THE INFLUENCE OF FIRM-SPECIFIC FACTORS ON CAPITAL STRUCTURE OF INSURANCE COMPANIES IN KENYA

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The Influence of Firm-Specific Factors on Capital Structure of Insurance Companies in Kenya

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2016
DECLARATION

This thesis is my original work and has not been presented for a degree in any other University

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DEDICATION

This thesis is dedicated to my wife Francesca for her love, support and encouragement during the entire duration of the course. Further dedication is to my dearest daughter Sherry Wanjiku for her loving support and encouragement. This thesis is my legacy to them in the hope that it will inspire them to continually uphold the spirit of studying and hard work.
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<tr>
<td>ADF</td>
<td>Augmented Dickey-Fuller</td>
</tr>
<tr>
<td>AR</td>
<td>Auto Regressive</td>
</tr>
<tr>
<td>CHIV</td>
<td>Change in investment income</td>
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<td>CR</td>
<td>Cash ratio</td>
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<tr>
<td>CRDW</td>
<td>Cointegrating Regression Durbin–Watson</td>
</tr>
<tr>
<td>DW</td>
<td>Durbin Watson</td>
</tr>
<tr>
<td>EBIT</td>
<td>Earnings before Interest and Tax</td>
</tr>
<tr>
<td>EQ</td>
<td>Equity</td>
</tr>
<tr>
<td>GPR</td>
<td>Gross profit margin</td>
</tr>
<tr>
<td>IRA</td>
<td>Insurance regulatory authority</td>
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<tr>
<td>LA</td>
<td>Log of asset</td>
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<td>MMII</td>
<td>Modigliani and Miller Proposition II</td>
</tr>
<tr>
<td>NPV</td>
<td>Net Present Value</td>
</tr>
<tr>
<td>NSE</td>
<td>Nairobi securities exchange</td>
</tr>
<tr>
<td>ROCE</td>
<td>Rate of return on capital employed</td>
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<td>SEM</td>
<td>Structural equation modelling</td>
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<td>SR</td>
<td>Solvency ratio</td>
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<td>SV</td>
<td>Sales volatility</td>
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<tr>
<td>LSDVM</td>
<td>Least square dummy variable model</td>
</tr>
<tr>
<td>TTD</td>
<td>Total debt</td>
</tr>
<tr>
<td>ROE</td>
<td>Return on equity</td>
</tr>
<tr>
<td>ROA</td>
<td>Return on assets</td>
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<td>VIF</td>
<td>Variance inflation factor</td>
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OPERATIONAL DEFINITION OF TERMS

**Asset tangibility:** This is the total value of a firm’s fixed assets including machinery and equipment that can be pledged for debt (Hovakimian, Opler & Titman, 2001). In this study, the value is measured by the ratio of fixed assets to total assets.

**Optimal Capital structure:** mix of debt to equity, or capital structure that maximizes the value of the firm and decreases its risk profile (Morri & Beretta, 2008).

**Capital structure:** The capital structure of a firm is the specific mixture of debt and equity a firm employs in financing its operations (Abor & Biekpe, 2005).

**Firm risk:** The financial uncertainty faced by an investor who holds securities in a specific firm (Srivastava, Shervani, & Fahey, 1998).

**Firm size:** Refers to the relative size of a firm’s assets measured as a natural logarithm of total assets (Flannery & Rangan, 2006).

**Growth opportunity:** Refers to increase in the value of company assets over time. Or increase in company turnover and profitability (Rajan & Zingales, 1995).

**Long Term Debt Ratio:** A measurement representing the percentage of a corporation's assets that are financed with loans and financial obligations lasting more than one year. The ratio provides a general measure of the financial position of a company, including its ability to
meet financial requirements for outstanding loans (Diamond & Rajan, 2000).

**Profitability:** Technically refers to the excess of revenue over expenditure. In this study however, profitability is taken to be a measure of return on assets employed (Marx, 2013).

**Short-term debt ratio:** An account shown in the current liabilities portion of a company's balance sheet. This account is comprised of any debt incurred by a company that is due within one year. Diamond and Rajan (2000) noted that the debt on this account is usually made up of short-term bank loans taken out by a company.
ABSTRACT

Capital structure has been one of the most controversial issues in the field of finance during the past 40 years. There are a number of existing theories and empirical studies observing patterns involved in choosing a capital structure. However, until now, there is no universally acceptable theory. The purpose of the study was to carry out empirical test, to determine the influence of firm specific factors on the capital structure of Kenyan insurance companies. The study population involved all the registered insurance firms. The research targeted firms that had a continuous operation between 2003 and 2012 and the analysis was based on the year-end observations for ten consecutive years. The study objectives were to test the influence of firm specific factors: firm profitability, firm growth, firm size, and firm risk on capital structure of insurance companies in Kenya. The influence of independent variables and the dependent variable was moderated by the firm management control. This research used both primary and secondary data. The primary data consisted of audited year-end financial reports filed with the Kenya Insurance Regulatory Authority (IRA) and the Nairobi Security Exchange (NSE). Data collection process was very challenging because some companies had not filed all their returns with the regulator and were reluctant to provide the data for this study. For the purpose of analysis, the statistical package (EVIWES version 8) was used to compute descriptive statistics, correlation and regression analysis. The analyzed data was presented in form of tabulated descriptive statistics such as the mean, range, standard deviation, maximum and minimum values. Inferential statistics were also used to describe the data. Regression statistics were used to test the influence of the independent variables on the dependent variable. The panel regression results indicated that firm profitability, firm size and firm risk were significant factors while firm growth was insignificant. The whole model without moderation had 57.9% explanatory power on capital structure. However, with moderation of the firm management control, the three significant variables: firm profitability, firm size and firm risk had their beta coefficients change from positive to negative meaning they all had negative influence on capital structure. With moderation the model explanatory power improved from 58% to 66%.
This means that the management of insurance firms exerts significant moderating effect on the influence of firm specific factors on capital structure. The study established that firms are fully taking advantage of tax shield of debt finance. However this study recommends to the stakeholders in the industry to control the increase in debt ratio by increasing use of equity and retained earnings to avoid pushing the industry to bankruptcy. The study also recommends to the future researchers to consider studying those other factors that were not included in this research and also those other 10 firms that were excluded.
CHAPTER ONE

INTRODUCTION

1.1. Background of the study

The study of capital structure has received much attention in developed countries compared to developing countries. In most developed for instance, research on capital structure has mainly focused on understanding the forces behind corporate financing behaviour of large listed firms in different sectors. Here in Kenya majority of studies on capital structure have focused on listed non-financial firms. There is therefore need for a separate study on capital structure of financial firms in order to deepen knowledge on the subject. Kenya’s insurance companies leads within the East Africa Community and is a key player in the COMESA region (report by IRA, 2012). The industry employs over 10,000 people. According to Ndung’u (2012), the Kenyan insurance market wrote Kenya Shillings 100 billion of Gross Direct Premiums in the year 2011. It has grown at an average rate of 16% p.a. over the last 5 years. Kenya currently has 51 licensed insurance companies.

