RELATIONSHIP BETWEEN MACROECONOMIC VARIABLES AND FINANCIAL PERFORMANCE OF THE INSURANCE INDUSTRY IN KENYA

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DECLARATION

I declare that this research project is my original work and has not been submitted for examination to any other university.

Signature…… Date……

Esther Nyambura Ng'ang'a **REG No: D63/79191/2015**

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

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DEDICATION

This project is dedicated to all those who supported and encouraged me throughout the research period.

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LIST OF ABBREVIATIONS

AKI	Association of Kenya Insurers
CAPM	Capital Pricing Model
CBK	Central Bank of Kenya
CPI	Consumer Price Index
EBITDA	Earnings before interest tax depreciation and amortization
FPIs	Financial Performance Indicators
GDP	Gross Domestic Product
IRA	Insurance Regulatory Authority
KNBS	Kenya National Bureau of Statistics
Ksh	Kenya Shillings
NHIF	National Hospital Insurance Fund
NOl	Net Operating Income
NSE	Nairobi Securities Exchange
PHCF	Policyholders Compensation Fund
ROA	Return on Assets
ROCE	Return on Capital Employed
UK	United Kingdom
US	United States
$	Dollar sign

ABSTRACT

The aim of this research project was to establish the relationship between macroeconomic variables and the financial performance of the insurance industry in Kenya. Return on capital employed was used as the financial performance indicator. The financial performance was regressed against the macroeconomic indicators; average interest rates as computed by Central Bank rate, GDP growth rate, real exchange rate (Ksh/USD), inflation rate as computed by CPI and unemployment rate. Both the dependent and predictor variables were measured quarter yearly. A descriptive research design was employed in the research study. The study population comprised 49 insurance firms that are registered in Kenya by the year 2015. The study utilized secondary data that was collected quarter yearly. The data was collected from various sources; the World Bank, Central Bank of Kenya, Kenya National Bureau of Statistics and the industry financial statements as reported by IRA. The study was carried out in a ten year period from 2006 to 2015. The data was analyzed using multiple regression analysis, correlation analysis and descriptive analysis, using STATA software. The analyzed data was presented using tables and line graphs. The study found that GDP growth rate had a probability of (0.006<0.05) which is statistically significant while interest rates (0.4483>0.05), exchange rate (0.276>0.05), and un-employment rate (0.117>0.05) are statistically insignificant. Therefore interest rates, exchange rates and unemployment rates are not suitable predictors of the insurance industry's financial performance. It is crucial that other factors both micro-economic and industry specific are considered while undertaking another study in order to determine the drivers of performance of the insurance industry. The research study recommends that the CBK should keep inflation, exchange rates and interest rates in check. These variables have profound effect on the performance of the insurance industry. For instance high exchange rates, translates to devaluation of the local currency and will cause a decrease in the performance of the industry. The study also recommends that the government initiate policies and measures that increase the GDP which will lead to a positive effect on the industry and the economy as a whole.

CHAPTER ONE

INTRODUCTION

1.1 Background of the Study

Dorfman (1994) defined insurance as a financial risk management tool/arrangement that transfers the cost of unexpected losses to the insurer from the insured in exchange of premium. The broad objective of insurance is to pool the risk of a large number of insured and hedge against occurrence of losses due to uncertainties of the future. Most insurance companies however, have diversified to offering other financial services like investment, asset management and pension administration which allow for efficient money transfer between borrowers and savers.

Brainard (2008) states that insurance has a very crucial role in an economy. It is key to an economy's development due to its many advantages. The main benefit of insurance is its usefulness in promoting long-term financial stability and security of individuals and businesses. It therefore helps firms recover any financial losses that may be incurred due to occurrence of unexpected perils such as floods, automotive collisions, earthquakes, theft etc. Moreover, insurance is considered to be one of the essential financial services to an economic system.

Insurance in Kenya has existed for more than sixty years, and the initial insurance companies were under the ownership of the Europeans in the colonial era. The insurance industry is governed by the Insurance Act (1984). The industry is administered by the Insurance Regulatory Authority (IRA), which was set up in 2008. The industry operates under AKI (Association of Kenya Insurers), which was set up in 1987. Its main aim is to

create awareness among the public community, promote prudent and good business policies and practices and to increase growth of the insurance industry in Kenya. All registered insurance companies are allowed to join the association.

There are two reinsurance companies, East African Reinsurance Company and Kenya Reinsurance Corporation (Kenya Re), 49 insurance companies, 22 medical insurance providers and more than 84 insurance brokers regulated by IRA. Other key players regulated by IRA are; insurance agents, insurance brokers, loss adjustors, insurance investigators, motor assessors, insurance surveyors, risk managers and claim settling agents.

Mankiw and Barro (2008) defined macroeconomics as the study of the economy as a whole. The study states that the goal of macroeconomic study is to explain the fluctuations to a nation's economy that affect many firms, households and markets simultaneously. Economists monitor and investigate the state of the entire economy through macroeconomic variables, like unemployment rates, Gross Domestic Product (GDP), investment, consumption, etc. Macroeconomic factors are considered to impact any industry and hence, can be used to measure a society's overall economic healthiness.

Bhatia (2013) states that a number of macroeconomic variables such as inflation, population, GDP, unemployment and Per Capita income have both positive and negative effects on the demand growth of insurance services. The study found out that various aspects of insurance like penetration, uptake and density are significantly affected by the macroeconomic environment. Key factors affecting the growth of insurance density, growth of total insurance premium, uptake and insurance penetration include Per Capita GDP, GDP, population, unemployment and inflation.

Investopedia (2016) defines financial performance as the level of performance in which the financial objectives are being or have been met either in terms of profits and losses during a specified time period. It is the process of determining how well a firm can utilize fully its assets so as to make income for the business. It is not only used to compare similar companies in the same sector or the economy as a whole but is also used to measure a firm's overall financial well-being over a specified time period. The study will therefore seek to establish the relationship between macroeconomic variables and financial performance of the insurance industry in Kenya.

1.1.1 Macroeconomic Variables

Mankiw (2008) defined GDP as the sum of the worth of goods and services a country produces over a specific period of time. GDP is a key indicator of an economy's performance. GDP can be divided into four components; Consumption(C), which usually makes up the largest portion and refers to household consumption. The second component is investments (I), which refers to various investment projects undertaken by businesses like purchase of equipment and software. The third component is government expenditure (G), which refers to the total sum of government spending like paying civil servants' salaries. The fourth component is net exports (NX), which is simply the country's export less the imports. GDP therefore measures both a country's total expenditure and its total income on goods and services.

Mankiw (2008) recommends that the tool to be used to best measure inflation rate in an economy is, "Consumer Price Index (CPI)". He defined CPI as a measure of the value of goods and services purchased by a consumer or simply the value of goods and services in a consumers' basket. The inflation rate is then calculated as "the percentage change in the

price index from the preceding period". The study also breaks down other tools which can be used to measure inflation rate such as Producer Price Index (PPI) and GDP Deflator.

Harvey (2012) defined exchange rate as the amount you would have to part with in the local currency in order to obtain a foreign currency. It is therefore the price of one currency in terms of another currency or the conversion rate of one currency to another. Exchange rates can be fixed or floating. Fixed exchange rates are brought about by an arrangement/agreement between parties while floating exchange rates are set by the forces of demand and supply.

Ngugi (2001) states that the one of the most significant determinants of a company's performance is the interest rates. He continues to discuss that interest rates have significant effects on investment decisions, monetary policies, company profits, creation of job opportunities and capital generation. Ngugi describes interest rates as a reflector of market information regarding future inflation rates and any changes in the purchasing power of money. Interest rates can also be defined as the price of capital and can be used in the formation of more capital through attracting more savers. Lower interest rates also discourage investors since they will usually go for an alternative investment with a higher return. Interest rates are usually expressed as a percentage rate over one year and are a key aspect to any capitalist society.

Nissim (2010) argues that the available disposable income affects the demand for insurance products and also in turn affects the growth and financial performance of the insurance industry. Growth of the insurance industry like any other industry affects the economy over ally. It is crucial to note that one of the sources revenue for the insurance

industry is investment income, which is highly reactive to interest rates. This applies to both general insurance and long term insurance which invest in short term and long term investments respectively.

The Geneva Association (2012) states that unemployment is a matter of concern to all economies and that an efficient allocation and deployment of human resources requires that jobs and workers are matched appropriately, but the two are not always in sync leading to unemployment. It is important to however note that unemployment is not all evil for an economy; a specific rate of turnover and a certain rate of unemployment are healthy for efficient allocation of resources. Increasing unemployment rates are normally followed by a fall in per capita income. In this case the number of emergency surrenders would most likely increase since people use their life insurance savings either as substitutes or complements of benefits of unemployment insurance and uptake of other insurance products would decline. This will definitely affect gross premiums written of the industry due to massive surrender and reduction in uptake of insurance. The study recommends policymakers to ensure that economic stability is maintained and that there is efficient redistribution and allocation of resources. In particular it recommends that unemployment should be kept in check at certain levels, stability of the currency needs to be maintained and high volatility of interest rates needs to be tamed.

