IMPACT OF FINANCIAL DISTRESS ON FINANCIAL PERFORMANCE IN THE INSURANCE INDUSTRY IN KENYA

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DECLARATION

I declare that this project is my original work and has never been carried out by anybody else in any other institution for examination or any other purpose. All information from other sources are duly cited and acknowledged.

Signed _____**Date**_____

Edward Kibuchi

D61/75575/2014

This research project was submitted for examination with my Authority as the University Supervisor.

Signed _____**Date**_____

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DEDICATION

This research project is dedicated to my mother who always put extra effort into ordinary and taught me what a scholar should be, God bless her abundantly.

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First and foremost I thank God for enabling me come this far in my education and for His strength during this study period.

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ABBREVIATIONS

CMA   Capital Market Authority

EBITDA   Earnings before Interest Taxes Depreciation and Amortization

IRA   Insurance Regulatory Authority

MDA   Multiple Discriminant Analysis

NSE   Nairobi Securities Exchange

NYU   New York University

ROE   Return on equity

ROA   Return on Assets

ABSTRACT

Kenyan insurance industry is the fastest developing sector in Africa. This has been spurred by significant growth in foreign and local stakeholders seeking to put up businesses or setting up subsidiaries. In addition the industry has also witnessed increased activities in mergers, acquisitions and other restructuring. However, there are also a number of challenges facing the industry. Financial distress is one of them and if left unchecked it can lead to insurance failure. Thus to enhance industry stability it is important for firms to identify various reasons for corporate failure and take mitigations. The purpose of this research was to examine the influence of financial distress on financial performance of the insurance companies in Kenya. Financial distress was the independent variable which was measured using model of Altman Z score, reported between the year 2013 and 2017. The overall financial performance of the insurance companies was the dependent variable and was determined using the Return on Assets (ROA) ratio. Quantitative models were adopted because this study used secondary data which was collected from financial statements as per the audits from the selected institution. The study targeted five listed insurance companies and five non-listed insurance companies, this constituted twenty-five percent of all insurance firms in Kenya which is sufficient for generalizing. The recorded data was then analyzed using SPSS version 20.0. Regression analysis was used to find the effect of financial distress on financial performance. The period under study was from 2013 to 2017. For this purpose, firm key indicators such as financial distress, leverage, productivity and size, were regressed against profitability measured using Return on Assets. This study led to the conclusion that profitability of insurance industry in Kenya was negatively and significantly influenced by financial distress, leverage, and productivity. Size of the firm (measured as the natural logarithm of total assets) had a positive and significant effect on the financial performance of the insurance industry in Kenya. The study recommends that for insurance industry in Kenya to perform better in terms of their return on assets, they should improve on their financial distress, leverages, and productivity.

CHAPTER ONE

INTRODUCTION

1.1 Background of the Study

Prediction of the financial distress within companies is essential in the current globalization era. If the distress is not tackled in a timely manner a company can become bankrupt. Empirical and theoretical studies indicate that firm size, efficiency, profitability, liquidity and leverage is the key to determining the financial distress of a company (Altman, 2006; Ogawa, 2003). According to Garman (2004), financial distress can be termed as a period when financial obligations within a company cannot be met.

Issues on financial distress happen to be diverse and they can only be approached from various disciplines and perspectives. To outline characteristics of firms in financial distress several theories will be used. The theories will include the theory of liquidity asset, cash management, credit risk and entropy theory (balance sheet decomposition measure). Most of the mentioned theories have been applied in the Kenyan market. (Nyanumba and Memba, 2013). The current study will be anchored on entropy theory where multiple discriminant analysis based on more than one ratio will be part of the variables in the study, will be used in predicting financial distress (Aziz and Dar, 2006).

Following the Kenyan economy, we find that employment opportunities in insurance companies are provided through the channels of distribution and marketing. These channels entail dealing with adjusters and assessors of losses, brokers and agents in insurance and the insurance companies directly. A point worth noting is that insurance companies are among the contributors to the (GDP) Gross Domestic Product of a country

(Rand, 2004). From previous research, United Insurance Company, Access Insurance Company, Kenya National Assurance Company, Stallion insurance and Star Assurance Company are among the companies that have experienced financial distress (Mudaki and Wanjere 2012). The goal of this study is to understand the results of policies and operations in monetary terms in the insurance companies and how it is affected by financial distress. The findings will assist insurance in taking timely corrective measures once they are in distress avoiding results that are devastating.

Through measurement of multiple financial ratios, the research will assess the insurance companies' financial health. Financial ratios used in the model are solvency, liquidity, return on assets, capital turnover and profitability. To study the financial ratios combined impact on the financial performance the five factor or Altman Z score model will be used. The financial performance indicator will be earnings per share and it will act as the dependent variable. In financial distress diagnosis and measurement of financial health, the above ratios are utilized. Past research portrays that financial performance and financial distress have a negative association. As exhibited by Tan (2012), an inverse correlation exists between a firm's financial distress and the financial performance and further, he portrays that highly leveraged firms perform worst in an entire year.

1.1.1 Financial Distress

A financial distress is referred to as a state where current obligations within an organization cannot be satisfied by its operating cash flow resulting to corrective action mechanisms (Ross, 2008). To explain further, Outecheve (2007) group financial distress into a four interval process where the performance deteriorates, followed by failure then

insolvency and lastly default. The first two (failure and deterioration) affects the company profitability while the last two (default and insolvency) are rooted in the company's liquidity. Generally, it can be deduced that sharp decline in the value and performance of a firm is what characterizes financial distress. A company can find itself in distress without defaulting though bankruptcy and default cannot happen when there is no prior financial distress period.

In studying financial distress, four independent variables will be used, three will be measured against Total Assets and they are Working Capital, Retained Earnings and earning prior to taxation and interest, the fourth one will be Equity Market Value/ Total Liabilities Book Value. For discrimination zones a Z score less than 1.1 will indicate distress zone and bankruptcy, a score between 1.1 and 2.6 will be termed as a grey zone and it will indicate a probability of bankruptcy whereas a score above 2.6 is safe zone thus no bankruptcy (Altman, 2000).

1.1.2 Financial Performance of Insurance Companies

Financial performance is termed as the way an organization generates revenues within a defined time period from its main operations by utilizing its assets (Shum, 2001). It is an essential part of management thus cannot be ignored since it's a pillar in any business enterprise survival. The operations of an organization can be closed down easily when its financial performance is not sound. Any organization performance success is anchored on various factors like the capacity to effectively manage issues related to finance. A positive association between successful financial performance and activities related to

finance like financial records maintenance, planning, advice on professional finance, and external finance procurement exist (Ismaila, 2011).

Ongore and Kusa (2013) posit that profit is the ultimate goal of the insurance companies though they also have other social and economic goals. There are different methods of measuring the feasibility in a research conducted by profitability can be measured using different ratios such as net interest margin, return on equity ratio (ROE) and Return on Assets (ROA).

Return on Assets (ROA) measures the capability of an insurance company's management to improve the financial performance by utilizing the firm resources (Wen, 2010). It is a ratio that shows effectiveness of an insurance company. An increasing trend of ROA indicates the company's productivity and improvement.

Financial performance in this study will be outlined by Return on Assets (ROA) which will act as a dependent variable. In a research conducted by Abate (2012), profits alone cannot be used to determine the performance in firms therefore productivity is measured appropriately by financial ratios. Al-Shami (2008) and Malik (2011) argued that return on assets (ROA) and return on equity (ROE) are the best measures of company performance. Almajali, Alamro and Al-Soub (2012) carried out a study to examine and identify the factors influencing the financial performance of Jordanian insurance companies during the period of 2002 to 2007. ROA was used as the dependent variable while leverage, liquidity, age, size and management competence index were independent variables.

1.1.3 Financial Distress and Financial Performance

In terms of the failure of the noninsurance company and insurance company, Zulkarnain (2009) noted that it is essential to note any distress in an insurance company since there a big difference in relation to consumers cost. To be specific, when a non-insurance company becomes insolvent, it's only the service and product value purchased by the former consumer that is lost. Contrary to this, when there is a failure in an insurer, policyholders suffers already paid premium loss coupled with lack of indemnification on the losses associated with the coverage they were seeking for. Several parties like consumers, insurers, regulators and agents will benefit from prevention and detection of insurers financial distress.