The theoretical foundation of this study is anchored on three main theories: the static trade-off, the pecking order and the agency theory. The static trade-off theory as advanced by Myers (1984) assumes that firms face a trade-off of benefits and costs with debt financing. This theory was then extended to include the benefits and costs associated with agency conflicts. Another modern theory is the pecking order theory which asserts that asymmetry of information makes firms to prefer internally generated funds (retained earnings) to external financing such that given an option of external financing they would choose debt to equity. Agency theory focused on the costs which are created due to conflicts of interest between shareholders, managers and debt holders. According to Jensen and Meckling (1976), capital structures are determined by agency costs, which includes the costs for both debt and equity issue. Since both equity and debt
incur agency costs, the optimal debt-equity ratio involves a trade-off between the two types of cost. Various empirical studies have been conducted in developed countries and in Kenya as well to investigate the determinants of capital structure on the basis of mainly trade-off and pecking order theories but both have generated inconclusive and contradictory predictions. Nevertheless, it is necessary that empirical studies be directed at testing the determinants of capital structure in various contexts (Harris & Raviv, 1991). The agency theory has largely been ignored by local researchers hence the need for a separate study to determine its explanatory power in the context of Kenyan insurance companies.

The nature of insurance business is to provide protection to policyholders in times of accident through the minimization of loss (Tornyeva, 2013). As a result of this function, insurance companies have always been concerned with both solvency and liquidity. Kingsley and Tornyeva (2013) argued that in order to manage risks, insurance firms must have effective ways of determining the appropriate amount of capital that is necessary to absorb unexpected losses arising from insurance claims and other operational risk exposures. A firm’s capital structure comprise of debt and equity capital. The debt security could be short term or long term, while equity security comprise of owners’ equity. Funds for firm’s operation can either be generated internally or externally, with internally generated funds either taking the form of rights issue or retained earnings (Rajan & Zingales, 1995). When funds are raised externally, firms may choose between debt and equity capital.

The key concern in decision making process by a firm is the determination of an optimal mix of debt and equity. Various theories have been suggested to explain whether optimal mix of debt and equity can be achieved. A particular debt equity ratio is said to be optimal when it results in the lowest possible weighted average cost of capital (WACC), and this optimal level is sometimes referred to as the target capital structure of the firm. Theories suggest that firms choose their capital structure depending on either costs or benefits associated with debt and equity financing. While debt provides benefits to the
firm through tax advantage and management discipline, it exerts pressure on the firm’s cash flows since interest and principal payments are obligations which must be met. Failure to meet these contractual obligations exposes a firm to the risk of financial distress. On the other hand equity financing exposes a firm to double taxation and dilution of ownership structure.

Empirical studies done in developed and developing countries have identified and tested various determinants of capital structure and filed different results. According to Abor and Biekpe (2005) more than 50 per cent of the assets of listed firms in Ghana are financed by debt and that there was a correlation between debt ratio and firm size, growth, asset, tangibility, risk and corporate tax. For any business organization, capital structure decision is one of the most important topics in corporate finance. Appropriate capital structure decisions would increase firms’ value. Capital structure decisions are determined by a complex set of factors (Chen, 2004). Bhabra, Lui and Tirtiroglu (2008) indicated that significant factors influencing capital structure decision are proportional to tangible assets, size, profitability, and growth opportunities. Furthermore, Frank and Goyal (2009) suggested that the reliable factors for explaining market leverage are median industry leverage, market-to-book assets ratio, tangibility of assets, profits, log of assets and expected inflation. The significant determinants of capital structure have been disagreed over decades of empirical studies. Specifically, the influential factors in determining how firms select the types of security to be issued are considered to be questionable.

The scenario described above points to the fact that the determinants of capital structure of listed firms in Kenya may not necessarily be the same as those in developed economies. It is therefore necessary to identify these factors in the context of Kenyan environment. Hermanns (2006) groups the determinants of capital structure into two broad categories; those arising from firm specific characteristics and those arising from external factors in which a firm operates represented by country specific economic conditions. Among external factors which explain the differences arising between firms
capital structure include the macroeconomic conditions such as economic growth, average interest rate and inflation. On the other hand, firm-specific factors are represented by asset tangibility, firm size, profitability, financial distress costs and growth opportunities. More studies needed to be done locally to test how firms in Kenya set their debt ratio which has been the common recommendation by all the studies that have been done in this field locally. Local studies have somewhat ignored testing of the moderating effect of the firm management control on the influence of firm specific factors on capital structure. It is this gap that the study sought to fill.

1.1.1 Overview of the Kenyan insurance companies

Kenyan insurance companies has changed significantly between the years 2003 and 2012 according to IRA report 2012: profitability of the insurance companies has generally been on an upward trend for the ten year period with yearly profits after tax hitting the highest point in 2012 at over shillings 13billion which is approximately 347.4%. However, some years registered a decline in the profit margins with 2004 indicating the lowest level at 2,320,364. However, the disputed general elections experienced in Kenya in December 2007 and 2008 as well as the global financial crisis that was happening at that same time affected the economy adversely. Both events badly affected the insurance companies, according to CBK’s September 2009 Monthly Economic Review

Kenyan insurance sector has registered tremendous growth in same period, with an average of 16% and year 2012 indicating the highest level of growth at 22%. This clearly points to a bright future for the industry. The high growth rate of insurance companies was largely attributed to the favourable macroeconomic environment: the performance of the Kenyan economy improved in 2012 compared to 2011. Real Gross Domestic Product (GDP) expanded by 4.6% in the year 2012 compared to 4.4% in 2011. The overall inflation rate stood at 3.2% in December 2012 compared to 18.9% as of December 2011 (Mainda, 2012). Years 2004, 2005 and 2008 growth rate declined. The
decline in the growth in 2008 was mainly occasioned by global financial crisis and post-election violence that rocked Kenya.