1.1.2 Financial Performance

Chen and Wong et al. (2004) defined financial performance as a measure of a company's earnings, revenues, appreciations in value for instance the increase in share price of a company or in terms of profits. Performance of a company is usually denoted by underwriting profits, return on investments, return on equity, annual turnover and net

premiums earned. The stated measures can be split into two; investment measures and profitability measures. Profitability measures are those measured in monetary terms which is the difference between incomes and expenditures. These two components of profitability measures are in turn affected by macroeconomic variables, industry-specific factors and firm-specific characteristics. Investment measures can be divided into two; in the first case, surplus cash earned from various operations will be invested and earn returns, the other is return earned from investment in non-cash assets.

Profitability is not the sole indicator of the performance of a company; in fact it is a relative measure on its own. It measures how efficiently an industry or a company makes income. This study will focus on return on capital employed (ROCE) as an indicator of financial performance. Return on capital employed refers to the net amount created from every amount of capital/equity employed. This is calculated by dividing net profit after tax by the shareholders equity. Total equity and long term liabilities makes up capital employed, which is also equal to total assets less current liabilities. To increase ROCE, a company will need to increase its profit after tax (net income) for instance through cost-cutting, or increase in gross income by increasing sales price or through payment of long term borrowings. Other financial performance indicators include EBITDA which refers to earnings before interest, tax and depreciation adjustment and amortization, net profit margin which refers to the net profit divided by turnover/sales and gross profit margin which is the gross profit as a fraction of turnover/sales.

1.1.3 Macroeconomic Factors and Financial Performance

Oliver (2000), states that macroeconomic variables do not necessarily affect a few selected individuals but instead affect the entire population, and that they are key aspects

of a broad economy at a national level. He showed from his study that financial performance is determined by some fundamental macroeconomic factors such as the money supply, interest rate, Gross Domestic Product (GDP), exchange rate, unemployment, stock market, inflation and FDI which are closely monitored by the government, businesses and consumers.

Empirical study of Christophersen and Jakubik (2014) reveal a significant correlation between unemployment and insurance companies' premiums and economic growth. Bekeris (2012) analyzed the financial performance of small and medium-sized enterprises in Lithuania. He studied the relationship between the financial performance (corporate profitability) and macroeconomic factors. The results showed that profitability is mostly affected by changes in interbank interest rates and unemployment rates.

Cristina (2015) states that the growth of the insurance industry is affected intensely by the economic environment. Profitability is affected by various macroeconomic indicators. The most frequently studied factors in research are inflation, interest rates and GDP growth rate. The study found out that high economic growth rate, good equity market performance, high interest rates and low inflation rates have a positive effect on the insurance financial performance through increase in profitability. The profitability of the insurance industry is also to a large extent affected by firm specific micro economic variables. Among them include; the claims incurred, the earned premiums, commission expenses, management expenses and investment income. However to some extent these variables are themselves affected by macroeconomic factors which have been discussed.

1.1.4 Insurance Industry in Kenya

The Kenya insurance market is governed by the Insurance Act (1984) and is administered by the Insurance Regulatory Authority (IRA), a semi-autonomous regulator, established in 2008. Insurance Industry Quarter one report (2016) shows that the gross premiums written by the industry was Kshs. 55 billion in quarter one 2016 compared to Kshs. 50 billion in quarter one 2015. These were largely driven by the general insurance segment that contributed a larger proportion of 68.6% (Kshs 37.92 billion) while the life segment contributed Kshs 17.35 billion. Growth experienced in the general insurance segment was higher than that in the life segment for the insurers.

KMPG (2015) found out that despite Kenya insurance market being well behind that of South Africa, it is one of the most highly developed in Africa. By end of 2013, total gross premiums written hit just over US$1.5 billion, having stabilized and maintained an annual average growth rate of 15.5% between the years 2005 to 2013. Between 2010 and 2013, Kenya's market has continued to grow at 15.1% per annum despite some markets slowing down over the recent past. In 2011 insurance penetration was at 2.46% and increased to 2.75 % in 2013. There are no very large companies in the industry and there is relative competition. There are some foreign companies which have some ownership stake in the local insurance companies, though full foreign ownership is not allowed.

Economic Survey (2016) states that uptake of insurance has grown to 23.2% by the population in 2015 from 4.3% in 2006. Growth in the insurance sector however, has been driven primarily by uptake of statutory health insurance from the NHIF (National Hospital Insurance Fund). The insurance industry's contribution to the GDP growth has

been consistently and significantly low, with 2011 being at 0.8%, 2014 at 2% and a decline in 2015 to 1.6%.

Kenya insurance Industry outlook (2013) states that going forward in 2013, capitalization levels, insurance claims, commissions and management costs, inflation and interest rates are likely to moderately impact on business performance. Also likely to impact business, despite measures being put in place by Central Bank of Kenya, is the devaluation of the Kenyan currency against major currencies owing to developments in the first quarter of the year especially the general election. Finally, profitability is expected to increase though at small rates and the insurance rates are likely to decrease but at small rates as well.

KNBS Economic Survey (2016) states that in 2015 the Gross Domestic Product (GDP) growth rate hit 5.6% compared to 5.3% growth in 2014. Significant growth in some crucial sectors of the economy like real estate, financial sector, insurance sector, construction sector and the agricultural sector contributed to the expansion of the GDP in 2015. However, the insurance industry's contribution to the GDP growth has been consistently and significantly low, with 2011 being at 0.8%, 2014 at 2% and a decline in 2015 to 1.6%. Lower transport and energy prices contributed to easing of the inflation rate in 2015 to 6.6% from 6.9% in 2014. In 2015 the Kenyan shilling increased its value against the Japanese yen, South Africa Rand and the Euro but lost value against the world's major trading currencies like the USD.

1.2 Research Problem

Cristina et al. (2015) state that like any other industries, the insurance industry is affected by various macroeconomic variables such as unemployment, interest rate, inflation, Gross Domestic Product (GDP), fluctuations in exchange rates and money supply. Macroeconomic factors affect the pricing and in effect premiums received. Firms and individuals need to be informed about the available insurance options to enable them come up with strategic policies and actions to deal with any adverse macroeconomic effects. The study also states that there are other factors that are not firm-specific and not necessarily macroeconomic that also affect the industry. Such factors include the political environment, social factors like cultural practices and climatic changes.

IRA, Kenya insurance industry outlook (2013) states that the industry has room for growth since it is operating at an average capacity indicating that there is the need for it to be reenergized to a higher level of operation. The Kenya insurance industry's contribution to the gross domestic product in 2015 stood at 1.6% a decline from 2% in 2014. There is therefore need to establish policies and measures that will cause improved performance of the insurance industry, given the low contribution it has to the economy's GDP, low penetration and low uptake.

Some of the challenges affecting the industry include inappropriate staff skills in some areas, premium rate undercutting, selling of insurance on credit, delays in premium collection, settlement of claims in terms of volume and costs of settlement, customer retention and fraud and quality of intermediary services. Price wars and charging of unsustainable premiums by insurance industry players has resulted from competition for market share.

Some studies that have been done previously, have been on the effect of interest rates on performance of insurance industry, others have focused on banks with no much findings on the insurance industry, such include banking industry Kipngetich (2011) and the real estate industry Bioreri (2015) who suggested in his research the need to replicate the study of macroeconomic variables in other sectors of the economy.

There is a literature gap as far as the study on the relationship between macroeconomic variables and financial performance of insurance companies in Kenya is concerned. Thus this study's main objective will be to fill this research gap. This study therefore seeks to explain why the insurance industry's contribution to the country GDP is so low by looking at the macro economic variables affecting the financial performance of the industry. The study will therefore seek to answer the research question: What is the effect of macroeconomic variables and financial performance of the insurance industry in Kenya?

1.3 Research Objectives

The objective of this study is to establish the relationship between macroeconomic variables and financial performance of the insurance industry in Kenya.

1.4 Value of the Study

Economic Survey (2016) says that uptake of insurance has grown to 23.2% by the population in 2015 from 4.3% in 2006. Growth in the insurance sector however, has been driven primarily by uptake of statutory health insurance from the National Hospital Insurance Fund. Without the NHIF uptake, the penetration of insurance in Kenya stands at 4%.

The insurance sector plays an important role in the financial and the country's development and can significantly affect stability of the financial system. There is therefore a need to examine the impact of macroeconomic determinants on insurance companies to control potential systemic risk. By introducing quantitative macro-prudential frameworks, the main risks and weaknesses threatening financial stability of Kenya's insurance sector can be reduced.

The study will assist insurance companies and the government as a whole come up with strategies to mitigate and reduce the negative effects of the macro economic variables that affect financial performance of the insurance industry. It will also add value to the current theoretical discussions by testing the macroeconomic variables stated with the financial performance of insurance industry. The study will also benefit scholars who would wish to undertake further studies and increase the body of knowledge on the topic of research.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

The chapter will examine the concepts and theories on the topic with major focus on macroeconomic variables; interest rates, inflation rate, real exchange rates, Gross Domestic Product and unemployment. By reviewing literatures from diverse past authors, the chapter forms the theoretical framework of the study on the determinants of financial performance of the insurance industry in Kenya.