In comparison to economies that are developing where the adopted approach used is a 'do-nothing' strategy, economies that are advanced have performed various surveys to find out what causes insolvency among insurers. One such study was conducted by Muller (1997) and it identified what causes the insolvencies within the European Union. In mitigation of the identified problem, the prime movers in the insurance companies have formulated some models on internal risk with the use of recommendations from the survey.

1.1.4 Insurance Companies in Kenya

In Kenya evaluation of insurance companies' financial distress is hard according to a study done by Dollery (2009). The first reason cited is the fact that in recording and measuring of financial data mixed approaches are employed by various insurance regulators. Secondly, there is infrequent asset valuation and this results to different

assumptions on the insurance companies' assets longevity. Lastly, there are incomplete records on asset and financial management mostly in firms that are small which make it impossible to accurately compare the companies. The only way to recognize financial distress in an insurance company is only if there is an increase in non-claim settlement within the company due to financial problems. The phenomenon was manifested by Invesco Assurance Company during its liquidation since it had a thousand cases of insurance claims that were unsettled (AKI, 2008).

In the recent past, the Kenyan insurance companies have been passing through ranging times. The reason behind this is the dependence of the companies on outlook and performance of other economic sectors and the heavy effect by remote environment changes. In the study by AKI (2008) the insurance companies experienced adverse effects in the first quarter of 2008 following the political crisis in the country. The effects were perpetuated by factors like rising in the prices of the fuel pump, cost of living increase, technology advancement, change in customer needs, government regulations and. the competition for the few customers that were available

1.2 Research Problem

The financial distress issues are very diverse and can be approached from various disciplines and perspectives, several theories have been used to show the characteristics of a firm in financial distress; the current study is anchored on The current study is anchored on entropy theory where multiple discriminant analysis based on more than one ratio which is part of the variables in the study are used in predicting financial distress (Aziz and Dar, 2006).

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The government of Kenya has a goal to industrialize by the year 2030 (RoK, 2008). In this regard, it has encouraged relevant sectors of the economy which can facilitate the realization of the set vision. Insurance sector happens to be one such sector as it offers protection covers to the assets of investors within the economy. Provision of cover by insurance sector for investors' assets creates positive economic growth investment climate within the economy. However, for the past twenty years, there has been a collapse or a placement under statutory of at least 8 insurance firms. To be specific, two insurance companies were placed under receivership in the year 2008 and 2009; these were Invesco Assurance Company and Standard Assurance respectively. In addition, others were placed under statutory management like Blue Shield Insurance Company in 2011. To sum this up there was the collapse of some companies like United Insurance Company, Stallion Insurance, Lake Star Assurance Company and Kenya National Assurance Company (Cheluget, 2014).

To add on the matter, Nyanumba and Memba, (2013) observed that there is the use of financial performance as the mode of assessing financial health by most companies but there is a need to consider operational and managerial signals. The current study adopted a dual approach by using both surveys of managerial concerns and computation of various financial ratios from financial statements of insurance companies in an attempt to address the shortcomings of use of company financial reports.

A notable aspect of various local authorities' financial distress research was the lack of assessments that were in-depth and conclusions that were generalized pertaining the financial distress presence in the companies in Kenya (Ntoiti, 2013). Similarly, in insurance companies' financial distress, there is a tendency of testing the Altman's model

applicability in its prediction. It was adequately noted by Odipo (2011) that all research conducted with an aim of establishing the factors that lead to financial distress in insurance companies were not sufficient. The study, therefore, aims at bridging the research gap by answering the question: Does financial distress affect financial performance of insurance companies in Kenya?

1.3 Research Objectives

The objective of this study was to investigate the effect of financial distress on financial performance in the Kenyan insurance industry.

1.4 Study Value

Seemingly, there is diversity in the theoretical correlation between financial distress and financial performance of companies. Some empirical findings indicate a positive relationship whereas others indicate otherwise. The findings from this study assisted in adding more knowledge that will assist in bringing more clear understanding on this relationship.

Kenya is a country that has many insurance institutions. The management of these institutions learnt more on the financial distress impact on the financial performance of their companies. It enabled them to compare the findings with those of other companies and this assisted them in making a sound judgment on how to improve their financial performance. For example, the managers of insurance once they detect financial distress they can, reduce their spending on research and development, abandon unprofitable projects and other investments to spare money.

A model that forecasts financial failure can also be valuable to different stakeholders eg policy holder, creditors and investors to avoid losing their money in case of insurance failure

The policy makers in Kenya will also be guided by the findings of this research study due to the central role they play in ensuring that the economic environment within which companies operates is favourable for various business activities and transactions. The findings therefore, enabled them to formulate policies that addressed challenges that exist as far as financial distress is concerned.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

This chapter will look at various theories of financial distress, financial performance and assumptions from the observations of findings of researchers. Due to common insurance failures caused by financial distress, many types of research have been performed in the past to estimate the financial distress and its relationship with the financial performance. Various models have been used in carrying out the studies and they are essential in this particular research. Models on corporate failure are divided into two broad groups' namely quantitative and qualitative ones. The quantitative models deal with financial information that is published whereas qualitative ones deal with a company internal assessment. The two models try to outline both nonfinancial and financial characteristics which can be utilized in distinguishing failing and surviving companies.

2.2 Theoretical Literature Review

This area discusses theories of financial distress. These theories explaining financial distress include: credit risk, entropy, gambler's ruin, cash management, liquidity and profitability theory, balance sheet decomposition measure, and credit risk theory

2.2.1 Entropy Theory (Balance Sheet Decomposition Measure Theory)

This theory was first developed by Beaver (1966). This theory assumes a negative connotation to change indicating the badness on large structural changes and goodness on small changes. Hence, high financial decomposition measures were associated with

corporate failure. With the use of failure-predicting ratios Beaver (1966) constructed histograms on cashflow to total debt to determine the structural ability of failed firms and those surviving over time. He determined that ratio distributions on surviving firms were relatively stable in all years but for the failed one the instability began prior to failure.

The theory indicates that one way of determining the distress in a firm finance is through analyzing the changes that occur in its balance sheets. By examining the amount of change in a firm's balance sheet between two points in time one can note the financial health status of the firm. The theory uses both univariate and multiple discriminant analysis. The univariate analysis uses financial ratios and in particular accounting, ratios to predict financial distress. However single ratios calculated are subject to time variation of the ratios and their interrelatedness. Multiple discriminant analysis uses more than one ratio in predicting financial distress. If significant changes are observed in the balance sheet composition the firm is likely to suffer financial distress (Aziz and Dar, 2006).

Stakeholders can use financial decomposition in helping spot checking the performance of the firm. The symptoms of financial distress can be seen long before failure and this should guide interested parties in decision making (Aziz and Dar, 2006). Natalia (2007) argues that financial distress is not an abrupt event but a process that a company moves from one state to another in deterioration. The current study is anchored on this theory as it will help in detecting the different point of the financial distress, this will be very significant in decision making.

2.2.2 Cash Management Theory

Initially the theory was established by Beaver (1966). The theory assumes that there is certainty in the knowledge of firm's financial needs, its cash disbursement within a period of time and that both the holding cash opportunity cost and converting security transaction cost are constant and known. The theory looks at a firm as a liquid assets reservoir that is supplied and drained by inflows and outflows respectively. When there is a variation in the inflows the reservoir acts as a buffer. Following the theory, firm solvency can be determined by the exhaustion of the reservoir rendering the firm unable to cover or pay for the matured obligations (Beaver, 1966; Blum 1974).

The theory concerns itself with cash flow management in and out of the firm. To achieve this, the theory outlines how deficit within the firm is financed and how surplus money is invested. Of major concern in all firms is how to manage corporate cash balance in short terms. The reason for the concern is the fact that it's hard to accurately predict the flow of cash especially the inflows and also cash inflows and outflows don't have perfect coincidences (Aziz and Dar, 2006).