The Kenyan insurance sector has expanded in terms of value of the total assets. It is imperative to note that the total assets by book value in 2003 were below sh. 100 billion and by 2012 the value had grown to above sh. 300 billion which is approximately 347.4%. This trend points to a rapidly expanding industry. This expansion has been supported by growth in both equity (shareholder’s funds) and debt. However, it is imperative to note that debt has been growing at a higher rate than equity. The expansion of the industry was slowed down in the period between 2007 and 2008 because of two major events: one was global financial crisis and the post-election violence, according to CBK’s September 2009 Monthly Economic Review.

The proportion of debt finance is higher than equity in the Kenyan insurance companies and also shows a rising trend while the proportion of equity finance shows a declining trend. It is imperative to note that in 2003 the debt ratio was 69% while equity ratio was 31% while in 2012 debt ratio was 75% while equity ratio was 25%. The high debt ratio could be explained by favourable microeconomic environment particularly the stability of interest rates. The performance of the Kenyan economy improved in 2012 compared to 2011. Real Gross Domestic Product (GDP) expanded by 4.6% in the year 2012 compared to 4.4% in 2011. The overall inflation rate stood at 3.2% in December 2012 compared to 18.9% as of December 2011 (Mainda, 2012). The low cost of debt finance may have persuaded firms to borrow more debt and also the fact that debt finance is allowable for tax purposes. However, the high proportion of debt finance has significantly increased the risk of bankruptcy to many insurance firms and that coupled with increased cases of fraudulent claims could explain why 5 insurance firms closed shop in the last one decade.
1.2. Statement of the problem

In order to manage risks, insurance firms must have effective ways of determining the appropriate amount of capital that is necessary to absorb unexpected losses arising from insurance claims and other operational risk exposures (Tornyeva, 2013). The capital structure decision is very important for insurance companies. This is because of the need to maximize returns to shareholders and other stakeholders and also, the impact it would have on the Organization’s cost of capital and its ability to deal with competition (Keown et al., 2005).

Although several studies have been done on the determinants of capital structure of the companies listed on the Nairobi Securities Exchange, important questions remain about what determines the choice of capital structure for firms in different sectors. Kinyua (2005) established that profitability, company size, asset structure, management attitude towards risk and lenders’ attitude towards the company are key determinants of capital structure for small and medium enterprises in Kenya. Kuria (2010) conducted a study on the determinants of capital structure of firms listed in the NSE and established that profitability and asset structure are the only determinants of capital structure. Turere (2012) examined determinants of capital structure in energy and petroleum sector and concluded that company size, age of company, growth rate and ownership structure are the key determinants of capital structure.

While studies that have been done locally (Kinyua, 2005; Kuria, 2010; Turere, 2012) constitute important steps towards more realistic tests of determinants of capital structure, they still remain silent on the effect of firm management control on capital structure decisions. Little is also known about the influence a firm’s management may have as a moderating variable on the influence of profitability, firm’s size, firm’s growth and firm’s risk on capital structure, especially for the insurance companies in Kenya. This study seeks to explore how the capital structure is set and the influence of firm
management control as a moderating factor may have on the capital structure of the insurance companies in Kenya.

Literature suggests that debt requirements of a firm in one industry differ from a firm in another industry because the various industries experience different business environments (Titman & Wessels, 1988). As a result of the unique financial characteristics of insurance firms and the environment in which they operate and the massive collapse of eight insurance companies in the last decade (IRA report, 2008), there is a strong ground for a separate study on the influence of firm specific factors on capital structure of insurance companies in Kenya.

1.3 Objectives

This section outlines the objectives which the study addresses. This section is structured into two parts: part one the general objective and part two comprises of specific objectives.

1.3.1 General objective

To determine the influence of firm specific factors on capital structure of the insurance companies in Kenya.

1.3.2 Specific objectives

The study pursued the following specific objectives;

1. To determine the influence of firm profitability on capital structure of the insurance companies in Kenya.
2. To determine the influence of firm growth on capital structure of the insurance companies in Kenya
3. To establish the influence of firm size on capital structure of the insurance companies in Kenya.
4. To establish the influence of firm risk on capital structure of the insurance companies in Kenya.
5. To establish the combined influence of firm specific factors on capital structure of insurance companies in Kenya
6. To determine the moderating effect of firm management control on capital structure of the insurance companies in Kenya

1.4. Hypothesis

This study sought to address the following pertinent research hypotheses;

1. H0: There is no significant influence of firm profitability on capital structure of the insurance companies in Kenya
2. H0: There is no significant influence of firm growth on capital structure of the insurance companies in Kenya.
3. H0: There is no significant influence of firm size on capital structure of the insurance companies in Kenya.
4. H0: There is no significant influence of firm risk on capital structure of the insurance companies in Kenya.
5. H0: There is no significant influence of the combined firm specific factors on capital structure of the insurance companies in Kenya.
6. H0: There is no significant moderating effect of firm management control on the influence of firm specific factors on capital structure of the insurance companies in Kenya.
1.5. Scope of the study

The scope of this study covered the influence of firm specific determinants (profitability, growth, size, and risk) on the insurance companies in Kenya. These determinants are highlighted by the four theories and empirical studies reviewed in chapter two. The period of study was between 2003 and 2012. This period was identified in order to capture the most recent data on the insurance firms. This research studied all insurance firms in Kenya including the six quoted insurance firms. The study however did not cover ten insurance firms, eight of which collapsed on the way while two others came into existence after 2003 as their data was not available for the ten year period.

1.6. Justification for the study

The findings of this study could be beneficial to the following: future researchers, the regulator (IRA), the investors through the Nairobi Securities Exchange (NSE) mechanism and the insurance firms. The findings generated by this research would form the basis for further research by interested scholars, by providing background information and leads to areas that need further study. To the regulator, (IRA), the findings of this study could be important to the regulator to help understand the motives behind various financing decisions made by insurance firms, and the potential consequences of those decisions to the vulnerable groups like the clients (policyholders) and the investors. This would enable the regulator to design policies and rules that could help protect the interests of these vulnerable groups. To the investor and the NSE, the research findings would provide useful information that could be beneficial to the investors when making their critical investment decisions and finally to the listed insurance firms, the research findings would provide knowledge that could help the firms fine-tune their financial decisions to enhance their position in the market.
1.7 Limitations of the study

One of the major limitations encountered in the study was that some companies had not filed all their 10 years’ financial returns with the regulator as required and therefore, data for some years was missing for those companies. The study had to visit some of the firms to get this important financial information. However, two firms were reluctant to give this information until the study sought the intervention of the regulator.