2.2 Theoretical Literature Review

There are several theories explaining the relationship between macroeconomic factors and financial performance of the insurance industry. This study will be guided by four theories that will provide theoretical evidence of various studies brought forward by different studies in relation to macroeconomic variables and financial performance. The theories include; the classical theory of interest rates, the black swan theory, the theory of option pricing and contract theory. This chapter will give a better understanding of the effects of the selected macroeconomic variables and financial performance theoretically. It will therefore give guidance on what factors should be studied.

2.2.1 The Classical Theory of Interest Rate

The classical theory was put forward by Keynes (1936). The general equilibrium theory is the basis of the classical theory of interest rates. The general equilibrium theory holds that price is determined by the intersection of demand and supply and interest rate is set at the intersection of the supply and demand for money. Keynes also identified that

money supply has a significant impact on inflation rate. Further, inflation rate has a significant impact on interest rates, which further affects insurance prices by raising them. This in turn translates to lowering the demand for insurance and hence low sales which in effect translates to low profitability.

2.2.2 Black Swan Theory

The Black swan theory states that difficult to predict an uncertain events can occur which intensely affect the normal operations. These events may have severe losses but do not always frequently occur. Silberzatn (2013), states that a black swan brings out the aspect of under-estimation but does not necessarily create a new event. The likelihood of happening of such events was probably unplanned for. Such events occur because the method of calculating them was erroneous but not because it is not possible to calculate them. The theory helps us understand the mistakes made when making estimation of the probability of an event occurring. Bias, methodological errors and psychological biases make up such errors. However the study argued that the future is insurable against risky events. The implications of risky events occurring for markets and investment are compelling and need to be taken seriously. It is important for markets to plan for such events adequately and this is where insurance comes into play by compensating for any losses that may be incurred thereafter.

2.2.3 Insurance Economics and Theory of Option Pricing

Crack (2009) states that modern theory of option pricing is constructed using riskless portfolio and arbitrage pricing assumption. Under uncertainty, probability of occurrence does not play any role in determination of option prices. Modern theories of option

pricing and contemporary insurance economics are contrast and irrelevant. This is despite the two being seen as substitute products that is, portfolio insurance and options and are explained by the same predictor variables.

Crack (2009) also states that we can view insurance contracts as options. An option writer is the seller of an option, and the payment made for an option is known as the option premium. Carlson (2006) stated that purchasing portfolio insurance and purchasing a put option is similar. This is because they both enable investors to hedge against losses by maximizing high gains and minimizing losses. Mayers and Smith (1983) addressed in abstract "We analyze the individual's demand for insurance as a special case of general portfolio hedging activity." In this context, an option is the right to buy or sell an underlying asset at a given price a specified future date. Options and portfolio insurance have the same characteristic of risk shifting and can therefore be viewed as substitutes. Due to their substitution characteristic, if portfolio insurance is cheaper than option, then we should purchase portfolio insurance and vice versa is true. Economic agents will therefore purchase portfolio insurance when options are more expensive than portfolio insurance. Prices of options and prices of portfolio insurance are therefore interdependent.

Arrow (1963), Borch (1962), Raviv (1979) and Mossin (1968) argued that the maximum expected value under risk minimization and its probability are the backbone of the contemporary insurance economics. Black and Scholes (1973) stated that under uncertain conditions, economic agents usually apply arbitrage assumption and riskless option in determining option prices as discussed in the modern theory of option pricing. In option pricing, probability is a characteristic that is absent. Therefore in spite the fact that

options and portfolio insurance are substitute products, modern theory of option pricing and contemporary insurance economics are totally irrelevant and contrast in nature.

2.2.4 Contract Theory in Finance and Insurance

Cardon et al (2001) discusses the contract theory and focuses on the information asymmetry between the principal and agent, which causes informational problems, such as adverse selection, signaling and moral hazard. Information asymmetry causes the equilibrium to move away from the first best, in which all the participants would have symmetric information. This explains and gives guidance for various problems in corporate finance, financial intermediation theory and insurance. Insurance companies should mitigate adverse selection and moral hazard problems for instance through the contracts with different premium and coverage.

The scholar also analyses the relationship between a principal and agent with a prime focus on informational problems in the context of finance. In insurance the principal is the insured while the agent being the insurer, the shareholders of the company are also considered as the principals while the management is the agent.

2.3 Determinants of Financial Performance in the Insurance Industry

Haiss and Salmegi (2008) in their study state that GDP growth rate is a key indicator of a well performing economy. The insurance industry in general is considered to be pro-cyclical, just like the economy as a whole, so it is expected that as the performance of insurance companies is affected so does that of the overall economy. The last few years have seen the economy go under a depression. Less money has been flowing towards the economy due to the direct effect it has had on disposable income. This has had effects on

the economy including the insurance sector among others. Depressed growth of the economy causes competition among the insurance carriers to intensify resulting in decreasing profits per insurance player.

Outreville (1990) studied the relationship between financial development, indicators of financial performance and development of property liability insurance (general insurance). The factors used included gross domestic product growth rate and gross premiums written. The analysis showed that the development of general insurance demand is affected largely by financial development and income in form of GDP.

Hicks (2000) states that unemployment affects the broader economy more than it does to the insurance industry, but there is some relationship. High unemployment is a bad indicator for insurance companies. Insurers earn money by premiums they earn and also by investing the capital they have on hand, usually in short-term investments for general insurance and in long term investments for life assurance. When interest rates decrease, their income decreases as well. Insurers have the mandate to alter their investment strategy as needed to hedge against investment losses, but overall interest rates serve as a good economic predictor for the performance of insurance companies. When investment revenue falls, insurers must raise premiums or cut costs to compensate.

Beck and Webb (2003) state that using insurance penetration ratios as dependent variables, we can study three types of predictors for insurance growth to determine the demand for insurance. Studying economic indicators, they both find a significant negative relationship with inflation but a positive correlation with income per capita and GDP. Increase in inflation translates to consumers reducing their savings therefore; it negatively affects the insurance growth. Beck and Webb further state that increase in

income means that a greater demand for non-life insurance is created. This is because the increasing income causes people to direct a part of their earnings towards retirement and buy insurance products related to investment. Respectively, then the life insurance demand grows which also leads to increase in financial performance of the insurance company.

2.4 Review of Empirical Studies

Mwangi (2013) studied the determinants of financial performance of insurance companies and to what extent they affect the performance. Financial performance was measured using profitability of the industry, while key indicators used in the study included liquidity of the industry, interest rate fluctuations and competition. He found out that the financial performance of the Kenyan insurance industry was influenced by the mentioned variables. He further states that GDP growth rate is the most frequently used macroeconomic variable in determining the total productivity of a country. The scholar also states that the GDP growth rate reflects the state of economic growth. He further states that financial performance is determined by other fundamental macroeconomic factors such as the exchange rate, interest rate, inflation and money supply, which are closely monitored by the government, businesses and consumers.

Cristina et al. (2015) state that the most important indicator of insurers' performance and healthiness is its profitability. The article used cross-country European aggregate data to establish the relationship between the insurer's profitability and macroeconomic variables. The researcher carried out an empirical study investigating the relationship between insurance profitability and the macroeconomic variables. He used panel data approach and Generalized Method of Moments methodology. Unemployment rate,

inflation rate, alternatively real interest rates as calculated by the Fisher equation, real GDP growth rate, long-term interest rates, the stock market index were the macroeconomic variables used in the study. Return on assets was used as the dependent variable. The results of the study showed that high profitability of insurance companies was as a result of high interest rates and accelerated economic activity.

Beenstock et al. (1988) states that insurance companies' growth prospects are undermined by high rates of unemployment. Unemployment leads to reduced income for households. Households become reluctant to use their limited income to buy insurance products, both non-life and life insurance annuities. This makes it harder for households as well as for insurance companies to grow. Policy holders become more reactive to prices due to unemployment and less capable to purchase new goods/properties and services. Such products would typically need insurance coverage. This results to negative effects on the profitability of the insurance companies, owing to constraints in demand for insurance. Insurance profitability is positively affected by good equity market performance, low inflation rates and decrease in unemployment rates.

Murungi (2014) indicated that the Insurance Regulatory Authority (IRA) should come up with policy measures that will control the exchange rate in Kenya in order for insurance companies to improve. For insurance companies to perform better, lower exchange rates would be more appropriate. This is because of the negative relationship with financial performance of the companies. The dependent variable used in the study was return on assets and interest rates, real exchange rates, GDP growth rate, money supply, claims ratio, expense ratio and size of the company are used as the independent variables. The study shows that the government needs to control and monitor the broad supply of money

in Kenya since evidence suggests that increase in financial performance of insurance companies can be caused by higher money supply. This may be as a result of high disposable income by individuals thus consuming more services and products offered by insurance companies. The results further show that interest rates negatively affect the return on assets for the insurance companies and a unit decrease in interest rate will lead to 0.954 unit increase in the financial performance of the insurance companies

Mboga (2015) showed that interest rates, GDP, age, size, liquidity risk and inflation are major determinants of the return on assets. Return on assets was the measure of financial performance for the insurance companies used in this study. Using regression outputs of the insurance companies; the study established that return on assets of the insurance companies in Kenya is negatively affected by interest rates. GDP, inflation, liquidity risk were also found to have negative coefficients with the return on assets illustrating that a decrease in one of these variables will have a positive impact the insurance companies' financial performance. Secondary data was used in the research study and was presented in form of tables and figures to provide a clear picture of how interest rates are related to performance. Descriptive research design was adopted on a population of 49 licensed insurance companies and covered a six year period from 2008-2013.