In order to avoid financial distress, the management should maintain a cash balance in the organization. Neither too much cash nor negative cash level is advantageous to the firm (Aziz & Dar, 2006). Too much investment in illiquid assets deprives the company the much-needed cash to finance operation. When operations are negatively affected, sales, as well as profitability, are also negatively affected which in turn cause financial distress (Blum, 1974). Financial distress can be avoided through proper cash management. The

theory is important in explaining why management should maintain a cash balance in the organization that is neither too much nor negative, avoid financial distress.

2.2.3 Liquid Asset Theory

Initially developed by Beaver (1966), the theory also looks at a firm as a liquid asset reservoir that is either supplied or drained by inflow and outflow respectively and it acts as a buffer in flows variations. Also, the firm solvency is explained in the likelihood that there will be an exhaustion of the reservoir which could bring failure due to incapability of the company to settle matured obligations. It is the assumption of the theory that a firm goes bankrupt when debt obligations exceed the profits in the current year or when a summation of both the expected equity value and current year profit becomes less than zero or negative.

According to Scott (1981), the ability to borrow from the capital market and raise capital within a firm lies on positive cash flow whereas a negative one reduces the capacity of a firm to borrow increasing the probability of bankruptcy. The theory becomes relevant due to its concept which outlines primary criteria utilized in establishing financial distress within company i.e. net cash flows relative to current liabilities.

2.2.4 Credit Risk Theory

This theory assumes that the correlation between credit rating changes is the same as that between equity prices (Merto, 1974: Black and Scholes, 1973). In the theory, the authors outline that business cycles are closely followed by credit cycles which translate to increase in bankruptcy and downgrade in case of a worsening economy. In the theory likelihood of bankruptcy or default in firm results from the macro economic variable

function. These are; interest rates, aggregate savings, unemployment, foreign exchange rates, and growth rates among others.

In a contract period, when a debtor violates the contract terms he is referred to as a technical default and he is actionable legally (Ijaz et al., 2013). There is an exposure to credit risks of lenders especially when debtors fail to pay their dues on time which leads to bankruptcy. With this in mind, credit risk can be referred to as financial risk loss of investors emanating from borrowers who fail to pay their due as per the agreement on the contractual terms (Natalia, 2007). If a company is exposed to credit risk then financial distress is a reality unless measures are taken to avert the situation (Ijaz et al., 2013). This theory is very important as it will help in determining debt an organization has in its financial statements and its effect on the financial performance.

2.3 Financial Performance

Financial overall performance refers to how well organizations are managed and satisfying the interest of their stakeholders. It also involves determining how effective an organization is in the application of its assets to generate revenue in its core business (Harber & Reichel, 2005). This performance can be measured both in financial values and in non-financial information (Hendriksen & Van Breda, 1999). According to Pierre et al., (2008) there is a slight difference between organizational performance and effectiveness. Organizational performance encompasses three specific areas of firm outcomes: The first is financial performance which includes profits, return on assets, return on investment, etc.; the second is market performance which includes sales, market

share, etc.; and the third is shareholder return which entails total shareholder return, economic value added and among others.

2.3.1 Meso and Macro levels

The meso and macro levels refer to the influence of support-institutions and macroeconomic factors respectively. These factors include; Debt leverage which is measured by the ratio of total debt to equity (debt/equity ratio). This ratio shows the degree to which a business is utilizing borrowed money. It reflects insurance companies' ability to manage their economic exposure to unexpected losses. This ratio represents the potential impact on capital and surplus of deficiencies in reserves due to financial claims (Adams and Buckle, 2000)

2.3.2 Liquidity

Liquidity refers to the degree to which debt obligations coming due in the next twelve months can be paid from cash or assets that will be turned into cash. Insurance liquidity is the ability of the insurer to fulfil their immediate commitments to policyholders without having to increase profits on underwriting and investment activities and/or liquidate financial assets (Chaharbaghi and Lynch, 1999). The cash and bank balances are to be kept sufficient to meet the immediate liabilities towards claims due for payment but not paid.

2.3.3 Asset Quality

Firms possess different types of assets such as current assets and fixed assets among other investments. The assets held by a firm will determine whether the firm will be able to

generate more revenue and enhance its financial performance (Dang, 2011). Other than the quality of assets, the efficiency with which the management carries out various operations is important. The costs incurred by an organization need to be highly controlled to enable the firm maximize profits. The financial statements always act as a proxy for management efficiency.

2.3.4 Size

The size of the firm is another factor that determines an insurance company's financial performance. The size of the firm affects its financial performance in many ways. Large firms can exploit economies of scale and scope and thus being more efficient compared to small firms (Ahmed, Ahmed, and Ahmed, 2010). The size is determined by net premium which is the premium earned by an insurance company after deducting the reinsurance ceded. The premium base of insurers decides the quantum of policy liabilities to be borne by them (Teece, 2009). Net Premium is expressed as the Total Premium earned less Reinsurance ceded.

2.3.5 Age

Age of a company do matter, older firms are more experienced, have enjoyed the benefits of learning, are not prone to the liabilities of newness, and can therefore; enjoy superior performance (Shiu, 2004). Older firms may also benefit from reputation effects, which allow them to earn a higher margin on sales. On the other hand, older firms are prone to inertia, and the bureaucratic ossification that goes along with age; they might have developed routines, which are out of touch with changes in market conditions, in which

case an inverse relationship between age and profitability or growth could be observed (Demirgüç-Kunt and Maksimovic, 1998).

2.3.6 Retention ratio

Retention ratio is the percentage of the underwritten business which is not transferred to reinsurers. A higher retention ratio with lower claims ratio is likely to impact on the performance of insurers' positively. Theoretically, a more efficient insurance company should have growth in profits since it is able to maximize on its net premiums and net underwriting incomes (Charumathi, 2012).

2.3.7 Ownership

Ownership do impacts on the financial performance of an insurance company. There are two main dimensions of the ownership structure: Ownership concentration that is., the distribution of shares owned by majority shareholders and identity of owners especially, foreign investors and institutional investors. Ownership structure influences the management of the company to either pay dividends or interest, or decide whether to retain much of its profits for further use in the company (Agiobenebo and Ezirim, 2002)

2.4 Empirical Literature Review

The portion highlights other researches done by various researchers globally and locally on financial distress and financial performance of organizations.

2.4.1 International Evidence

Several empirical studies have been done on financial distress in various contexts. In the provision of a comprehensive picture of a company financial status, Taffler and Tishaw

(1977) outlined that use of an approach that is multivariate in a potential problem that has univariate approach was the only logical solution. A 'Multiple Discriminant Analysis' (MDA) was proposed by Altman (1968). The analysis assisted in the provision of ratios with a linear combination that helped in distinguishing the surviving and failing companies. The technique is used commonly as comparative studies baseline and it dominated the corporate failure models literature until the 1980s. In the model, a term 'Z score' is used which is obtained from a combination of ratios into a single discriminant score. A low Z score normally indicates a financial health that is poor. In the study by Altman, sixty-six companies were studied and it consisted of equal numbers of survivors and failures. The study also used twenty-two ratios derived from profitability, solvency, activity, leverage and liquidity. From the ratios used and on predictive ability basis five were finally chosen. In bankruptcy prediction, the Z score was found to be seventy-two percent accurate initially.

In another study comprising of ninety-two companies, four ratios combination was used to formulate Z score equation though there were undisclosed coefficients (Taffler and Tishaw, 1977). There was a claim that a 99% classification was reached with the use of the 92 companies in deriving the Z score. Contrary to this, Taffler (1983) tested the model on 825 companies and results obtained were less convincing. Out of the total sample, one hundred and fifteen companies were classified as at risk by the equation and after four years bankrupt companies were 35% while 27% remained at risk.