The study used the secondary data which may contain some errors and this might eventually affect the results and the methodology. This was mitigated by the study sourcing the data from the regulator (IRA). Data from the regulator is considered credible because the regulator enforces very strict rules to ensure that the information filed is authentic and individual companies are duty bound to ensure that proper accounting practices are observed before submitting their reports and very heavy penalties are inflicted on companies that fail to adhere to the rules.
CHAPTER TWO

LITERATURE REVIEW

2.1. Introduction

The purpose of this chapter was to explore theoretical and empirical underpinning with the objective of finding what other scholars have researched on or written regarding capital structure. The chapter develops a conceptual framework, which forms the basis of comparison of data analysis and models. The chapter is structured as follows: theoretical review, conceptual framework, empirical review, critical review, research gaps and finally the summary of the chapter is presented.

2.2. Theoretical review

The theoretical framework of this study is based on the influence of firm specific factors on capital structure model. Some of those theories that are of interest in this study included; the Modigliani and Miller theory, the tradeoff theory, the pecking order theory and agency theory.

2.2.1 Modigliani and Miller theory

Modigliani and Miller (1958) argue that capital structure is irrelevant to the value of a firm under perfect capital market conditions with no corporate tax and no bankruptcy costs. This implies that the firm's debt-equity ratio does not influence its cost of capital. A firm's value is only determined by its real asset, and it cannot be changed by pure capital structure management. Consequently, it means that there is no capital structure. At the forefront of modern capital structure theory are the propositions put forth by Modigliani and Miller (Modigliani & Miller, 1958), (Modigliani & Miller, 1963) and (Miller, 1988) who, using economic theory established the well-known Modigliani and Miller propositions I and II (hereafter referred to as MM I and MM II, respectively).
In developing their first propositions (MMI) the following assumptions were made: First, that Capital markets are perfect, and no one person has the power to influence the price of goods. All assets are priced efficiently without the opportunity for arbitrage. Second, there are no agency costs, that is, the incentives of managers, shareholders and creditors are appropriately aligned. Third, there are no taxes and there is no distinction between personal and corporate taxes. The effect of any taxation is minimal and does not influence the model put forward. Fourth, there are no transaction and bankruptcy costs: These are the legal and underwriting costs associated with equity issues. Fifth, for debt issues, this can be the covenants imposed by creditors as well as the potential legal and administrative expenses that may be incurred during bankruptcy proceedings when financial risk is too high. Sixth, ordinary investors can borrow at the same rate as firms, that is, there is no single market participant who is of such a size as to be able to influence the cost and availability of debt finance. Personal gearing is said to be a substitute for corporate gearing. Lastly, there is an assumption of no information asymmetry between market participants, in that all ordinary investors have the same information as the firm‘s management regarding the firm‘s future investment opportunities. Investors are said to act rationally and have the same expectations regarding future events and indifferent to risk.

According to MM I, changes in a firm‘s capital structure have no long term effects on its market value; hence the market value of a firm is argued to be independent of its capital structure. This means that the choice of debt or equity sources of funding is irrelevant and can be considered to be perfect substitutes.
Modigliani and Miller (1958) "The Cost of Capital, Corporation Finance and the Theory of Investment"

Figure 2.1 illustrates Modigliani and Miller Proposition I, which assumes that the overall cost of capital of a firm will remain constant at various levels of gearing. As the firm takes on larger amounts of cheaper debt financing, the financial risk of the firm increases. Ordinary shareholders would now require a greater return to compensate them for this increase in financial risk. The increased return that is required by ordinary shareholders negates the benefit of any cheaper debt financing and results in the average cost of capital staying constant.

After much criticism to their proposition I, Modigliani and Miller revised their thinking and put forth their second proposition in 1963. The second proposition (MM II) relaxes the assumption of no taxes and also considers that interest payable on debt is tax deductible.
Figure 2.2: Modigliani and Miller proposition II


Figure 2.2 above illustrates MM II whereas debt financing increases the overall cost of capital decreases. Interest on debt is an allowable expense when determining a company’s tax liability and lowers the tax burden. Thus it has an effect of shielding corporate profits which is a benefit to the ordinary shareholder. As the level of debt increases so too does the tax benefits which offsets some of the risk that the ordinary shareholder would require as per MM I. As the increases in the required return by ordinary shareholders is lower than the benefits of debt, the overall cost of capital decreases as the level of borrowing increases. In the absence of bankruptcy costs and financial distress implications MM II promotes high levels of debt financing due to the after tax cost of debt being lower than the cost of equity and its resultant decreasing of the overall cost of capital to the firm. One can conclude that to continue in this manner, the optimal level of capital is at a 100% level of gearing (Atrill, 2009).
Miller (1988) revised MM II to take into account the effects of personal taxes as well as corporate taxes. In essence Miller stated that due to returns on stocks being taxed at relatively lower rates to returns on bonds/debt, an investor would be willing to accept a lower pre-return from stocks relative to the pre-tax return on bonds/debt. He pointed out two key findings. First, the deductibility of interest for tax purposes makes the use of debt financing favourable for a firm, and secondly, the lower tax rates on returns from equity for the investor lowers the cost of equity and makes equity financing more favourable for the firm. These two statements are directly opposed to each other and leave one with the question, which is a better method of financing to use, debt or equity? Miller went on to prove that although the presence of personal taxes lowers the cost of equity financing, it does not completely offset the savings from the lower cost of debt financing.

There is however a fundamental difference between debt financing and equity financing in the real world with corporate taxes. Dividends paid to shareholders come from the after tax profit. By contrast, interest paid to bondholders comes out of the before-tax profits. Modigliani and Miller (1963) suggest that in the presence of corporate taxes, a value-maximizing firm can obtain a target capital structure. In other words, if the market is not perfect, and this is the case with insurance firms operating in Kenya, as a result of, say, the existence of taxes, or of underdeveloped financial markets, or of inefficient case, firms must consider the costs entailed by these imperfections. A proper decision on capital structure can be helpful to minimize these costs.