2.5 Conceptual Framework

Different empirical evidences as discussed, suggest that both external factors and internal factors affect the profitability of financial institutions. Such factors include inflation, GDP growth rate, loss ratio, company size and age, liquidity of the company and

premium growth. However, they may also be affected by non-firm variables that may not necessarily be macroeconomic factors, such as intervening variables.

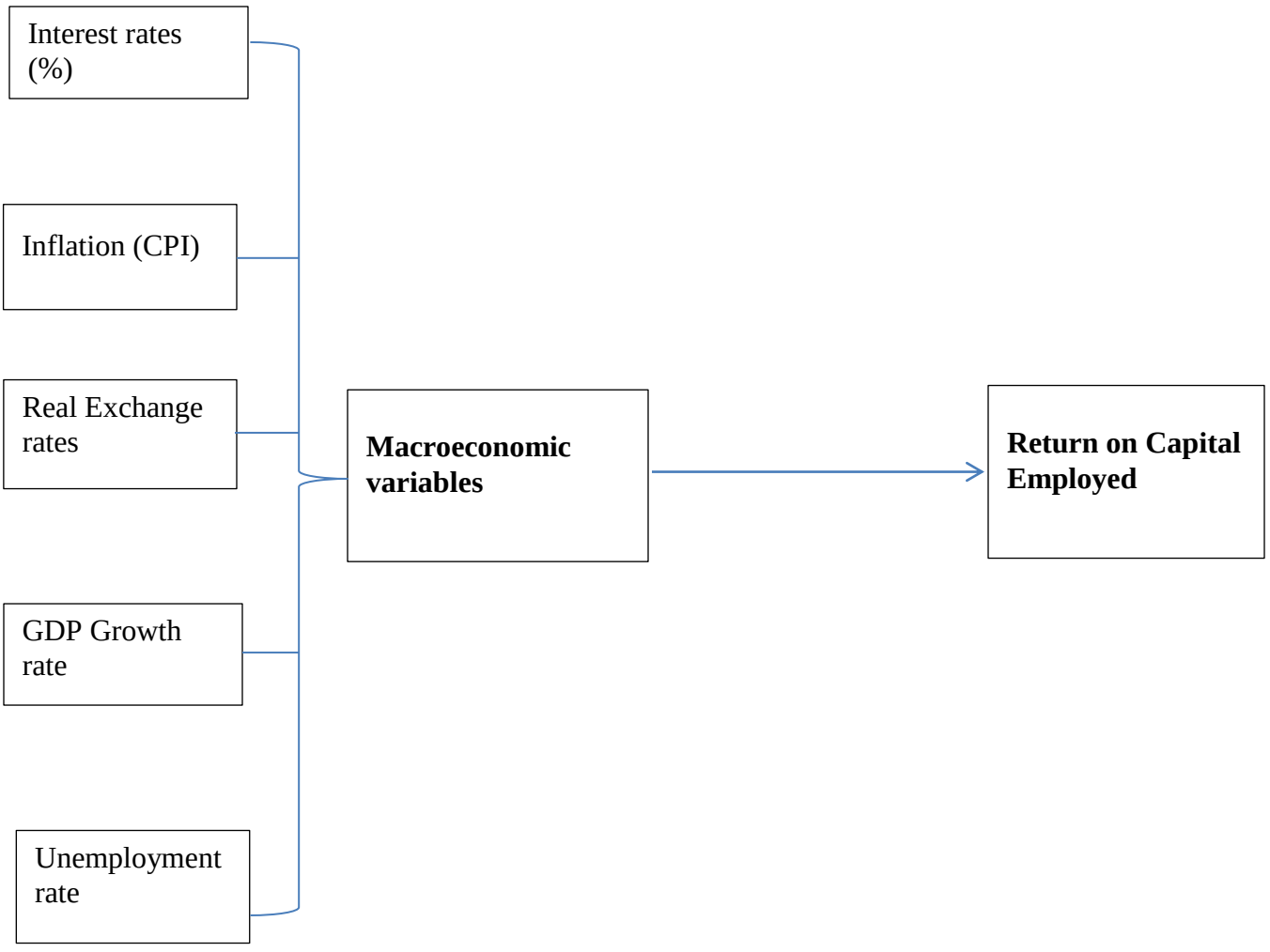
Mark and Nwaiwu (2015) state that an intervening variable is a variable that comes up between the time the predictor variable starts to have effects on the dependent variable and the time their impact is felt on it. With intervening variables there is a temporal time aspect/dimension to it. Such intervening variables are like political environment and changes in climatic conditions. In their study they stated that, the performance of multinational companies is significantly affected by the political environment. Frequent changes in government policies, procedures and programs are the main characteristics of the political environment. Such changes are attributable to party politics which have the risk of conflicts and wars outbreak. These changes thereby negatively affect the corporate long-term planning of multinational companies. Multinational companies should manage such political environment by adequately planning for future uncertainties due to associated risks of environmental perils.

The study is conceptualized as follows;

$Y = f(x_i)$

Where: Y= dependent variable (ROCE)

X_i= independent variables- specific macroeconomic variables (Interest rates, Inflation, Real exchange rates, GDP growth rates and unemployment rate)



CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

This chapter will focus on the research design, data collection, data analysis and data presentation methods. Data collection instruments and procedures are also discussed as well as the target population. The research methodology will lay down the procedures and methods used in undertaking the research study.

3.2 Research Design

Claire, Wrightsman and Cook (1962) define research design as the systematic collection and analysis of data in a way that brings together the research objectives, purposes and relevance. The procedure also needs to the economical. The study employed the use of descriptive research design to help understand the factors in study and offer ideas for further investigation and research.

Return on capital employed (ROCE) was used as the financial performance measure of the insurance industry. ROCE was regressed against the macroeconomic variables including GDP growth rate, real exchange rate (Ksh/USD), unemployment rate as reported by the World Bank, average annual lending interest rates as denoted by the central bank rate and inflation rate computed by annual percentage changes in (CPI).

To examine the relationship between the selected macroeconomic variables and financial performance, the researcher used time series empirical data of the variables i.e. inflation rate, exchange rate, interest rate, unemployment rate, GDP growth by establishing correlation coefficient between the variables and financial performance of companies in

the insurance industry in Kenya measured by ROCE. This method goes beyond capturing most of the objectives of the study hence reasons for selection.

3.3 Target Population

The study used the entire population in the industry as the target population, which is made up of the 49 companies as at 2015. The study covered a period of ten years beginning 2006 to 2015 (quarter yearly data).

3.4 Data Collection

Secondary data sources were used in data collection for a quarterly ten year period from 2006-2015 based on the availability and accessibility of data. The study utilized secondary data from World Bank, CBK, IRA, KNBS and AKI websites and the consolidated financial statements of the industry.

All industry data was obtained from IRA. Other macroeconomic factors were derived from the World Bank, CBK and KNBS. This helped the researcher get quantified data that is useful in drawing conclusions and giving recommendations on the effect of various macroeconomic variables on financial performance the insurance industry in Kenya.

3.5 Data Analysis

The study used a Multiple Regression Analysis model which involves the use of more than one variable to predict the dependent variable. It is used to analyze the linear relationship between one dependent variable and two or more predictor variables. All the data was analyzed using STATA program and excel worksheets. Presentation of the data was done using line graphs and tables from STATA and excel.

Five independent variables were tested in the study. A multi-regression model was used to determine the relationship among the independent variables and financial performance (ROCE). The following model specification was used.

$Y_1 = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \beta_5 X_5 + \varepsilon$

Where;

Y_1 – Return on Capital Employed (Net Income/ Shareholders Equity)

$\beta_0 -$ is the constant of probability in the model

X_1 – Interest rate in percentage per year (Central Bank Rates)

X_2 – Inflation rate (Consumer Price Index)

X_3 – Real Exchange Rate (Kshs on US Dollar)

X_4 – Gross Domestic Product growth (GDP per capita annual growth in % ratio)

X_5 – Unemployment rate (Employment rate in percentage from World Bank website)

$\beta_1, \beta_2, \beta_3, \beta_4, \beta_5$ = the coefficients of the explanatory variables i.e. X_1, X_2, X_3, X_4 and X_5

ε= is the error term which represents all the other factors that may not be included in the model but may affect the model. While net income is the profit after tax (net earned premium less total expenses and tax) plus investment income and commission income.