In another study in the UK, a review of earlier research was done and reports on financial ratios done with the use of factor analysis (Ezzamel, Brodie and Mar-Molinero 1987). The researchers used 53 ratios which were outlined in five broad patterns. The patterns

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included asset turnover, fund or assets related cash flow, liquidity position, profitability and working capital position. The conclusion was that the in the study period the patterns were unstable even when similar groups of companies were considered. Generally, the report explained the possibility of identifying individual financial patterns and would be useful in reducing the studied number of ratios. The report also set out that the patterns long-term instability rendered them difficult to apply in various countries.

Balcaen and Ooghe (2004) argued that the statistical prediction models using ratios may be misleading due to manipulation of accounting information on which they rely on. To portray an upward earning firm tries to maintain positive earnings while lowering decrease reports. Researchers follow the assumption that the financial position indicated by the accounts is true and fair a rare case, especially in failing firms. Again, the models are restricted to large companies which meet certain criteria for example companies mandated to publish their accounts information which also depends on other factors like firm size. Nonetheless, they stressed the importance of financial ratios and the fact that they cannot be neglected.

The study revealed that the MDA has been shown to be the most applicable and more accurate. In the research using Altman's Z score, financial distress was predicted with a validity of 99% (Taffler and Tishaw, 1977). Although ratios may be misleading due to manipulation of accounting information, there is an assumption by Researchers that company's financial position exhibited by the accounts is fair and true. And finally, Profitability, liquidity, efficiency and leverage all of which are specific objectives of the study, have a role to play as possible determinants of financial distress in insurance companies.

2.4.2 Review of Local Research

In Kenya, various studies have been carried out on financial distress in different contexts. In this section critical review of local context, empirical literature will be provided. To begin with, a research was carried out to find out financial distress determinants in Kenyan insurance companies (Cheluget, 2014). To facilitate the research Altman's Z-score model was utilized and the study established that efficiency, liquidity, leverage and profitability play critical role in the determination of Kenyan insurance companies' financial distress. The study selected fifteen insurance companies out of the population of 45 insurance companies and the regression analysis showed a strong linear relationship where R was 66.3%.

In her study on the banking industry Kariuki (2013) instituted how financial distress impacted the achievement of the commercial banks. Twenty-two banks, 11 listed and 11 unlisted out of the population of 44 banks were selected. In measuring of financial distress the study used Altman's Z-score model whereas performance was attained through the return on assets ratio. The study revealed that financial distress is present in our commercial banks with the non-listed banks being more financially distressed than the listed banks. The effect of financial distress on financial performance was found to be negative. The model was found to be an accurate predictor with 67% validity.

In his MBA project, Makini (2015) carried out a study on how valid the Altman's z-score model was in financial distress prediction of Nairobi securities exchange listed companies. By using Altman (1968) model of predicting financial distress on 62, he found out that R-value was 1.00 implying that the relationship between Z-score and the

variables was very strong and positive. Also, the r square value was 100% indicating that all the variations in the Z-score were caused by the variables and that there was no external variation outside the model. Therefore the model generated from the study was useful in financial distress prediction of NSE listed companies and he concluded that all the firms were all financial distressed.

A research study was done on financial distress of Kenyan banking industry by Mamo (2011). In financial distress prediction, Altman model was utilized for the fourth three banks sampled. In failed firms, the model was 80% accurate predicting eight out of the ten firms. For the surviving firms, the prediction was 90% valid.

To conclude we find that financial distress and performance have a relationship as outlined by the strong linear relationship. According to Mamo (2011), a 90% validity of the Altman Z score was established in finical distress prediction. Financial distress is present in the companies with the non-listed firms being more financially distressed than the listed.

2.5 Conceptual Framework

FINANCIAL DISTRESS

Z score model

→

FINANCIAL PERFORMANCE

ROA

The theoretical framework portrays the independent and dependent variable relationship. The picture above indicates that in studying the financial distress Z score model will be utilized while financial performance will be represented by ROA.

2.6 Summary of Literature Review

In conclusion, the literature shows that there exist numerous approaches to predicting corporate financial distress. Depending on the nature of data used to estimate the models, they can be categorized into quantitative models and qualitative models, the most popular accounting-based models; which rely on data from financial statements include the univariate model Beaver"s (1966), multivariate Altman"s (1968). Of importance to note is that statistical evidence that supports multivariate and univariate techniques in failure prediction happens to be impressive with a predictive power that is considerable. Lastly is viable to bear in mind some specific caveats like exercising of care by decision makers when utilizing previous models and that precision in model specification requires specific samples.

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

The methodology utilized in collecting, analyzing data and results reporting are discussed in this chapter. The chapter aims at explaining the tools and methods used in data collection and analysis to facilitate the obtaining of appropriate and crucial information in relation to the study subject.

3.2 Research Design

A research design can be explained as a framework that helps in research conduction through the provision of a plan on how to carry out a research and assist the researcher to follow the plan without deviations (Kariuki, 2013).

The study applied descriptive research design in finding out how finance performance is affected by financial distress in insurance firms. It's concerned with precise prediction and narration of facts. Descriptive research design was utilized by Cheluget (2014) of their study of Kenyan Insurance Companies financial distress. The study applied Altman (1968) Z-score model in the prediction of financial distress in corporations. The Z score model has been used by Makini (2015), Kariuki (2013) and Mamo (2011) in analyzing financial distress with fine results.

3.3 Population and Sample

A population is an entire group from which a sample is drawn. The population included all the forty insurance companies who's licensing and regulation is done by the Kenyan

Central Bank as mandated under the insurance Act cap 487 in Kenya. (As illustrated in Appendix I).

A sample is a sub set of the population under consideration. A sample of ten insurance companies was used which included Five NSE listed insurance companies and five non-listed. The selection of the sample was influenced by the fact that only five insurance are listed on NSE. This constituted twenty-five percent of all insurance firms in Kenya which is sufficient for generalizing. Random sampling was used to select the non-listed insurance. (As illustrated in Appendix II).

3.4 Data Collection

This study used secondary data which was collected from financial statements as per the audits from the selected institution. The insurance regulating body that is Insurance Regulatory Authority (IRA) provided the data needed for the study.

A period of five years (2013-2017) was the duration within which the data was considered. The data was in form of total assets and liabilities, retained earnings, equity book value, taxes and interests earnings, and current liabilities and assets.

3.5 Analysis of Data

Data analysis is the procedure followed in processing, coding and analyzing raw data to address the research objectives. In the prediction of Malaysian financial distress, Karbhari (2004) utilized the model of Altman Z score. The results obtained indicated an 88% firm's health prediction an accuracy that can be said to be significant. The validity in Kenya with the same model was 90% as Mamo (2011) illustrated in his study.

Similarly, another study in Kenya whose aim was to evaluate how Altman's model could be used in financial distress prediction indicated that it was 80% applicable (Bwisa, 2010).

The study's aims at establishing the financial distress and performance relationships among the Kenyan insurance companies. The quantitative data will be analyzed using multivariate analysis where financial distress will be calculated using Altman Z score model. The period of analysis will cover five years from 2011 to 2015. To indicate the direction and strength of the variables relationship correlation analysis will be used. The study will adopt the following conceptual model in explaining the relationship between the variables.

3.5.1 Conceptual Model

$P = f((X1)$

The above model was based on an assumption that the profitability of insurance companies was a function of the financial distress. This study assumed that there was an inverse relationship between fraud and the profitability of a firm.

3.5.2 Analytical Model

The analytical model used is as follows.

$$Y = \beta_0 + \beta_1X_1 + \beta_2X_2 + \beta_3X_3 + \beta_4X_4 + e$$

Where:

Y = Financial performance measured by Returns on Assets

X1 = Financial distress measured by Altman Z score as shown below

Z=6.56T1+3.26T2+6.72T3+1.05T4

Where:

T1 = Working Capital / Total Paid-Up Capital, Reserves & Liabilities (Total Assets)- Liquidity

T2 = Retained Earnings / Total Paid-Up Capital, Reserves & Liabilities (Total Assets) – Financial Leverage

T3 = Earnings before Interest and Taxes / Total Paid-Up Capital, Reserves & Liabilities (Total Assets) - Productivity

T4 = Total Equity / Total Liabilities – Capital structure

Z = Overall Index

X2 = Financial Leverage measured by Retained earnings / Total Assets

X3 = Productivity measured by EBIT/ Total Assets

X4 = Size measured by log of total assets

Details of the variables as follows:

T1= Working Capital / Total Paid-Up Capital, Reserves & Liabilities (Total Assets)

The variable can be termed as a liquidity ratio that measures a company's net liquid assets over its total capital.