The Miller and Modigliani theory is considered critical for this study because it provides the background of capital structure debate. With their first seminal paper (1958) they made their first proposition which kicked off the capital structure debate. Then after much criticism they came up with the second position (1963). Many of the study’s that studied the theory of capital structure either supported the first proposition or the second.
2.2.2 The trade-off theory

The original version of the trade-off theory grew out of the debate over the Modigliani-Miller theorem. When corporate income tax was added to the original irrelevance proposition (Modigliani & Miller, 1963) this created a benefit for debt in that it served to shield earnings from taxes. Since the firm’s objective function is linear, and there is no offsetting cost of debt, this implied 100% debt financing. To avoid this extreme prediction, an offsetting cost of debt is needed. The obvious candidate is bankruptcy. Kraus and Litzenberger (1973) provide a classic statement of the theory that target leverage reflects a trade-off between the tax benefits of debt and the deadweight costs of bankruptcy. According to Myers (1984), a firm that follows the trade-off theory sets a target debt-to-value ratio and then gradually moves towards the target. The target is determined by balancing debt tax shields against costs of bankruptcy.

Several aspects of Myers’ definition merit discussion. First, the target is not directly observable. It may be imputed from evidence, but that depends on adding a structure. Different papers add that structure in different ways. Second, the tax code is much more complex than that assumed by the theory. Depending on which features of the tax code are included, different conclusions regarding the target can be reached. Graham (2003) provides a useful review of the literature on tax effects. Third, bankruptcy costs must be deadweight costs rather than transfers from one claimant to another. The nature of these costs is important too. Are these fixed costs? Do they increase with the size of the bankruptcy? Are the costs one-time costs like a lawyer’s fees or are they permanent costs like the cost of a damaged reputation? The adjustment to be gradual rather than abrupt, the marginal cost of adjusting must increase when the adjustment is larger. This assumed form of adjustment cost is rather surprising since one expects to see large fixed costs and perhaps roughly constant marginal costs. This implies a very different adjustment path. Leary and Roberts (2004) describe the implications of alternative adjustment cost assumptions. For these reasons, we break Myers’s definition into two parts. The first part we call the static the trade-off theory. The second part is called target
adjustment behavior; a firm is said to follow the static the trade-off theory if the firm’s leverage is determined by a single period trade-off between the tax benefits of debt and the deadweight costs of bankruptcy, a firm is said to exhibit target adjustment behavior if the firm has a target level of leverage and if deviations from that target are gradually removed over time.

The standard presentation of the static the trade-off theory is provided by Bradley et al. (1984). The assumed tax structure is not intended to be strictly realistic. For instance, the tax code contains important dynamic aspects that cannot be properly represented in a single-period model. However, the model does contain some important elements of the actual U.S. tax code. Investors are risk-neutral and face a progressive tax rate on end-of-period wealth from bonds. Dividends and capital gains are taxed at a single constant rate. Risk neutrality induces the investor to invest into whichever security offers the better expected after-tax deal. The firm faces a constant marginal tax rate on end-of-period wealth. The firm can deduct both interest and principle payments, but the investor must pay taxes as these payments are received. Non-debt tax shields exist but they cannot be arbitraged across firms or across states of nature. If the firm is unable to make the promised debt payment, then it incurs deadweight financial distress costs, so “the pie shrinks.”

A major disadvantage for a firm relaying heavily on debt is that it increases the risk of financial distress, and ultimately liquidation. This may become harmful for both equity and debt holders. The risk of incurring the costs of financial distress has a negative effect on a firm’s value which offsets the value of tax advantages on borrowing. The most common example of a cost of financial distress is bankruptcy costs. Corporate bankruptcies occur when shareholders exercise their right to default. There are two forms of bankruptcy costs: direct and indirect (Megginson et al, 2007). Direct costs of bankruptcy are out-of-pocket cash expenses directly related to bankruptcy filing and administration. Document printing and filing expenses, as well as professional fees paid to lawyers, accountants, investment bankers, and court personnel are all direct
bankruptcy costs. Indirect costs of bankruptcy are expenses that result from bankruptcy but are not cash expenses sent on the process itself. These costs include the diversion of management’s time, lost sales during and after bankruptcy, constrained capital investment and R&D spending, and the loss of key employees.

Although indirect bankruptcy costs are difficult to measure, researchers have shown that they are significant. Many empirical studies indicates that relative to the pre-bankruptcy market value of large firms, direct costs are too small, comparing indirect costs, to provide an effective threat to the use of debt. Warner (1977) is the representative work for his argument. His study involved 11 rail firm’s profitability and is the first step in setting out a methodology for measuring and devaluing bankruptcy-related costs. He cautions that the costs are not small enough to be neglected completely in discussion of capital structure policy. But it would be reasonable to conclude that for firms of the size under consideration, ‘the expected direct costs of bankruptcy are unambiguously lower than the tax saving on debt to be expected at present tax rates in standard valuation models’ (p.345).

Warner’s work was criticized by Altman (1984) in the aspect that his results are based on a narrowly defined bankruptcy cost definition (lack of indirect bankruptcy costs) and the small sample size could not provide a whole picture. Altman investigated the empirical evidence with respect to both the direct and indirect cost of bankruptcy. Based on regression models, his results show very strong evidence that costs are not trivial. In many cases they exceed 20% of the value of the firm measured just prior to bankruptcy and even measure several years prior in some cases. In addition, the expected bankruptcy costs for many of the bankrupt firms are found to exceed the present value of tax benefits from leverage. This implies that firms were overleveraged and that a potentially important ingredient in the discussion of optimum capital structure is indeed the bankruptcy-cost factor. Finally, a study by Andrade & Kaplan (1998) of a sample of troubled highly leveraged firms estimates that costs of financial distress accounts as 10
to 20 percent of pre-distress market value. To summarize, the cost of financial distress and bankruptcy is:

The importance of agency theory is to help shed light on the role of the management in firm’s capital structure choices of and to help understand the balancing act that must happen in order to arrive at optimal capital structure. The theory also provides knowledge on the entrenched interest that motivates the various stakeholders of the firm. Finally, how agency cost influence the firm’s choice of capital structure. These are fundamental issues of this study.

Figure 2.3: Optimal debt ratio


According to the figure, managers of all-equity companies’ can increases firm value by replacing equity with debt, thus generating more taxes saving. Without cost of financial
distress, managers would maximize firm value by maximizing debt, a situation represented by the upper curve. We have to note that it is not in linear because of the cost of adjustment. The lower curve illustrates how the financial distress alters this conclusion. As a firm borrows more, it increases both the probability that it will go bankrupt and its expected bankruptcy costs. Beyond some point, the incremental expected bankruptcy costs offset tax advantages. Optimum is reached when managers find the mix of debt and equity that maximize firm value. If there were no costs of adjusting capital structure, then each firm should always be at its target debt ratio.

