. The result shows that annual average lending interest rate did not have a significant impact on return on assets of Insurance companies in Kenya.

The results further shows that ROA and Inflation rate (CPI) had a negative impact in that a unit change in inflation rate will lead to a -0.446 change in ROA thus inverse relationship. This finding is consistent with empirical finding of Cheechee (2002), who in his study found out that Inflation rate is hypothesized to be negatively related to the demand for life insurance. The rate of change in the price index (CPI) negatively affects financial performance of insurance companies in Kenya.

The results also show that Claim ratio had a positive relationship with ROA in that a unit change in claim ratio will read to a 0.023 change in ROA, this is because if insurance products which are sold lead to moral hazard, adverse selection and high outstanding premiums, then high claims will have to be financed through other sources of revenue such as investment income so insurance firms tend to invest more if claims are high leading to more income from investment. These results are consistent with the findings of Akotey (2012) who concluded that investment performance becomes critical to the financial solidity of an insurer. Kim et al. (1995) and Kramer (1996) found that investment performance is negatively correlated to insolvency rate. That is, in the absence of investment income, huge claims can lead to insolvency in the insurance industry.

The results further shows that expense ratio had a positive relationship with ROA in that a unit change in expense ratio will lead to a 0.024 change in ROA, these result are consistent with the findings of Akotey (2012) who argues that that an increase in expenses on management operations has a direct influence on the capacity of an insurer to identify and invest in profitable portfolios in order to increase investment income hence positively affecting ROA.

Size of the company which was measured as total assets of a company had a positive relationship with ROA in that a unit increase in assets will lead to a 0.214 change in ROA. Akotey (2012) states that an increase in total assets such as the establishment of more branches and the adoption of new technologies enables an insurer to underwrite

more policies which may increase the underwriting profit and the total net profit. This is in confirmation of similar discoveries by Chen and Wong (2004) and Ahmed et al (2011) about the Pakistani insurance industry.

The findings of the research indicate that there is evidence that foreign exchange, interest rate and inflation rate have significant effects on the performance of Insurance companies in Kenya these findings are consistence with the findings of Osoro & Ogeto (2014) and Olweny and Omondi (2011) in their studies on impact of macroeconomics on performance of construction and manufacturing sectors and stock market respectively.

Money supply had a negative relationship with ROA in that a unit increase in money supply will lead to a -0.008 decrease on ROA. This implies that when the CBK increases money supply, households get more money at their disposal and therefore households do not invest much on Insurance products. This is consistent with other studies Illo (2012) found that the variable significantly affects the bank's profitability .But inconsistence to the findings of Mwangi (2013) who found that money supply (M3) did not have a significant impact on return on assets of companies in aviation industry.

CHAPTER FIVE

SUMMARY, CONCLUSION AND RECOMMENDATIONS

5.1 Introduction

This chapter the summary of the results in this study, conclusions and recommendations for practice and suggestions for further research

5.2 Summary

The objective of this study was to establish the relationship between macro-economic variables and financial performance of insurance companies between 2009 and 2013. The results were analyzed using descriptive statistics and the relationships between the variables were investigated using correlation analysis, measures of central tendency and the trends analysis. From the analysis of descriptive statistics it was found that money supply and interest rate have the largest mean. Size of the company and expense ratio has the lowest mean respectively followed by growth domestic product mean and real exchange rate mean.

From the analysis of the industry trends it was showed that interest rate trend, decreases between 2009 and 2010 with a sharp increase in 2012 with a decreases between 2012 and 2013 respectively while inflation rate trend, it was found that inflation it decreases significantly between 2009-2010 with increase between 2010 and 2011 followed by a decrease in 2012. From the real exchange rate trend, it's was very clear that exchange rate increases between 2009 and 2011 with a decrease between 2011 and 2012 and insignificant decrease in 2013.

Money supplied to the economy by the central bank of Kenya, it was found that money supply has minimal fluctuations from 2009 and 2013 with insignificant decrease between 2011 and 2012 while claim ratio trend fluctuates largely for the period considered in this study with slight increase between 2009 and 2010 followed by slight decrease between 2010 and 2011. The expense ratio showed that management expenses compared to gross industry premium decreases drastically for the period with slight increase between 2010 and 2011 followed by consistent decrease between 2011 and 2013. Lastly industry size measured by the company's total number of assets it was found that, the industry assets growth follows upward trend between 2009 and 2013 with a significant increase in 2013.

5.3 Conclusion

Given 5% level of significance the computed F value was 2.943. This confirms that overall the multiple regression model is statistically significant, in that it is a suitable prediction model for explaining how the selected independent variables influences insurance company's financial performance. This study also found that interest rate, money supply, claim ratio and expense ratio are statistically significant with inflation rate, and real exchange rate and size of asset with significance of more than 5% are not statistically significant. This reveals that interest rate, money supply, claim ratio and expense ratio are suitable predictors of insurance company's financial performance. That means that for every unit increase in total assets the company's performance increases by 45.2 percent.

From the correlation analysis it was found that there exists a positive relationship between return on asset and interest rate ($p=0.576$, $p>0.05$), return on asset and claim

ratio ($p=0.969$, $p<0.05$), return asset and gross domestic product ($p=0.10$, $p>0.05$) and return on assets and size of the company ($p=-0.064$, $p>0.05$) respectively with a negative correlation between return on asset and inflation rate ($p=-0.867$, $p>0.05$), return on assets and real exchange rate ($p=-0.485$, $p>0.05$), return on asset and expense ratio and money supply. There exist a positive correlation between interest rate and real exchange rate ($p=-0.40$, $p>0.05$), interest rate and gross domestic product ($p=0.767$, $p>0.05$), interest rate and money supply ($p=0.641$, $p>0.05$), interest rate and claim ratio ($p=0.498$, $p>0.05$), interest rate and size of the company ($p=0.667$, $p>0.05$) while the findings revealed that there exists a negative correlation between inflation rate and interest rate ($p=-0.311$, $p>0.05$) and interest rate and expense ratio ($p=-0.188$, $p>0.05$).