3.5.1 Test of Significance

The dependent variable denoted by Y; refers to the financial performance- ROCE, β_0 is the constant in the regression model while β_1, $\beta_2 \ldots B_5$ are the coefficients of the variables

in regression model. Goodness of fit statistics was used to test how well the regression model fits the data. R^2, defined as the square of the correlation coefficient is the most commonly used goodness of fit statistic which must lie between (0%-100%), that is 0 and 1. For the model to fit the data well R^2 should be high or closer to 1, when the value of R^2 is low (close to zero), this means that the model does not provide a good fit to the data. Analysis of variance (ANOVA) was used to establish if the model is significant and to also come up with the relationship between financial performance and the various variables. The tests were performed at 95% level of confidence to determine whether the model is a good predictor.

CHAPTER FOUR

DATA ANALYSIS, RESULTS AND DISCUSSION

4.1 Introduction

As set out in the research methodology, this chapter will lay down the analysis and findings of the data collected. The study sought to determine the effects of macroeconomic variables on performance of the insurance industry in Kenya**.** The results were presented and tabulated using excel spreadsheets and graphically presented as shown in the sections that follow.

4.2 Data Analysis and Presentation

Quarter yearly data was collected for the period between 2006 and 2015. The secondary data was organized in excel spread sheets and presented in line graphs and tables and was analyzed using STATA version 14. This section presents the descriptive statistics of this study, measures of central tendency, the trends of the variables.

4.2.1 Descriptive statistics

The analysis in table 4.2.1, show that the industry ROCE has a mean of 8.7 and a standard deviation of 5.2, inflation has a mean of 8.1 and a standard deviation of 3.9 while the Central bank rates have a mean of 9.3 and a standard deviation of 2.7. Un-employment rate has the lowest standard deviation of 0.13 with a mean of 9.3. The growth rate in gross domestic product has a mean of 5.2 and standard deviation of 1.6 while real exchange rate has a mean of 81 and standard deviation of 9.7.

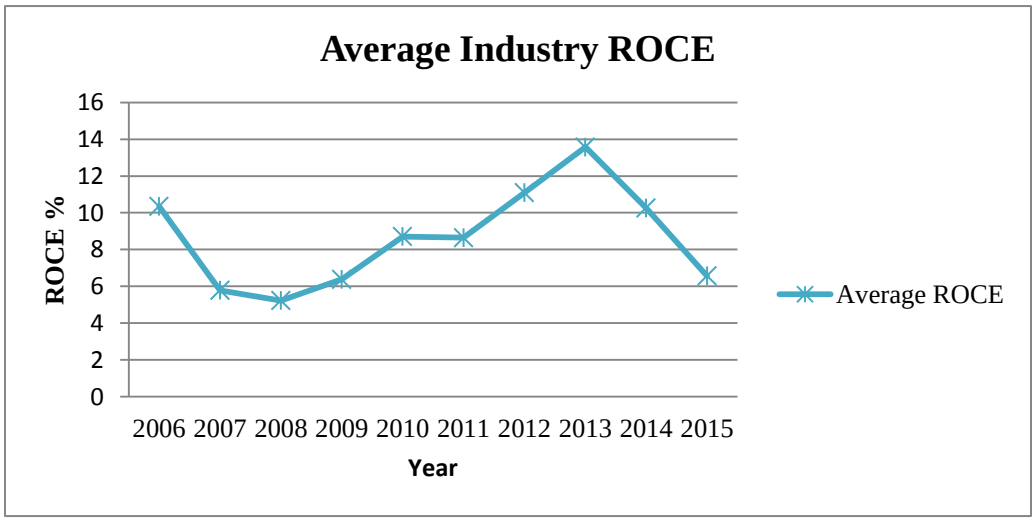
Table 4.2.1 Descriptive Statistics

Variable	Obs	Mean	Std. Dev.	Min	Max
Central Bank Rate	40	9.289583	2.740692	5.833333	18
Inflation	40	8.13475	3.943505	4.033333	16.83333
Exchange Rate	40	81.17308	9.740175	62.646	102.9673
GDP Growth Rate	40	5.186923	1.58588	-1	7.5
Unemployment Rate	40	9.300774	.1269515	9.1	9.500021
Industry ROCE	40	8.658195	5.186421	1.956078	22.72753

4.2.2 Trend analysis

The study aimed to determine the performance of the insurance industry in Kenya over the study period, and derived the trend as depicted by figure 4.2.1 below. From the diagram, the findings reveal that insurance industry ROCE has been fluctuating each year throughout the period.

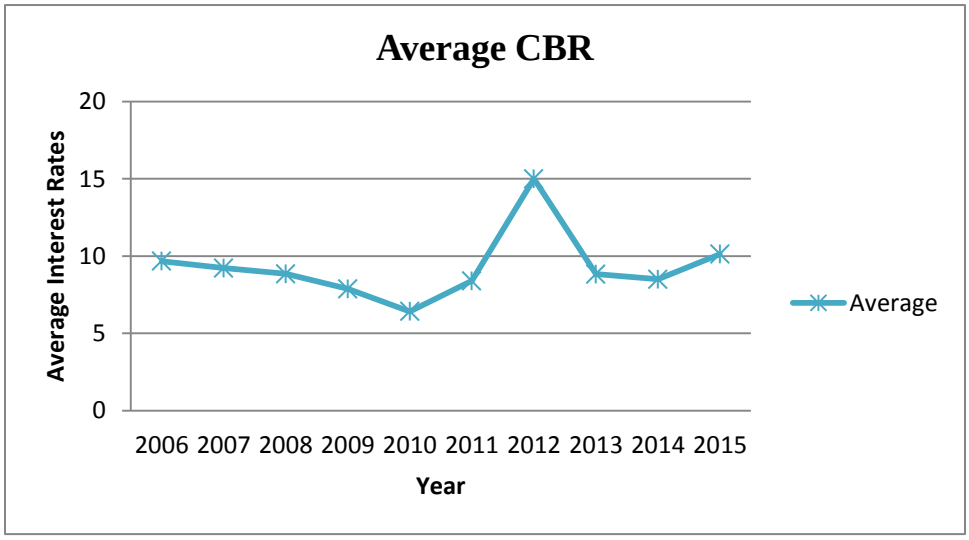
Figure 4.2.1 Industry Performance



Source: IRA

The average ROCE in the period of study is 9%.The study results also revealed that the insurance industry had its highest peak in the years 2013 and while 2008 had the lowest performance.

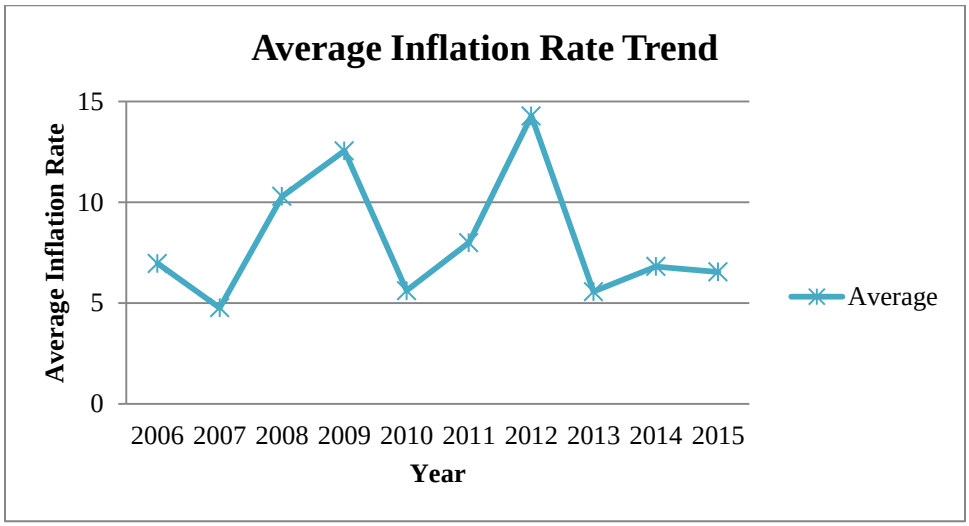
Figure 4.2.2 Average CBR Trend



Source: CBK

The findings show that the average interest rates have fluctuated over the period of study averaging at about 9% with a sharp increase in 2012 which recorded the highest rate of 15%. The high interest rates in the year 2012 could have been as a result of the Central Bank's monetary policy that increased the base lending rate. There was however a slight drop in interest rates between the years 2013 and 2014.