There are a number of researches based on the existence of a capital structure. Graham and Harvey (2001) surveyed 392 CFOs about the cost of capital, capital budgeting and capital structure. They find moderate support that most firms have target debt ratios and follow the trade-off theory. Marsh (1982)’s study provides evidence that companies appear to make their choice of financing instrument as if they have target levels of debt in mind and more importantly, the results are consistent with the notion that these target debt levels are themselves a function of company size, bankruptcy risk and asset composition. In contrast to previous studies that are based on time-series analysis of macro-data, Bradley, Jarrell and Kim (1984) used cross-sectional, firm-specific data to investigate the behaviour of 20-year average firm leverage ratios for 851 firms covering 25 two-digit SIC industries. The strong finding of intra-industry similarities in firm leverage ratios and of persistent inter-industry differences, together with the highly significant inverse relation between firm leverage and earning volatility, tends to support the modern balancing theory of capital structure. In addition, Wald (1999) conducted a cross-country comparison and examined the factors correlated with capital structure. The result stated significant differences between firms. Specifically, differences appear in the correlation between long-term debt/ asset ratio and the firm’s riskiness, profitability, size and growth. The findings of this study suggest different choices in capital structure across countries and legal institutions. This supports the trade-off theory in that different corporations operating different business environment have different target debt ratio.
However, there are costs, and therefore delays, in adjusting to the optimum. Firms cannot immediately offset random events that bump them away from their capital structure targets, that is why always see random difference in actual debt ratios among firms which are having the same target debt ratio. Furthermore, due to the existence of market imperfections, firms can adjust only partially to their long term financial targets. According to Jalilvand and Harris (1984), large firms seem to adjust faster to the target level of long-term debt than do small firms.

Target debt ratio varies from country to country, industry to industry, and firm to firm. As far as firm specific factors are concerned, the nature of the asset base, the stability of the cash flow, and the quality of management, will all be relevant. Static the trade-off theory suggests that companies with safe, tangible assets and plenty of taxable income to shield ought to have high target ratios. Unprofitable companies with risky, intangible assets ought to rely primarily on equity financing (Brealy et al, 2006). However, empirical studies suggest that the trade-off model seems to have a relatively low \( R^2 \) (Myers, 1984). Actual debt ratio vary widely across similar firms and an odd fact about real-life capital structure is that the most profitable companies commonly borrow the least (Titman & Wessel, 1988; Rajan & Zingales, 1995; Faa & French, 2002; Wald, 1999), where the trade-off theory predicts exactly the reverse and fails to explain. Sarkar and Zapatero (2003) conduct an empirical study with a sample of firm in the S&P 500 Index. Their paper shows that mean reversion in the earnings process can reconcile the trade-off theory of capital structure with the empirical evidence. They re-formulate the trade-off theory with mean reverting earnings. Contrary to the traditional the trade-off theory but consistent with empirical regularities, their model predicts a negative relationship between earnings and target leverage ratio when earnings are mean reverting. It also demonstrates that the speed of earnings reversion plays an important role in the determination of capital structure as well as in the earning-leverage and volatility-leverage relationships.
An important purpose of the trade-off theory is to explain the fact that corporations usually are financed partly with debt and partly with equity. It states that there is an advantage to financing with debt, the tax benefits of debt and there is a cost of financing with debt, the costs of financial distress including bankruptcy costs of debt and non-bankruptcy costs. The marginal benefit of further increases in debt declines as debt increases, while the marginal cost increases, so that a firm that is optimizing its overall value will focus on this trade-off when choosing how much debt and equity to use for financing. This theory was considered important to this study to help explain how the insurance companies finance its operations using debt and equity.

2.2.3 Pecking order theory

Contrast to the static trade-off theory, there is another view of how financing decisions are made. This is Pecking Order Theory, which stems from Donaldson’s study (1961) of the financing practices of a sample of large corporation. He observes that “management strongly favoured internal generation as a source of new funds even to the exclusion of external funds except for occasional unavoidable ‘bulges’ in the need for funds” (pp 67). The key idea of pecking order theory is that managers raise new finance in a particular sequence (Myers, 1984):

Firms prefer internal finance.

They adapt their target dividend payout ratios to their investment opportunities, although dividends are sticky and target payout ratios are only gradually adjusted to shifts in the extent of valuable investment opportunities.

Sticky dividend policies, plus unpredictable fluctuations in profitability and investment opportunities, mean that internally generated cash flow may be more or less than investment outlays. If it is less, the firm first draws down its cash balance or marketable security portfolio.
If external finance is required, firms issue the safest security first. That is, they start with debt, then possibly hybrid securities such as convertible bonds, then perhaps equity as a last resort. In this story, there is no well-defined target debt-equity mix, because there are two kinds of equity, internal and external, one at the top of the pecking order and one at the bottom. Each firm’s observed debt ratio reflects its cumulative requirement for external finance.

Pecking order theory starts with asymmetric information, which indicates that managers know more about their companies’ prospects, risks and values than do outside investors. Asymmetric information can in practice explain the dominance of debt financing over equity issues. The most of external financing comes from debt, even in the case of highly information efficient market. However, none of this says that firms ought to heavily rely on debt financing. In fact, a firm with ample internally generated funds does not have to sell any kind of security (Brealey et al, 2006)

The pecking order is considered as a descriptive reasonable empirical model of corporate leverage. When practical figures are given, the heavy reliance on internal finance and debt is clear. For all non-financial corporations over the decade 1979-1982, internally generated cash covered, on average, 62% of capital expenditures, including investment in inventory and other current assets. Brealy and Myers’ studies (1984) provide evidence that the bulk of required external financing came from borrowing. Net new stock issues were never more than 6% of external financing. These statistical figures make pecking order theory to seem reasonable and at least provide a description of typical behaviour. Also, Shyam-Sunder and Myers (1999) find strong support for this model with a sample of 157 firms over the period 1971 to 1989. This is a persuasive and influential result. However, a few months after, their work was cited by Chirinko and Singha (2000), who argue that empirical evidence can evaluate neither the pecking order nor static trade-off models. Alternative tests are needed that can identify the determinants of capital structure and can discriminate among competing hypotheses.
One has to be concerned that the pecking order theory assumes that the managers act in the interest of existing shareholders, with the objective to maximize their value. However, this is not always the case, especially in the aspect of agency cost. Agency cost makes numerous scholars review their work and take new issues into consideration. Donaldson (1969) admits that the financing decisions of the firm he studies before were not directed towards maximizing shareholders wealth, and those scholars, such as Berle and Means (1932) and Berle (1954), attempting to explain those decisions have to restart by recognizing the “managerial view” of corporate finance. Myer and Majluf (1984) demonstrate the possible conflict between interests of managers and shareholders. Problems can particularly arise when a firm’s manager accumulates too much financial slack that they become immune to market discipline. Myers (1984) critically states that pecking order hypothesizes cannot explain everything. There are plenty of examples of firms issuing stock when they could issue debt. In 2003, Frank and Goyal constructed a study on financing behaviour of publicly traded American firms over the 1971 to 1988 period. According to their empirical results, firm’s internal financing, on average, is not sufficient to cover investment spending. As a result, most companies in their sample use significant external financing. In addition, it is widely found that debt financing does not dominate equity financing. Net equity issues track the financing deficit quite closely, while net debt does not do so. The current portion of long-term debt is not considered as part of the financing deficit. All these facts are in contrast to what is suggested by pecking order theory. This may be due the inclusion of small firms in their sample, which are hardly following the pecking order.