T2= Retained Earnings / Total Paid-Up Capital, Reserves & Liabilities (Total Assets)

The variable is a measure of how a company utilizes its own funds in financing its assets. Retained earnings show the recorded and accumulated surplus earnings in an account. When the ratio of company's retained earnings in relation to total assets is larger a company uses less debt due to the profits retained.

T3= Earnings before Interest and Taxes / Total Paid-Up Capital, Reserves & Liabilities (Total Assets)

The variable measures a company true productivity by disregarding tax existence and leveraging the factors that affect the company actual earnings (Altman, 2000). The ratio is essential when measuring the corporate failure as a factor since for a company to exist its earning power is obtained from its owned assets. In comparison to other profitability ratios like cash flow, this ratio outperforms them.

T4= Total Paid-Up Capital & Reserves (Equity) / Total Liabilities

The last ratio is solvency one which tabulates the maximum fall in equity value of a company before it falls under the category of 'insolvent. To calculate the equity one sums all the shares i.e. the preferred and common stock. On the other hand to get the total liabilities one check the statements on the annual report indicating the short and long term liabilities.

Zones of discrimination

Z< 1.1 indicates that a firm will be bankrupt and it's in the distress zone.

1.1 <Z<2.6 outlines a grey zone meaning a high probability of a firm becoming bankrupt.

Z> 2.6 shows a safe zone and that a firm cannot become bankrupt.

3.5.3 Parameterization and Measurement

ROA is a standard measure of profitability in many studies; it shows the competence of company's management in utilizing assets at its disposal to earn profit. Return on assets was used to measure financial performance; this is because ROA allow for comparability between insurance performances (Wen, 2010). It shows also shows how efficiently the insurance is utilizing its assets to generate earnings and will be calculated as follows.

ROA=Net income/Total assets (Shareholder's Equity)

Where:

Net income is the quantity of money remaining after all operating expenses, interest, taxes and chosen stock dividends

Total assets include whatever a company owns that has monetary value, even though it cannot be willingly bought. They're spilt into two classes -- current assets, which refers to assets that an enterprise can (or will) promote within one year, and long term assets, which can be the assets an agency cannot (or does not plan to) promote within a year.

3.5.4 Diagnostic Tests

This study employed various tests to achieve the research objective. The relationship between variables was established with the use of Correlation analysis; a multicollinearity test was carried out to establish whether any two variables are closely correlated. Finally, a t-test was used to test the significance of the relationship between financial distress and financial performance.

CHAPTER FOUR

DATA ANALYSIS AND PRESENTATION OF FINDINGS

4.1 Introduction

The aim of this research was to examine the relationship between financial distress and the financial performance of insurance companies in Kenya. Financial distress was the independent variable which was measure using the Altman's Z-score model between the year 2013 and 2017. The financial performance of the insurance companies was the dependent variable and was measured using the Return on Assets (ROA) ratio. The study targeted five NSE listed insurance companies and five non-listed. This chapter presents the data analysis in the following order: 4.2 descriptive statistics, 4.3 Financial Distress and Financial Performance 4.3.1 Result of correlation analysis, 4.3.2 Result of Model Goodness of Fit Test 4.3.3 Result of ANOVA, 4.3.4 Estimated Model, 4.4 Discussion, 4.5 Summary

4.2 Descriptive Statistics

Table 4.1: Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
Y = ROA	50	-.0081	.1386	.035668	.0294006
X1 = Financial Distress	50	.9224	5.8043	2.455902	1.2688961
X2 = Financial Leverage	50	-.0463	.2493	.078530	.0771545
X3 = Productivity	50	-.0121	.1386	.043185	.0328370
X4 = Size	50	14.3725	18.1981	16.887768	.9874504
Valid N (listwise)	50				

Source: Author, 2018

The results on the Z score which was determined by X1 had a mean of 2.456 and a standard deviation of 1.269. Therefore it was evident hat that there was greater deviation from the mean as far as the observed values for the variable were concerned. It was further noted as illustrated in Table 4.1 that the minimum observation for the Z score was represented by 0.9224 and the highest observation was 5.8043. The standard deviation of 1.269 confirmed that there was very great deviation of the values of Z score. This implies that there are some insurance firms in Kenya that were on distress or grey zone whereas others were on safe zone hence the reason why there was a huge deviation from the mean among the observed values.

The dependent variable return on assets had a mean of .036 and standard deviation of .029. Comparing the mean and standard deviation values, one is able to note that there was very great deviation of the ROA observed values from the mean. This means that the insurance firms had great variations on the net income after tax where some had small figures and others significantly large figures. The same also applies to assets since some insurance firms had smaller value of total assets whereas other had large values of total firm assets.

Financial leverage that was determined by the ratio of retained earnings to total assets had an average of 0.079 with a standard deviation of 0.077 from the mean. This also indicated quite high deviations from the mean for this variable.

Productivity on the other hand showed a mean value of 0.0432 with a standard deviation of 0.328 that again represented high deviations among the insurance companies in Kenya. This therefore forms the basis for the great deviation that is illustrated in Table 4.1 above.

4.3 Financial Distress and Financial Performance

The goal of this study was to examine the connection between financial distress and the financial performance of insurance companies in Kenya. In order to attain this, multivariate regression analysis turned into conducted wherein the financial distress measured using Z score (model) was the independent variables whereas the financial performance of the insurance companies measured by ROA was the dependent variable in this study.

4.3.1 Results of Correlation Analysis

Pearson's correlation is used to determine the correlation between the dependent and the independent variables. Positive correlation indicates that increasing the independent variable increases the dependent variable while the vice versa is true for negative correlation. Strong correlations are either 1 or -1 or near these values while a correlation of zero indicates that there is no correlation between the variables.

The correlation table indicates the various correlation of the independent variables against the dependent variable as shown in table 4.2.

Table 4.2: Correlation Analysis Table

	$Y = ROA$	$X1 = Financial$ $Distress$	$X2 = Financial$ $Leverage$	$X3 = Productivity$	$X4 = Size$
Y = ROA	1				
X1 = Financial Distress	-0.528	1			
X2 = Financial Leverage	-0.336	0.712614931	1		
X3 = Productivity	-0.979	0.582602525	0.35252817	1	
X4 = Size	0.457	-0.624061098	-0.531428475	-0.490205557	1

Source: Author, 2018

All the variables show negative correlation against financial performance apart from Size which was positively correlated. The inverse relationship on the correlation analysis table indicates that increasing financial distress in a firm leads to reduction in financial performance. The same results are obtained by financial leverage though at a weaker level while productivity has the same inverse relationship against the financial performance but to a very high extent since the correlation against financial performance is at -0.979.

Size of a company has a positive significant correlation against financial performance which means that increasing the size of a firm leads to increase in financial performance of the company.

Table 4.3: Regression Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.981[a]	.962	.959	.0059616	2.057

Source: Author, 2018

The regression model shown provides a coefficient of determination of 95.9%. This is the measure of the predictability of the changes by the dependent variable by the use of the regression model. We can therefore say that the regression model could be in position to explain 95.9% of the changes in financial performance. Only 4.1% of the changes in financial performance are explained by other factors that are not in the model. This therefore shows a very good model that can be used to predict financial performance for the insurance companies listed at NSE.

The Durbin Watson Score indicated measures presence or absence of autocorrelations in the model. A Durbin Watson score of 4 or above shows presence of autocorrelations while the vice versa is true. Table 4.3 therefore gives a value of 2.057 which indicates absence of autocorrelations or residual errors in the model.