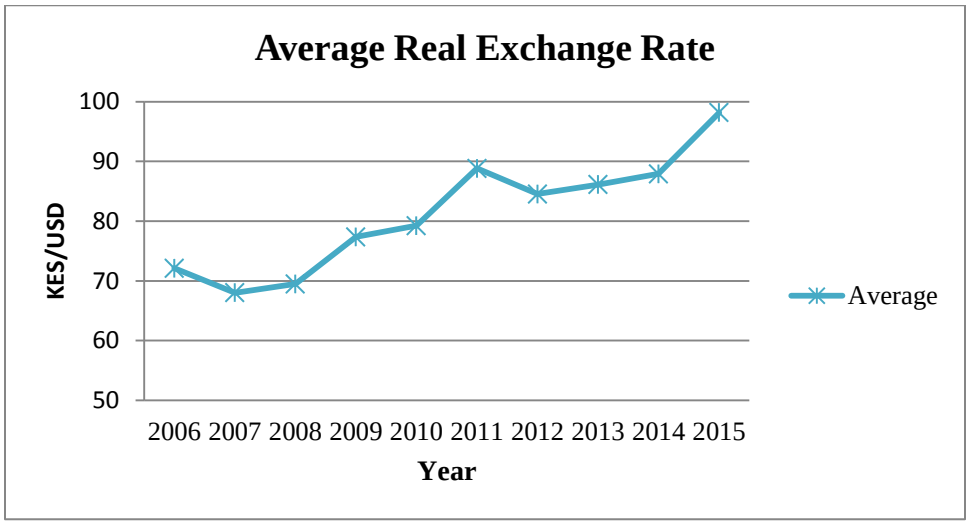
Figure 4.2.3 Average Inflation Trend



Source: KNBS

The inflation rate has averaged at 8% throughout the study period. Inflation has experienced a lot of sharp fluctuations and volatility throughout, with 2012 experiencing the highest rate of 14%. 2009 also saw high inflation rates of 13%. However, there was a sharp decrease of 8% between 2012 and 2013.

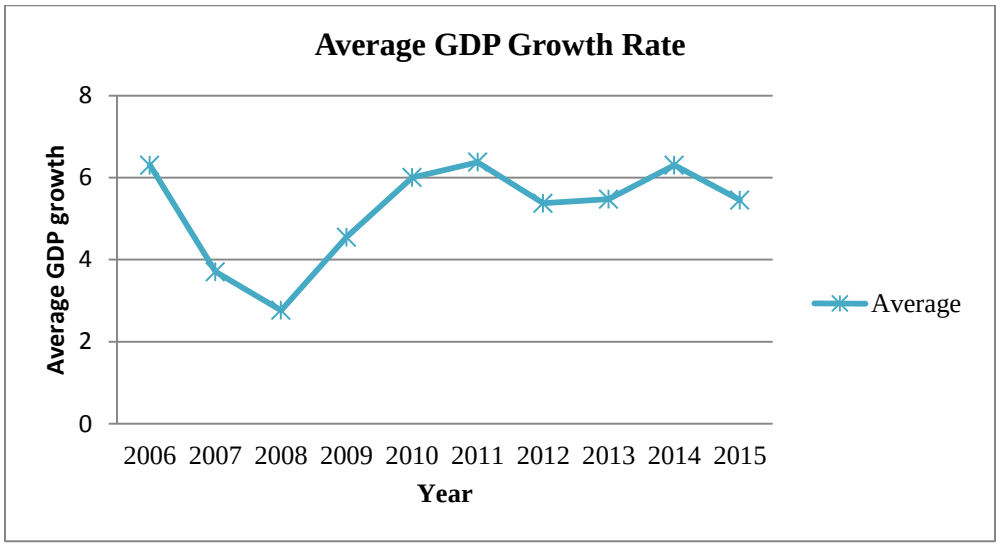
Figure 4.2.4 Average Exchange Rates



Source: CBK

The average exchange rate throughout the period has been 81(Ksh/USD) and there has been a general increase in the exchange rate with the exception of two years which means that the Kenya currency has been depreciating against the US dollar. In 2006/2007 the Kenya currency appreciated against the US dollar with 5 points from 72 to 68 and 2011/2012 by 4 points from 89 to 85.

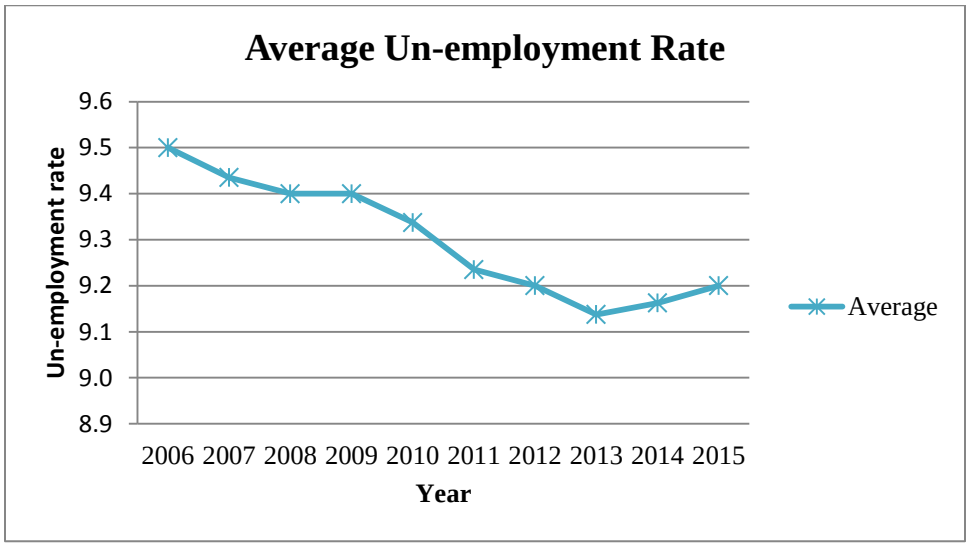
Figure 4.2.5 Average GDP Growth Rate



Source: KNBS

The findings show that annual GDP growth rate has grown each year however at different rates. The average GDP growth rate in the study period has been 5%. 2008 recorded the lowest GDP growth rates of 3%, with quarter one of the year been at -1%. The highest growth rates were recorded in 2006 and 2010 at 7%.

Figure 4.2.6 Average Un-employment Rate



Source: World Bank

The average un-employment rate in the study period is 9.3%. There has been a general decrease in un-employment rate throughout the years of study. However there is an increase of 0.1% between 2013 and 2014.

4.2.3 Correlation Analysis

This analysis will be used as the basis to determine the relationship between any two variables in the research study, both the dependent and independent variables. The results could give various options; there could be a significant or insignificant positive correlation and a significant or insignificant negative correlation.

Table 4.2.3 Correlation Analysis Matrix

	Interest Rates	Inflation Rate	Exchange Rate	GDP Growth Rate	Unemployment Rate	Industry ROCE
Interest Rates	1.0000					
Inflation Rate	0.5330	1.0000				
Exchange Rate	0.1925	0.0552	1.0000			
GDP Growth Rate	-0.0867	-0.1096	0.4523	1.0000		
Unemployment Rate	-0.1983	0.0080	-0.8013	-0.3298	1.0000	
Industry ROCE	0.0426	-0.1359	0.2627	0.4801	-0.3471	1.0000

The table above gives the correlation between the predictor variable (ROCE) and the various independent variables. Interest rates have a positive and significant effect on return on capital employed, interest rates are measured by central bank rates, $p=0.0426$, which is less than 5% significance level $p<0.05$. Inflation has a significant negative effect on Return on capital employed $p=-0.1359$, $p<0.05$). Exchange rates have an insignificant positive relationship with ROCE, $p=0.2627$, $p>0.05$. GDP growth rate has an insignificant positive relationship with Return on capital employed, $p=0.4801$, $p>0.05$. Unemployment rate has a negative and significant relationship with ROCE, $p=-0.3471$, $p<0.05$. Interest rates have an insignificant positive relationship with exchange rates and inflation rates, $p>0.05$ but a negative significant relationship with GDP growth rate and un-employment rate. Inflation has a negative and significant correlation with GDP growth rate but a positive and insignificant correlation with exchange rates. Exchange

rate has an insignificant positive correlation with GDP growth rate, p=0.4523, p>0.05 and a significant negative relationship with un-employment, p=-0.8013, p<0.05. GDP growth rate has a significant negative relationship with unemployment rate, p=-0.328, p<0.05.

4.3 Regression Analysis

The study regressed the dependent variable- performance of the insurance industry against five independent variables; average quarterly inflation, average quarterly interest rates, average quarterly growth in GDP, average quarterly un-employment rate and average quarterly exchange rate. The regression analysis was undertaken at 95% confidence level. The criteria for determining whether the independent variables were significant in the model was done by relating the corresponding probability value obtained and $\alpha = 0.05$. A probability value less than α means that the predictor variable is significant; otherwise it is not. F – Statistic table was also used to compare results produced with the one obtained from the regression analysis.

The regression analysis was of the form:

$Y= \beta_0+\beta 1X1+\beta 2X2+\beta 3X3+\beta 4X4 +\beta 5X5 +\varepsilon$

4.3.1 Model Summary

Table 4.3.1 below indicates the model summary for the regression result. The result shows an R-Squared of 0.3136 implying that 31.36% of the total variation in financial performance of the insurance industry is attributed the changes in the explanatory variables used in the model.

Table 4.3.1 Model Summary

Number of Observations	40
R-squared	0.3136
Adjusted R-squared	0.2127
Root MSE	4.6019

This table indicates that there is an R^2 value of 31.36%. This value indicates that changes in the dependent variable are explained 31.36% by the predictor variables used in the study. These results indicate that the independent variables under study do not contribute largely to the performance of the insurance industry. The main contributors of insurance industry performance could be the micro economic factors and the industry specific factors like, claims ratio, size of the industry, expense ratio and liquidity of the industry.