Furthermore, pecking order theory fails to explain the influence of taxes, financial distress, security issuance costs, agency costs, or the set of investment opportunities available to a firm upon that firm’s actual capital structure. It cannot explain why financing tactics are developed to avoid the consequences of managers’ superior information.
Pecking order theory is considered important to this study because it explains why the most profitable firms generally borrow less— not because they have low target debt ratios but because they do not need outside money. Less profitable firms issue debt because they do not have sufficient internal funds for their capital investment and because debt financing is preferred to equity financing under the pecking order theory. More importantly, this theory demonstrates the inverse relationship between profitability and financial leverage within the industry. Suppose firms generally invest to keep up with the growth of their industries. Then rates of investment will be similar within an industry. Given sticky dividend policy, the least profitable firms will have less internal funds and will end up with borrowing more. Profitability is one of the independent variables of this study.

2.2.4 Agency cost theory

Agency theory focused on the costs which are created due to conflicts of interest between shareholders, managers and debt holders. According to Jensen and Meckling (1976), capital structures are determined by agency costs, which includes the costs for both debt and equity issue. The costs related to equity issue may include:

The monitoring expenses of the principal (the equity holders)

The bonding expenses of the agent (the manager)

Reduced welfare for principal due to the divergence of agent’s decisions from those which maximize the welfare of the principal.

Besides, debt issue increases the owner-manager’s incentive to invest in high-risk projects that yield high returns to the owner-manager but increase the likelihood of failure that the debt holders have to share if it is realized. If debt holders anticipate this, higher premium will be required which in turns increase the costs of debt. Then, the agency costs of debt include the opportunity costs caused by the impact of debt on the
investment decisions of the firm; the monitoring and bond expenditures by both the bondholders and the owner-manager; and the costs associated with bankruptcy and reorganization. Since both equity and debt incur agency costs, the optimal debt-equity ratio involves a trade-off between the two types of cost.

Jensen and Meckling (1976) introduced two types of conflicts that are a major source of agency costs and these are: agency costs that arise due to the conflicts of interest between managers and shareholders and agency costs that arise as a result of the conflicts of interest between shareholders and debt holders. The subsequent discussions present shareholders-managers conflicts and shareholder-bondholder conflicts in an orderly manner.

Shareholders-managers conflicts: This kind of conflict stems from the separation of ownership and control. If managers do not own 100% of the firm, they can only capture a fraction of the gain earned from their value enhancement activities but they need to bear the entire costs of these activities. The shareholders-managers conflicts take several distinct forms:

According to Jensen and Meckling (1976) managers prefer to make use of less effort and have greater perquisite levels, such as luxuriant office and corporate jets, different from the shareholder’s interest of firm value maximization. In this case, increasing the managers’ equity holdings will help to align the interests of shareholders and managers. Or, keeping managers equity investment constant, increasing the debt level also helps to mitigate the loss occasioned by Conflicts between shareholders and managers. Since debt forces managers to pay out cash, reducing the free cash flow managers can waste on the perquisites. According to Masulis (1988) conflict may arise because managers may prefer short-term projects, which produce results early and enhance their reputation quickly, rather than more profitable long-term projects.
According to Harris and Raviv (1991) managers want to stay in their positions, so they wish to minimize the likelihood of employment termination. As this increases with changes in corporate control, management may resist takeovers, irrespective of their effect on shareholder value. On operating decisions, managers and shareholders may also have different preferences: Harris and Raviv (1991) observed that managers will typically wish to continue operating the firm even if liquidation is preferred by shareholders.

A special case of the conflicts between shareholders and managers is the overinvestment problem. Jensen (1986) argued that, instead of working under shareholders’ interests to maximize firm’s value; managers prefer to increase firm’s size to enjoy the benefit of control. In this case, managers have incentives to cause their firm to grow beyond the optimal size and accept negative net present value (NPV) projects. Jensen (1986) argued that the overinvestment problem can be motivated by more free cash flow and less growth opportunities. Issuing debt helps to mitigate agency problems that arise from managerial behavior under divergent interests between shareholders and managers. For example, the overinvestment problem can be mitigated by issuing debt since debt obligates firm to pay out cash and so it prevents managers from investing in negative NPV projects. Jensen (1986) refers to the non-discretionary nature of debt as the disciplining role of debt. As Hunsaker (1999) pointed out, an increase in debt also increases the risk of bankruptcy, therefore limits management’s consumption of perquisites. Besides, issue convertible debt also helps to discipline managers’ behavior because they give managers a chance to share in a firm’s profits in case of good performance and thus reduces the monitoring costs.

Shareholder-bondholder conflicts: The typical phenomenon of these conflicts is that the shareholders or their representatives make decisions transferring wealth from bondholders to shareholders. Certainly, the bondholders are aware of the situations in which this wealth expropriation may occur, therefore, will demand a higher return on their bonds or debts. Different fundamental sources of equity-holders and debt-holders
conflicts have been identified in the agency cost literature; the direct wealth-transfer from bondholders to shareholders (Smith & Warner, 1979). Shareholders can increase their wealth at the expense of bondholders’ interests by increasing the dividend payment; the issuance of debt with higher priority will expropriate wealth from current bondholders.

Asset-substitution is another source of the conflicts (Jensen & Meckling, 1976). When signing debt contracts, bondholders demand an interest rate according to the riskiness of the firm’s investment activities. While debt contracts give shareholders an incentive to invest in risky projects because if it succeeds the returns above the face value of debt will be owned by shareholders and in case of failure, the consequence is mainly born by bondholders because of shareholders’ limited liability. This excessive return from risky projects makes safe projects less attractive to shareholders since returns from the safe projects are sufficient to pay the bondholders. If bondholders can anticipate shareholders incentive of substituting safe projects by risky projects, they will ask for a higher risk premium. Also the anticipation of wealth expropriation will lead to the increase in risk premium. The increased costs of debt are then born by shareholders since they are residual claimants of the firm.