5.4 Recommendations

The study recommends that in order for the Insurance companies in Kenya to improve, there is need for the Insurance Regulatory Authority (IRA) being the regulator of the industry to initiates policies measures that will control the exchange rate in Kenya. Lower exchange rates would be more appropriate for companies in the Insurance industry in Kenya to perform better since they are negatively correlated with financial performance of these companies.

The study also recommends that there is also need for the Government to control the broad money supply in Kenya as there is some evidence to suggest that higher money supply may lead to better performance of companies in the insurance industry in Kenya. This may be attributed to high disposable income by individual thus consuming services offered by Insurance companies.

The study further recommends that there is need for the IRA to initiate policies that ensure lower inflation rate in the economy and create an insurance pool that will provide a low average lending interest rates which will improve the financial performance of companies in insurance industry as they are negatively correlated with each other. Lower interest rates will help improve the liquidity in the general sector and therefore lead to more investments and consumption

5.5 Limitations for the Study

Limited time used and resource constraints, which is includes finances move from one point to another when collecting data for this study was tiresome and thus industry data was considered and involved in this study.

Another limitation in the course of the study was the limited access to the information especially the primary data which led to the use of secondary data in this study which was difficult and challenging to edit code and analyze.

The analysis multiple models involved in this study was difficult and inadequate to provide required explanation on the relationship between insurance performance indicators and financial performance because it relied on the limited number of factors while performance depends on many factors from different dimensions.

5.6 Suggestions for Further Research

For this kind of research, more time need to be spent to be able to collect company's individual data and analyze it to provide more variables which influence the financial performance of companies. In addition, a comparative study is suggested to be carried out with insurance companies listed at Nairobi securities exchange and companies not listed.

The study mainly used secondary data to gather information for the research project. Further researches should be done through primary data. Primary data is the first hand and accurate and reduces biases that would otherwise be experienced when using secondary data.

A case study can be conducted based on one of the large insurance companies. Upon undertaking a case study, the researcher should evaluate the results to test whether there is consistency and uniformity from the past researches and this research as well. Finally the researcher should either replicate the results achieved regarding the insurance performance indicators of insurance companies in Kenya.

This study also suggest that further study especially a comparative study can be conducted by comparing the factors affecting the financial performance of insurance companies from different sectors areas and suggestion for the same and more advanced multiple analysis model employed to show the exact relationship and differences on the performance.

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APPENDICES

Appendix I: List of Insurance companies in Kenya

THE INSURANCE ACT (Cap.487) LICENSED INSURANCE COMPANIES In
Pursuance of section 184 of the Insurance Act, the Commissioner of Insurance
Published list of registered insurance companies for the year 2013.

No.	Name
1	AAR Insurance Kenya Limited
2	APA Insurance Limited
3	Africa Merchant Assurance Company Limited
4	Apollo Life Assurance Limited
5	AIG Kenya Insurance Company Limited
6	British-American Insurance Company (K) Limited,
7	Cannon Assurance Limited
8	CfC Life Assurance Limited
9	CIC General Insurance Limited
10	CIC Life Assurance Limited
11	Corporate Insurance Company Limited
12	Direct line Assurance Company Limited
13	Fidelity Shield Insurance Company Limited
14	First Assurance Company Limited
15	GA Insurance Limited
16	Gateway Insurance Company Limited
17	Geminia Insurance Company Limited
18	ICEA LION General Insurance Company Limited
19	ICEA LION Life Assurance Company Limited
20	Intra Africa Assurance Company Limited
21	Invesco Assurance Company Limited
22	Kenindia Assurance Company Limited
23	Kenya Orient Insurance Limited
24	Kenya Reinsurance Corporation Limited
25	Madison Insurance Company Kenya Limited
26	Mayfair Insurance Company Limited
27	Mercantile Insurance Company Limited
28	Metropolitan Life Kenya Limited
29	Occidental Insurance Company Limited
30	Old Mutual Life Assurance Company Limited

31	Pacis Insurance Company Limited
32	Pan Africa Life Assurance Limited
33	Phoenix of East Africa Assurance Company Limited
34	Pioneer Assurance Company Limited
35	REAL Insurance Company Limited
36	Shield Assurance Company Limited
37	Takaful Insurance of Africa
38	Tausi Assurance Company Limited
39	The Heritage Insurance Company Limited
40	The Jubilee Insurance Company of Kenya Limited
41	The Kenyan Alliance Insurance Co Ltd
42	The Monarch Insurance Company Limited
43	Trident Insurance Company Limited
44	UAP Insurance Company Limited
45	UAP Life Assurance Limited
46	Xplico Insurance Company Limited

Appendix II: Actual Industry Data schedule

Year	2009	2010	2011	2012	2013
Average Interest rate trend	14.804	14.36	15.0492	19.65	17.309
Average Inflation rate trend	8.44	3.97	16.67	5.52	6.03
Average Real exchange rate	77.352	79.237	88.81	84.81	86.123
Gross domestic product trend	2365	2551	3025	3440	3798
Average Money supply trend	415751	511097	614386	646591	755329
Average claim ratio trend	0.47557	0.499621	0.411463	0.516215	0.484883
Average Expense ratio Trend	0.164418	0.163167	0.164847	0.163995	0.160735
Size of the company trend	164.88	209.48	243.74	284.28	359.52