4.3.2 Analysis of Variance

The study used analysis of the variance (ANOVA) to show the sum of squares in the model and the residual values thus, testing whether a significant relationship exists between dependent and the predictor variables.

Table 4.3.2 Analysis of Variance (ANOVA)

Source	SS	df	MS	
Model	329.031794	5	65.8063588	F(5, 34)
Residual	720.027695	34	21.1772851	Prob > F 0.0204
Total	1049.05949	39	26.8989613	

At 5% significance level, the ANOVA results show the probability value of 0.0204 implying that the research model was significant in predicting the relationship between the insurance industry return on capital employed and the independent variables as it was less than α=0.05.

4.3.3 Model Coefficients

Table 4.3.3 below shows the regression coefficients for the variables used in the model.

Table 4.3.3 Regression Co-efficient

Industry ROCE	Coefficients	Standard Error	T	P>t	95% Confidence level Interval	
CBR	.2535985	.3301797	0.77	0.4483	-.4174073	.9246043
Inflation	-.1795194	.2242174	-0.80	0.429	-.6351839	.2761452
Exchange Rate	-.1503755	.1358114	-1.11	0.276	-.4263774	.1256264
GDP Growth Rate	1.557785	.5332325	2.92	0.006	.4741263	2.641444
Unemployment Rate	-15.87685	9.858731	-1.61	0.117	-35.91221	4.158499
Constant	159.5561	100.2777	1.59	0.121	-44.23265	363.3448

Using a significance level of 5%, any independent variable having a probability value greater than 5% is considered not statistically significant. This study found that GDP growth rate is the only variable that is statistically significant. This reveals that interest

rates, exchange rates and un-employment rate are not suitable predictors of the insurance industry financial performance. The multiple regression model for this study will be:

ROCE= 159.5561 + $0.2535985X_1$-$0.1795194X_2$-$0.1503755X_3$+$1.557785X_4$-$15.87685X_5$+ε

Where X_1= interest rates, X_2= inflation rate, X_3= Real exchange rates, X_4= GDP growth rate and X_5=unemployment rate.

This means that a unit increase in interest rates will cause a positive 0.2535985 change in ROCE, while a unit increase in inflation will cause a negative 0.1795194 change in ROCE. All variables held constant, return on capital employed will be 159.5561.

A regression made with Newey-West standard errors gave the below results with time as the dummy variable- 4 lags.

Table 4.3.4 Newey-West Regression 4 lags

Regression with Newey-West standard errors				Number of observations	40	
maximum lag: 4				F(5,34)	5.43	
				Prob > F =0.0009		
Industry ROCE	Co-efficient	Std. Err.	t	P>t	95% Conf. Interval	
Interest Rates	.2535985	.2354673	1.08	0.289	-.2249286	.7321256

Inflation Rates	-.1795194	.1204189	-1.49	0.145	-.4242399	.0652012
Exchange Rate	-.1503755	.1190947	-1.26	0.215	-.3924051	.0916541
GDP Growth Rate	1.557785	.6033625	2.58	0.014	.3316051	2.783965
Unemployment Rate	-15.87685	9.055779	-1.75	0.089	-34.28041	2.526704
_cons	159.5561	91.06359	1.75	0.089	-25.5074	344.6196

At 4 lags equivalent to 1 year, the GDP growth rate is the only significant variable at 0.014<0.05, however the model as a whole is significant at 0.0009<0.005.

Table 4.3.5 Newey-West Regression 20 lags

Regression with Newey-West standard errors				Number of Observations	40	
maximum lag: 20				F(5,34)	19.46	
				Prob > F =0.0000		
Industry ROCE	Coef.	Std. Err.	t	P>t	95% Conf. Interval	
Interest Rates	.2535985	.1357833	1.87	0.070	-.0223464	.5295434
Inflation Rates	-.1795194	.0755834	-2.38	0.023	-.3331233	-.0259154
Exchange Rate	-.1503755	.122808	-1.22	0.229	-.3999514	.0992003

GDP Growth Rate	1.557785	.6331475	2.46	0.019	.2710746	2.844496
Unemployment Rate	-15.87685	7.666378	-2.07	0.046	-31.45681	-.296899
_cons	159.5561	77.8248	2.05	0.048	1.397049	317.7151

The above table shows the results. At 20 lags, equivalent to 5 years other variables like un-employment and inflation become significant at 0.046<0.05 and 0.023<0.05. The model as a whole is still significant at 0.00<0.05. The constant however remains the same as the previous regression analysis at 159.5561. The results obtained with Newey-West standard errors are consistent with the multiple linear regression done previously. Inflation rates, exchange rates and un-employment have a negative relationship with ROCE while GDP and interest rates have a positive relationship with return on capital employed.

4.4 Interpretation of the Findings

The average financial performance of the insurance industry is 159.5561 units when other factors affecting financial performance are held constant. The model is statistically significant ($p = 0.0204$, $p < 0.05$) at 5% level of significance in explaining the variation in financial performance of the insurance industry. However, not all individual variables are statistically significant. GDP growth rate is statistically significant at 0.006, $p<0.05$ while all other independent variables are not significant. It is key to note that however, the model explains only 31% of the performance of the industry.

The results further show that inflation rate, exchange rates and un-employment rates have a negative relationship with ROCE, meaning that a unit increase in any of the three variables will cause a decrease in return on capital employed equal to the co-efficient of

the variable. Interest rates, and GDP growth rates have a positive relationship with ROCE therefore a unit increase in any of them will lead to a positive change in return on capital employed equal to the variables' co-efficient.

CHAPTER FIVE

SUMMARY, CONCLUSION AND RECOMMENDATIONS

5.1 Introduction

This chapter will provide the study summary, conclusions and recommendations in line with the study objectives. It will provide the discussion of the conclusions drawn from the data findings, the data findings and recommendations. The recommendations and conclusions of the study are drawn are in line with the research study's main objective, which was to determine the relationship between macroeconomic variables and the insurance industry.

5.2 Summary

This study's objective was to determine the effect of macroeconomic variables on Kenya's insurance industry's financial performance. The study followed a descriptive research design and used secondary data on quarterly return on capital employed for the industry, inflation rate as computed by CPI, interest rates as computed by Central Bank rate, exchange rate (Ksh/USD), quarterly GDP growth rate and un-employment rate. The data sets covered the period 2006-2015. The data was summarized and analyzed using excel spread sheets and STATA. The findings were summarized in graphs and tables. A regression analysis was run on STATA in order to establish various inferential statistics; co-efficient of determination, P-value, F-test statistics and summary statistics. These statistics were used to establish the relationship and the significance of the model.

The study summarized the trend of the individual variables across the study period. The study results as depicted in chapter 4 shows that the performance of the insurance

industry has had many fluctuations with its peak in 2013 at 14% and the lowest point in 2008 at 5 %. The interest rates measured in terms of Central Bank rates have been fairly stable throughout the study period with the exception of 2012, where they rose to 15% but accompanied by a slight drop in 2013/2014. Inflation has experienced a lot of rampant movements throughout the study period, with 2012 experiencing the highest rate of 14%. 2009 also saw high inflation rates of 13%. However, there was a sharp decrease of 8% between 2012 and 2013. The average exchange rates have grown steadily throughout the study period with slight decrease in 2007 and 2012 of 5 and 4 points respectively. The findings show that average annual GDP has grown each year at different rates. 2008 recorded the lowest GDP growth rates of 3%, with quarter one of the year being at -1%. The highest growth rates were recorded in 2007 and 2010 at 7%. Unemployment has been fairly stable at 9.3% but declining gradually.

It is worth noting that the study period covers two election years; 2007, and 2013. These two, and overflowing to the next periods (2008 &2014) saw the adverse turn up in the variables under study including the dependent variable under study- ROCE. In the results of the data analysis obtained and presented, the findings showed an R-squared of 31% implying that GDP growth rate, interest rates, inflation rate, exchange rates and un-employment rates are not the major determinant of the return on capital employed for the insurance industry in Kenya. This implies that the variables under study explain only 31% of the changes in the ROCE. The other 69% is explained by micro-economic factors and industry specific factors like claims ratio, net premiums earned, expense ratio and management structure.

The analysis of the specific variables showed that interest rates and GDP growth rates have positive effect on the return on capital employed of the insurance industry, while exchange rate, inflation rate and unemployment rates have a negative relationship with ROCE. This illustrates that an increase in one of these variables will have a negative effect on the financial performance of the insurance companies. It is important to note that the variables together are statistically significant but individually statistically insignificant with the exception of GDP growth rate.

5.3 Conclusion

The analysis results as depicted by R^2 established that the macro economic variables under study explain only 31% of the industry ROCE. The coefficients corresponding to selected macroeconomic variables; interest rates and GDP growth rates were positive while the exchange rates, inflation rates and un-employment rates were negative. The model with all variables was statistically significant, $0.0204<0.05$. This confirms that over ally the multiple regression model is statistically significant, in that it is a suitable prediction model for explaining how the selected independent variables influences insurance industry financial performance. GDP was statistically significant while the other variables were not significant, meaning that GDP growth rate is a suitable predictor of the performance of the insurance industry. Using the Newey-West standard errors regression, it is after 20 lags, equivalent to 5 years that inflation and un-employment become statistically significant.