4.3.2 F Test Statistic

The study employed the F test statistics in either rejecting or failing to reject the null hypothesis by comparing the F calculated score in the ANOVA table with the F statistic score at 95% degrees of freedom. The significance of the model is also determined by comparing alpha of 0.05 with p value from the ANOVA table. A p value of less than 0.05 shows that the model is significant.

Table 4.4: ANOVA

Model		Sum of Squares	Df	Mean Square	F	Sig.
	Regression	.041	4	.010	286.687	.000[b]
1	Residual	.002	45	.000		
	Total	.042	49			

Source: Author, 2018

The model is significant as the p value is 0.000 which is less than 0.05, while the study rejects the null hypothesis as the F calculated value of 286.587 is greater than F statistic value of 2.3 at alpha of 0.05, and degrees off freedom of 4 and 45. We therefore conclude that there is a negative statistically significant effect of financial distress on financial performance.

4.3.3 Regression Coefficients

The regression coefficient of the table is shown in the table 4.5 below which is used to show the predicting equation from the multiple linear regression analysis.

Table 4.5: Regression Coefficients

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig
		B	Std. Error	Beta		
	(Constant)	-.005	.021		-.224	.823
	X1 = Financial Distress	-.002	.001	-.098	-1.975	.054
1	X2 = Financial Leverage	.019	.016	.050	1.194	.239
	X3 = Productivity	.916	.033	1.023	27.828	.000
	X4 = Size	.000	.001	.010	.251	.803

Source: Author, 2018

The resulting equation given by the equation $Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + e$

Becomes

$Y = -0.005 - 0.002\ X_1 + 0.19\ X_2 + 0.916\ X_3 + 0.021$

This model would be used to predict up to 95.9% of the changes in financial performance of insurance companies in Kenya.

4.4 Discussion of Research Findings

The main findings of the study are that there exists a statistically significant but inverse impact of financial distress on financial performance. This was determined by the fact that there existed a strong negative correlation between financial distress and financial

performance. The F test statistic showed that there was a statistically significant effect as the study rejected the null and at the same time the model was significant with p value being less than 0.05.

The study also found a negative correlation coefficient between financial leverage and financial performance as it was explained by retained earnings over total assets. The study showed that increasing financial leverage led to a decrease in financial performance.

Size on the other hand was found to have a positive correlation which means that increasing the size of an insurance company would lead to an increase in financial performance of the company.

The descriptive statistics of the study showed that majority of the firms were on grey zone of distress. This shows that the Altman's Z-score model is appropriate to predict financial distress. This finding supports the study by Shisia et al. (2014) who concluded that the Z score model is suitable to predict the financial distress of firms.

The study found out that most of the insurances were on the grey zone. With the non-listed insurance under study having two of them on the brink of going to financial distress zone this is in contrast to the listed insurance where we had one insurance firm on the brink of going to financial distress zone

The relationship between financial distress and financial performance from the regression analysis indicates a perfect negative correlation. So this can be explained that the Return on asset of the firm showed a decrease with the increase in financial distress. According to Wruck (1990), improved corporate performance due to financial distress could be as a

result of managers being forced to make difficult value maximizing choices which they would otherwise avoid however the findings were that there existed negative correlation between financial distress and financial performance.

CHAPTER FIVE

SUMMARY, CONCLUSION AND RECOMMENDATIONS

5.1 Introduction

This chapter offers the summary of the study findings, conclusions that have been drawn by way of the researcher according to the findings of the study, limitations encountered by the researcher and the recommendations made by the researcher for the status advancement. The study in addition illustrates the recommendations that may be implemented via the relevant authority to warrant effectiveness on the management of corporations efficiently.

5.2 Summary of findings

The objective of this study was to determine the impact of the financial distress on the financial performance. Study on ten insurance companies in Kenya where five were listed and the other five were non-listed in in the NSE over the period of five years (2013 until 2017) was done. Further on, financial performance determinant such as ROA was identified. It shows that there was a positive relationship between financial distress (Z score) and financial performance (ROA), where the return on asset of the firm shows an increase with an increase in financial distress.

Concerning the relationship between the financial performance of the insurance firms in Kenya and financial distress as per the model, the study findings discovered that financial distress explained 95.9% of the financial performance of the insurance firms in Kenya between the period 2013 and 2017. It was therefore clear that only 4 percent of the

variance on the financial performance of the insurance firms was explained by other factors other than financial distress, financial leverage, productivity and size of the insurance company. The study results therefore confirmed that this relationship was statistically significant with p value being less than alpha value.

The study found out that financial distress is present in our insurance companies with the listed insurance having one company on safe zone and one on the brink of distress zone while non-listed insurances had two insurances on the safe zone and two on the brink of going to distress zone. These companies also experienced decreased financial performance as suggested by the study results that there was an inverse relationship between financial performance and financial distress of insurance companies in Kenya.

5.3 Conclusion

Financial distress among insurance firms in Kenya has been on the increase and this was evident from the large number of insurance companies being on grey zone while a few being on the brink of going to distress zone between 2013 and 2017 where a few insurance firms were on the safe zone. The effect of financial distress on financial performance differed greatly from one firm to another where some firms were on safe zone whereas other was on distress zone. However, there was an inverse statistically significant relationship among the financial distress and the financial performance of the insurance firms.

Size of an insurance company was observed to be positively correlated with financial performance. This means that increase in size of insurance companies resulted to increase in their financial performance. However the resulting predicting model for obtaining

financial performance does not incorporate size of a company since the regression coefficient for size was found to be zero.

5.4 Limitations of the Study

Study is done with a sample size of 10 companies carefully chosen from insurance sector. Due to the time constraints the study period is only five years and the only one sector is chosen for study, however the study continues to be useful for the imminent researchers who need to target this area.

The study also used secondary data that may limit the result findings. Secondary data limits the findings as there are elements of the data that may not be known through secondary data. It would be difficult for instance to identify instances of earnings management by the use of entirely the secondary data.

The study was also conducted for a period of 5 years. There are no much changes expected to have taken place in the form of policy and macro-economic variables such as change in the political landscape among others.

5.5 Recommendation for Policy

There is need for insurance to adopt the latest technologies like M-Pesa, E-commerce and electronic money transfer this will ease customer burden of movement and help such insurance tap large market share

Not only must companies, adopt new technologists who can build mobile and web applications geared to insurance, because mobile platforms can open channels to those

never covered before but also insurance must recruit qualified and talent agents who can sell products to customers by providing more and clearer information.

There is a bright future for the Kenyan insurance industry, attributed to rapid growth in the population and consumer demand. "Kenya's steady economic growth and expanding middle class with high disposable income is proving it to be a high potential market for insurance companies. Currently, Kenya's overall insurance penetration as a percentage of the GDP is at three per cent, almost triple that of Tanzania and Uganda," EY global insurance leader Shaun Crawford said during the launch of the report in Nairobi. Hence insurance should be geared to developing gross domestic product or customized product to tap to this new upcoming market.

Insurers need to be prepared to refine distribution channels and product lines from agents and brokers to mobile phones, direct channels and bank assurance, a revolution that increased financial penetration in the country.

5.6 Suggestions for Further Research

There is need for further researcher on this area despite the milestone which has been achieved. Studies should be carried on how creative accounting influences the prediction power of the Altman distress model.

Future researchers can study the financial distress effect on the financial overall performance using distinctive approaches.

The research is carried out by using return on asset as an indicator of financial performance. It is suggested that the future researchers have to use different measures of

financial performance together with stock returns, economic value added and return on investment.

The study is accomplished on a sample size of 10 firms it's suggested that the future researchers have to develop their study sample size in order that to obtain relevant result to large number of firms

The study carried out by the use of Z score model including five ratios to measure the financial health. Some of the other models are available that can be used to find out the financial distress. It's recommended to use a seven factor model or an appropriate model must be derived that best fits the Kenyan insurance firms.

Researcher should have study bankruptcy cost or financial distraught cost among small company wherein the prevalence of business failure is more than larger corporations A similar study should also be undertaken by the use of both primary and secondary data collection methods. The period should also be increased to a period of about 20 years in order to capture periods with changes in major economic variables and business ideologies.