There exists a significant and positive correlation between return on capital employed and interest rates measured by central bank rates $p=0.0426$, which is less than 5% significance level $p<0.05$. Inflation has a significant negative effect on Return on capital

employed p=-0.1359, p<0.05). Exchange rates have an insignificant positive relationship with Return on capital employed, p=0.2627, p>0.05. The correlation matrix shows that GDP growth rate has an insignificant positive relationship with return on capital employed, p=0.4801, p>0.05. Unemployment rate has a significant negative relationship with Return on capital employed, p=-0.3471, p<0.05. Interest rates have an insignificant positive relationship with exchange rates and inflation rates, p>0.05 but a negative significant relationship with GDP growth rate and unemployment rate. Inflation has a significant negative relationship with GDP growth rate but an insignificant positive correlation with exchange rates. Exchange rate have an insignificant positive correlation with GDP growth rate, p=0.4523, p>0.05 and a significant negative correlation with un-employment, p=-0.8.13, p<0.05. GDP growth rate has a negative and significant correlation with unemployment rate, p=-0.3298, p<0.05.

5.4 Policy Recommendations

One recommendation that the study brings about is the need for the CBK to come up with measures that will decrease inflation rate in the economy. Low inflation rates will encourage more people to take up insurance products hence improve the financial performance of the insurance industry in Kenya. Key to note is that the two are negatively correlated with each other. High inflation leads to increased prices of insurance products and thus discourages insured from taking up more insurance products.

The study also recommends that the Central Bank of Kenya (CBK) should control and monitor the interest rates appropriately. One of the sources of income for the insurance industry is the investment income. Insurance companies invest in government bills and bonds and higher interest rates would lead to increased income and in turn higher return

on capital employed. The CBK should also monitor the exchange rates since depreciating the local currency will cause decrease in performance of the insurance industry.

The government should come up with measures to grow the country's real GDP as this would enhance the economy's growth and the insurance industry's growth as well. Also, the study established that all the selected macroeconomic variables fluctuated negatively just before, during or the immediate year following elections. The study recommends that the industry should plan for such adverse effects. The government should ensure that security and peace prevails in the country especially during and after general elections since lack of the two leads to deteriorating GDP, high inflation and depreciating of the local currency. These factors will negatively impact the economy as well as the insurance industry.

5.5 Limitations of the Study

The first challenge the researcher faced was the time limitation aspect. Future researchers needs to allocate a lot of time to gather sufficient information on the topic under study in order to do a comprehensive research study. Getting some of the insurance industry data that is not available on the internet consumed quite some time as well. Another challenge was the fatigue and long working hours that the researcher experienced due to undertaking the project within the limited time period. Researchers who are intending to do a similar research in future should consider allocating more time to the topic in order to avoid straining.

Another key challenge was the lack of credibility and reliability of the data. Secondary data is information that has previously been collected by individuals who are prone to error and bias. This study relied entirely on secondary data to do the analysis. There is

also the probability of earnings management from insurance company management, especially in the periodic reports, which may lead to inaccurate information. The cost of undertaking the entire research was also a challenge. Completing the research study was very costly, which included printing and binding each draft of the project, transport fees to gather data, internet costs among others and the course fees.

To sufficiently determine the factors that affect performance of the insurance industry, several factors from different aspects and dimensions including microeconomic variables need to be thoroughly studied. The study depended on a small number of macroeconomic variables leading to a model to that did not sufficiently provide the expected results. The regression model was also quite technical to carry out.

5.6 Suggestions for Further Studies

This research studied ten years, quarterly, a period of study which though helpful, may not be quite adequate to make complete and unquestionable conclusions, future studies should consider a longer period of time. The researcher also recommends that further studies on the effects of macroeconomic variables be undertaken alongside industry specific factors and that they should be studied for a longer period in order to reveal more sufficient and conclusive information about the relationship.

Secondary data was used to gather information for the research project. Secondary data is prone to errors and bias which may not necessarily give accurate results. Future researches should be done through primary data. Primary data is first-hand information that reduces bias and is more accurate. This feature would otherwise not be experienced when using secondary data.

Future research studies seeking to establish factors affecting the performance of insurance companies in Kenya should focus on how management actions and/or customer services experience affect the performance of the insurance industry. This can reveal more determinants of financial performance that should be of great concern for improved performance in the Kenyan insurance industry. Similar studies can be done on other sectors in the economy and not just insurance companies, investigating on what industry specific, firm specific or macroeconomic factors affect the financial performance.

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APPENDICES

Appendix I: List of Insurance companies in Kenya

There are 49 registered general insurance and life assurance providers and two re-insurance companies in Kenya listed below.

List of Insurance Companies	
1. AAR Insurance Company Ltd General	2. Kenya Orient Insurance Limited General
3. Africa Merchant Assurance	4. Kenya Orient Life Assurance Limited
5. AIG Kenya Insurance Company Ltd General	6. Kenya Reinsurance Corporation Ltd Reinsurance
7. Allianz Insurance Company of Kenya Limited	8. Liberty Life Assurance Kenya
9. APA Insurance Limited General	10. Madison Insurance Company Kenya Limited Composite
11. APA Life Assurance Company	12. Mayfair Insurance Company Limited General
13. Britam General Insurance Company	14. Company Limited General P O Box 45161-00100 Nairobi (020) 2999000
15. Britam Life Assurance Company	16. Metropolitan Cannon Life Assurance Limited
17. Cannon Assurance Limited Composite	18. Occidental Insurance
19. Capex Life Assurance Company	20. Old Mutual Assurance Company Limited
21. Phoenix of East Africa Assurance Co. Limited	22. Pacis Insurance Company Ltd General
23. CIC Life Assurance	24. Pan Africa Life Assurance Company Limited

25. Continental Reinsurance Ltd	26. CIC General Insurance
27. Corporate Insurance Company Limited	28. Pioneer Assurance Company Limited
29. Directline Assurance Company Ltd General	30. Prudential Life Assurance Company Limited
31. Kenindia Assurance Company Limited Composite	32. Resolution Insurance Company Limited General
33. The Monarch Insurance Company Limited	34. Saham Assurance Company Kenya Limited Composite
35. GA Insurance Limited General	36. Takaful Insurance of Africa Ltd Composite
37. Gateway Insurance Company Ltd General	38. The Heritage Insurance Company Limited General
39. ICEA LION Life Assurance Company	40. The Jubilee Insurance Company of Kenya Limited
41. ICEA Lion General	42. The Kenyan Alliance Insurance Company Limited
43. Geminia Insurance Co. Ltd Composite	44. First Assurance Company Limited Composite
45. Intra Africa Assurance Company Limited General	46. Trident Insurance Company Limited General
47. Invesco Assurance Company Ltd General	48. UAP Insurance Company Ltd General
49. East Africa Reinsurance Company Limited	50. UAP Life Assurance Company Limited
	51. Xplico Insurance Company Ltd General

Appendix II: Data for the Study

Year	Quarter	CBR (%)	Inflation (%)	Exchange Rate/US dollar/Ksh	GDP (%) Growth	Un-employment Rate (%)	Industry ROCE (%)
2006	Q1	9	9	72	6	9.5	5
	Q2	10	7	72	5	9.5	10
	Q3	10	6	73	6	9.5	15
	Q4	10	6	71	7	9.5	11
2007	Q1	10	6	70	3	9.5	2
	Q2	10	5	67	5	9.4	5
	Q3	9	5	67	5	9.4	7
	Q4	9	4	68	2	9.4	10
2008	Q1	9	5	69	-1	9.4	2
	Q2	9	9	63	3	9.4	4
	Q3	9	12	69	4	9.4	6
	Q4	9	15	78	5	9.4	9
2009	Q1	8	17	80	3	9.4	2
	Q2	8	16	78	4	9.4	5
	Q3	8	13	76	5	9.4	7
	Q4	7	4	75	6	9.4	11
2010	Q1	7	8	76	6	9.4	3
	Q2	7	6	79	7	9.3	5
	Q3	6	5	81	5	9.3	9
	Q4	6	4	81	6	9.3	17
2011	Q1	6	4	82	7	9.3	3
	Q2	6	6	86	7	9.3	8
	Q3	7	9	93	7	9.2	11
	Q4	15	13	94	5	9.2	13
2012	Q1	18	16	84	5	9.2	5
	Q2	18	16	84	6	9.2	8
	Q3	13	14	84	4	9.2	12

	Q4	11	11	86	7	9.2	19
2013	Q1	10	7	87	4	9.2	5
	Q2	9	5	85	5	9.2	8
	Q3	9	5	87	6	9.1	19
	Q4	9	5	86	7	9.1	23
2014	Q1	9	6	86	5	9.1	4
	Q2	9	7	87	6	9.2	10
	Q3	9	7	88	7	9.2	11
	Q4	9	7	90	8	9.2	16
2015	Q1	9	7	92	5	9.2	3
	Q2	9	7	96	6	9.2	6
	Q3	12	6	103	6	9.2	6
	Q4	12	6	102	6	9.2	11

Sources: KNBS, CBK, World Bank, IRA