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APPENDICES

Appendix I: List of Insurance Companies in Kenya

1	AAR Insurance Kenya	23	Liberty Life Assurance Kenya Limited
2	APA Insurance - Part of Apollo Investments	24	Madison Insurance Company Kenya
3	Africa Merchant Assurance Company – AMACO	25	Mayfair Insurance Company
4	Apollo Life Assurance	26	Mercantile Insurance Company
5	AIG Kenya Insurance Company	27	Metropolitan Life Insurance Kenya
6	British-American Insurance Company Kenya	28	Occidental Insurance Company
7	Cannon Assurance Company Limited	29	Old Mutual Life Assurance Company
8	Capex Life Assurance Company	30	Pacis Insurance Company
9	CIC General Insurance	31	Pan Africa Life Assurance
10	Continental Reinsurance	32	Phoenix of East Africa Assurance Company
11	Corporate Insurance Company	33	Pioneer Assurance Company
12	Directline Assurance Company	34	Real Insurance Company
13	East Africa Reinsurance Company	35	Resolution Insurance Company
14	Fidelity Shield Insurance Company	36	Takaful Insurance of Africa
15	First Assurance Kenya Limited	37	Tausi Assurance Company
16	GA Insurance Company	38	Heritage Insurance Company
17	Geminia Insurance Company	39	Jubilee Insurance Company Limited
18	ICEA LION Insurance Company	40	Monarch Insurance Company
19	Intra Africa Assurance Company	41	Trident Insurance Company
20	Invesco Assurance Company	42	UAP Insurance Company
21	Kenindia Assurance Company	43	Xplico Insurance Company
22	Kenya Orient Insurance		

Appendix II: Insurance companies listed at the NSE

1	Jubilee Holdings Ltd
2	Pan Africa Insurance Holdings Ltd
3	Liberty Kenya Holdings Ltd
4	Britam Holdings Ltd
5	CIC Insurance Group Ltd

Appendix III: Jubilee Holdings Ltd Life

	Amount in millions					
	2013	**2014**	**2015**	**2016**	**2017**	**Average**
Total assets	45,892,342	53,254,632	60,030,052	66,339,515	76,506,445	
Total liabilities	37,190,330	45,339,763	49,825,278	57,091,090	65,065,806	
Working capital	11,836,250	11,377,503	12,625,202	11,762,780	11,344,057	
WC/TA*6.56	1.69191191	1.401500994	1.379664391	1.163165525	0.972689476	
Retained rnings	3,374,754	2,635,029	3,965,149	4,541,439	5,521,165	
RE/TA*3.26	0.239728407	0.161304176	0.21533191	0.223171531	0.235261198	
EBIT	1,193,100	2,012,210	2,565,375	2,513,910	2,499,767	
EBIT/TA*6.72	0.174705226	0.253913147	0.287178162	0.254651774	0.219568877	
Book value of equity	6,813,416	7,914,869	10,204,773	9,248,425	11,440,640	
BVE/TL*1.05	0.192364166	0.183296336	0.215051718	0.170093902	0.184623426	
Zsore	2.298709709	2.000014653	2.097226181	1.811082732	1.612142977	1.963835251
ROA%	0.017360958	0.03004195	0.032185713	0.029947792	0.026271865	0.027162

Appendix IV: Pan Africa Insurance

	Amount in millions					
	2013	**2014**	**2015**	**2016**	**2017**	**Average**
Total assets	18,623,185	22,060,574	22,809,253	26,522,227	27,464,929	
Total liabilities	16,294,057	20,584,515	21,128,983	23,715,364	24,737,885	
Working capital	3,505,546	3,304,170	3,689,591	3,340,206	2,276,224	
WC/TA*6.56	1.234825394	0.982538133	1.061135889	0.826165592	0.543676244	
Retained earnings	-402,795	-602,241	-734,697	-1,226,693	354,799	
RE/TA*3.26	-0.070509513	-0.088996128	-0.105006167	-0.150779917	0.042113516	
EBIT	422,093	573,792	336,667	593,150	902,870	
EBIT/TA*6.72	0.152308263	0.174786125	0.099187915	0.150287832	0.220910325	
Book value of equity	1,101,713	1,476,059	1,680,270	2,598,870	2,727,045	
BVE/TL*1.05	0.070995127	0.075292614	0.083500635	0.115065217	0.115749477	
Z score	1.387619272	1.143620745	1.138818272	0.940738724	0.922449563	1.106649315
ROA%	0.015865492	0.016969005	0.008952989	0.014155749	0.022905284	0.015769704

Appendix V: Liberty Ltd

	Amount in millions					
	2013	**2014**	**2015**	**2016**	**2017**	**Average**
Total assets	24,077,565	27,886,561	28,946,050	29,400,188	31,798,632	
Total liabilities	20,770,304	23,893,670	24,738,045	24,601,286	26,088,254	
Working capital	4,647,578	7,124,988	8,285,520	5,961,642	5,167,335	
WC/TA*6.56	1.266245639	1.676073334	1.877735	1.330208212	1.066011821	
Retained earnings	68,005	1,769,766	1,244,857	1,685,560	2,283,130	
RE/TA*3.26	0.009207588	0.206889518	0.140199917	0.186901036	0.234066793	
EBIT	1,147,762	1,312,296	989,542	951,616	1,198,999	
EBIT/TA*6.72	0.320338067	0.316232221	0.22972814	0.217510838	0.253384274	
Book value of equity	3,307,259	4,003,737	4,208,004	4,798,903	5,710,377	
BVE/TL*1.05	0.167191677	0.175942995	0.178607655	0.204820518	0.229831243	
Zsore	1.762982971	2.375138068	2.426270713	1.939440604	1.783294131	2.057425297
ROA%	0.039595781	0.027036607	0.028478739	0.02380148	0.030457411	0.029874004

Appendix VI: Britam

	Amount in millions					
	2013	**2014**	**2015**	**2016**	**2017**	**Average**
Total assets	36,439,005	44,947,665	54,919,284	62,332,464	73,772,988	
Total liabilities	27,388,573	33,681,877	40,253,493	50,699,544	61,718,460	
Working capital	12,163,776	13,220,921	17,993,363	23,007,624	23,963,438	
WC/TA*6.56	2.189806515	1.929560562	2.149271671	2.421370884	2.130863308	
Retained earnings	825,170	1,086,744	-200,930	246,958	716,566	
RE/TA*3.26	0.073823481	0.078820233	-0.011927173	0.012915951	0.031664776	
EBIT	2,956,999	2,962,014	-553,770	4,962,241	1,292,758	
EBIT/TA*6.72	0.545323158	0.44284245	-0.067760068	0.534974191	0.117757651	
Book value of equity	9,050,432	8,283,184	8,501,958	11,632,920	12,054,527	
BVE/TL*1.05	0.346967825	0.258220265	0.221770963	0.240920628	0.205080512	
Zsore	3.155920979	2.70944351	2.291355393	3.210181655	2.485366247	2.770453557
ROA%	0.068607882	0.048338885	-0.008118168	0.053599052	0.015727491	0.035630408

Appendix VII: CIC Insurance Group Ltd

	Amount in millions					
	2013	**2014**	**2015**	**2016**	**2017**	**Average**
Total assets	15,755,411	17,311,890	18,256,448	13,912,992	21,743,867	
Total liabilities	10,792,993	11,590,049	12,138,706	14,415,996	15,716,348	
Working capital	7,970,043	8,800,860	2,986,360	8,179,394	7,649,336	
WC/TA*6.56	3.318446093	3.334912687	1.073074105	3.85659854	2.307760812	
Retained earnings	2,002,704	2,275,677	2,776,755	2,595,259	2,685,634	
RE/TA*3.26	0.414385575	0.428532472	0.495836939	0.608103874	0.402649944	
EBIT	1,079,058	1,084,595	1,053,547	675,466	450,212	
EBIT/TA*6.72	0.460239962	0.421009976	0.387799195	0.326251285	0.139139218	
Book value of equity	4,962,419	5,721,841	6,117,742	13,912,992	6,027,519	
BVE/TL*1.05	0.482770623	0.518369944	0.529185656	1.013363322	0.402695012	
Zsore	4.675842252	4.70282508	2.485895896	5.804317022	3.252244986	4.184225047
ROA%	0.050641396	0.048704676	0.046022972	0.048549298	0.016182724	0.197154887

Appendix VIII: Icealion

	Amount in millions					Average
	2013	**2014**	**2015**	**2016**	**2017**	
Total assets	47,082,802	54,167,556	59,323,947	66,851,256	80,044,179	
Total liabilities	37,123,978	43,957,874	48,843,226	53,841,434	66,137,184	
Working capital	4,527,933	4,102,667	5,897,265	3,901,969	4,968,474	
WC/TA*6.56	0.630872404	0.496856375	0.652115383	0.382893579	0.407190002	
Retained earnings	3,702,097	4,128,434	3,776,658	4,063,190	5,075,054	
RE/TA*3.26	0.256332158	0.248464133	0.20753685	0.198141369	0.206694306	
EBIT	1,261,622	1,339,762	914,910	1,019,516	1,621,889	
EBIT/TA*6.72	0.180067869	0.166210206	0.103637663	0.102483453	0.136163481	
Book value of equity	9,958,824	10,209,681	10,480,721	13,009,822	13,906,995	
BVE/TL*1.05	0.281671463	0.243873602	0.225307744	0.253713768	0.220788728	
Zsore	1.348943894	1.155404316	1.188597639	0.937232168	0.970836518	1.120202907

Appendix IX: Kenindia

	Amount in millions					
	2013	**2014**	**2015**	**2016**	**2017**	**Average**
Total assets	22,007,144	24,802,433	32,149,766	33,837,452	38,245,774	
Total liabilities	19,699,139	22,723,165	28,115,625	29,610,565	33,328,846	
Working capital	4,063,255	3,952,852	6,297,748	3,957,681	3,125,919	
WC/TA*6.56	1.211195455	1.045490542	1.285024186	0.7672678	0.536164561	
Retained earnings	1,202,230	914,335	1,706,158	69,440	2,067,631	
RE/TA*3.26	0.178090796	0.12017902	0.17300515	0.006690055	0.176241094	
EBIT	2,659,271	-300,634	804,679	282,682	313,795	
EBIT/TA*6.72	0.812022729	-0.081454125	0.168195404	0.05613966	0.055135566	
Book value of equity	2,308,005	2,079,268	4,034,141	4,226,887	4,916,927	
BVE/TL*1.05	0.123020872	0.096079547	0.15065815	0.14988675	0.154904054	
Zsore	2.324329852	1.180294984	1.77688289	0.979984264	0.922445275	1.436787453
ROA%	0.119773334	-0.005525184	0.02460077	0.008125553	0.006410486	0.030676992

Appendix X: APA

	Amount in millions					
	2013	**2014**	**2015**	**2016**	**2017**	**Average**
Total assets	13,255,560	15,876,389	17,347,723	18,307,130	18,862,429	
Total liabilities	8,970,503	10,709,549	12,008,686	12,671,617	12,413,495	
Working capital	3,457,515	5,777,209	6,444,763	4,654,723	3,864,279	
WC/TA*6.56	1.711078099	2.387097661	2.437071729	1.667928445	1.343923958	
Retained earnings	2,354,365	2,909,755	3,044,750	3,528,587	4,143,335	
RE/TA*3.26	0.579019664	0.597478514	0.57217221	0.628345001	0.716093993	
EBIT	598,365	881,474	850,601	827,041	747,242	
EBIT/TA*6.72	0.303345374	0.373101546	0.329497924	0.303582021	0.266215249	
Book value of equity	4,285,059	5,166,840	5,339,037	5,635,513	6,448,934	
BVE/TL*1.05	0.501567409	0.506574273	0.466827832	0.466971867	0.545485433	
Zsore	3.095010546	3.864251993	3.805569695	3.066827334	2.871718634	3.34067564
ROA%	0.035589519	0.051673526	0.041643679	0.03649589	0.032591137	0.03959875

Appendix XI: Corporate

	Amount in millions					
	2013	**2014**	**2015**	**2016**	**2017**	**Average**
Total assets	1,745,339	2,027,897	2,273,206	2,243,436	2,291,089	
Total liabilities	831,811	1,013,687	1,113,103	997,437	1,040,947	
Working capital	574,803	754,009	774,461	688,594	713,870	
WC/TA*6.56	2.160444292	2.439127352	2.234933464	2.013508137	2.04400056	
Retained earnings	385,905	505,560	504,342	0	547,938	
RE/TA*3.26	0.7208057	0.812726485	0.723275814	0	0.779663243	
EBIT	145,876	220,691	232,984	162,775	49,813	
EBIT/TA*6.72	0.561659781	0.73132093	0.688742015	0.487577092	0.146106659	
Book value of equity	913,528	1,014,210	1,160,103	1,245,999	1,250,141	
BVE/TL*1.05	1.153151858	1.050541735	1.09433552	1.311660736	1.261013337	
Z score	4.596061631	5.033716502	4.741286812	3.812745965	4.2307838	4.482918942
ROA%	0.074770002	0.080363549	0.081776135	0.056117937	0.013156626	0.06123685

Appendix XII: MADISON

	Amount in millions					
	2013	**2014**	**2015**	**2016**	**2017**	**Average**
Total assets	6,462,408	7,616,390	10,436,612	12,695,260	14,362,547	
Total liabilities	4,559,964	5,797,042	7,880,149	10,003,429	11,675,110	
Working capital	1,233,821	1,293,160	2,090,678	2,006,927	2,748,353	
WC/TA*6.56	1.252453537	1.113799267	1.314109184	1.037035958	1.255292371	
Retained earnings	443,408	477,557	788,011	823,937	0	
RE/TA*3.26	0.223679792	0.204406001	0.246144617	0.211577756	0	
EBIT	895,889	299,097	1,110,202	142,396	5,404	
EBIT/TA*6.72	0.931599193	0.263895604	0.714844764	0.075374677	0.002528443	
Book value of equity	1,902,444	1,819,347	2,556,464	2,691,830	2,687,437	
BVE/TL*1.05	0.438066222	0.329532605	0.340639143	0.282545265	0.241694412	
Zsore	2.845798745	1.911633477	2.615737707	1.606533656	1.499515226	2.095843762
ROA%	0.138630832	0.028834264	0.093276822	0.01066272	-0.000305865	0.054219755

Appendix XIII: Five year average for each bank

	ROA %	Financial distress
Jubilee Holdings Ltd	0.02716	1.96384
Pan Africa Insurance Ltd	0.01577	1.10665
Liberty Kenya Holdings Ltd	0.02987	2.05743
Britam Holdings Ltd	0.03563	2.77045
CIC Insurance Group Ltd	0.19715	4.18423
ICEALION	0.01617	1.1202
KENINDIA	0.03068	1.43679
APA	0.0396	3.34068
CORPORATE	0.06124	4.48292
MADISON	0.05422	2.09584

Appendix XIV: five years Average for listed

	ROA%	Financial distress
Jubilee Holdings Ltd	0.02716	1.96384
Pan Africa Insurance Holdings Ltd	0.01577	1.10665
Liberty Kenya Holdings Ltd	0.02987	2.05743
Britam Holdings Ltd	0.03563	2.77045
CIC Insurance Group Ltd	0.19715	4.18423
Total Average	**0.30559**	**12.08259**

Appendix XV: Five years average for non-listed insurance companies

	ROA%	Financial distress
ICEALION	0.01617	1.1202
KENINDIA	0.03068	1.43679
APA	0.0396	3.34068
CORPORATE	0.06124	4.48292
MADISON	0.05422	2.09584
Total average	0.2019	12.47643

Appendix XVI: Financial Statements Link (IRA)

http://www.ira.go.ke/index. php/publications/2- uncategorised/106-annual- reports