Underinvestment problem is another agency problem that results in shareholder-bondholder conflicts Myers (1977): Underinvestment problem mostly incurs in financial distress. The extension of debt decreases the shareholders incentives to invest in new projects (even the projects with high growth opportunities will be passed through) because the profits from these projects will be exhausted in debt repayment. One way to minimize these conflicts is that firms with high growth opportunities should have lower leverage. The conflicts can also be mitigated by adjusting the properties of the debt contracts, for example, the adjustment can be done by including covenants such as adding limits on the dividends payment or setting restrictions on the disposition of assets. Alternatively, debt can be secured by collateralization of tangible assets in the debt contracts.
The importance of this theory to the study is that it explains how the conflicts of interests between various stakeholders’: the shareholders, the managers and the bondholders’ results in agency cost and further explains how the trade-off between these agency costs fixes the optimal capital structure that balances the interests of all the stakeholders. Management control whose motivations and effects form the central subject of this theory was adopted as the moderating variable of this study.

2.3 Conceptual framework

According to Mugenda and Mugenda (1999), a conceptual framework is a hypothesized model identifying relationships between the dependent variable and independent variables. The current study has a causal relationship, Sekaran (2010) states that a causal relationship exists when both the independent and dependent variables are present and with each unit of increase or decrease in the independent variable there is a decrease or increase in the dependent variable. Profitability, growth opportunity, firm size and firm risk have been listed in literature as variables that influence the choice of capital structure in firms; management control has also been listed as having moderating influence on the choice of capital structure by firms. The study tested these factors to come out with findings as documented in this thesis.
Figure 2.4: Conceptual framework

**Independent variables**
- **Firm Profitability**
  - Profit After Tax
  - Rate of return on asset
  - Rate of return on capital employed
- **Firm Growth**
  - Increase in the value of equity
  - Increase in turnover
  - increase in investment income
- **Firm Size**
  - The log of assets
  - Market share
  - Value of equity
- **Firm Risk**
  - Standard deviation of operating Income
  - Sales volatility(standard deviation)
  - Solvency ratio

**Moderating variable**
- Capital structure
  - Total leverage/debt ratio
- Management control
  - Retention ratio
  - Dividend ratio
  - Cash ratio

**Dependent variable**
2.4 Empirical literature review

Empirical literature review is a directed search of published works, including periodicals and books, that discusses theory and presents empirical results that are relevant to the topic at hand (Zikmund et al., 2010). Literature review is a comprehensive survey of previous inquiries related to a research question. Although it can often be wide in scope, covering decades, perhaps even centuries of material, it should also be narrowly tailored, addressing only the scholarship that is directly related to the research question (Kaifeng & Miller, 2008). Through the use of a systematic approach to previous scholarship, literature review allows a researcher to place his or her research into an intellectual and historical context. In other words, literature review helps the author declare why their research matters (Kaifeng & Miller, 2008).

2.4.1 Capital structure

Song (2005) defines the term capital structure refers to the mix of different types of securities (long-term debt, common stock, preferred stock) issued by a company to finance its assets. He goes ahead to observe that a company is said to be unlevered as long as it has no debt, while a firm with debt in its capital structure is said to be leveraged. Song (2005) notes that there exist two major leverage terms: operational leverage and financial leverage. While operational leverage is related to a company’s fixed operating costs, financial leverage is related to fixed debt costs. Loosely speaking, operating leverage increases the business (or the operating) risk, while financial leverage increases the financial risk. Total leverage is then given by a firm’s use of both fixed operating costs and debt costs, implying that a firm’s total risk equals business risk plus financial risk. In this study of capital structure and its determinants, with leverage, we mean financial leverage, or its synonym gearing.

The firms’ capital structure, or financial leverage, constitutes this study’s dependent variable. Since hundreds of articles have been written about capital structure and its
determinants since the 1958 paper by MM, one must be aware of the fact that different measures of capital structure exist, and that each capital structure measure itself can be measured in different ways. Roughly, two major categories of leverage measures exist: those that are based on market value of equity, and those that are based on booked value of equity (Loof, 2003). For instance, Titman and Wessels (1988) discussed six measures of financial leverage in their study of capital structure choice: long-term, short-term, and convertible debt divided by market and book values of equity respectively. It is though rather common that due to data limitations, empirical studies must use only leverage measures in terms of book values rather than market values of equity, as is the case in the study by Titman and Wessels (1998). Indeed, for this study, market data is not available, implying that I have to measure leverage in terms of booked values only.

Researchers have raised serious problems of lacking market data in an empirical study of determinants of capital structure choice. Several scholars that have studied this field of capital structure choice have insisted that both book values and market values should be used simultaneously. The reason for this is that the information signaled in book value and market value is informative in different aspects (Loof, 2003). In contrast to this, Titman and Wessels (1988) refers to an earlier study by Bowman (1980), which demonstrated that the cross-sectional correlation between the book value and market value of debt is very large. Furthermore, Brealey and Myers (2003) argued that it should not matter much if only book values are used, since the market value includes the value of intangible assets generated by for instance research and development, staff education, advertising, and so on. These kinds of assets cannot be sold with easiness, and in fact, if the company goes down, the value of intangible assets may disappear altogether. Hence, misspecification due to using book value measures may be fairly small, or even totally unessential.

Irrespective of market or book value, there still exists the problem of choosing an appropriate leverage measure as the dependent variable. Indeed, in an important paper by Rajan and Zingales (1995), they argue that the choice of the most relevant measure
depends on the objective of the analysis. Though, they conclude “the effects of past financing decisions are probably best represented by the ratio of total debt over capital (defined as total debt plus equity)”. Table 1 below lists the different measures of leverage and each measure’s pros and cons, discussed in Rajan and Zingales (1995). In the discussion of different leverage measures, it is important consider the following statement by Harris and Raviv (1991, p. 331) in order to compare different empirical studies:

“The interpretation of the results must be tempered by an awareness of the difficulties involved in measuring both leverage and the explanatory variables of interest. In measuring leverage, one can include or exclude accounts payable, accounts receivable, cash, and other short-term debt. Some studies measure leverage as a ratio of book value of debt to book value of equity, others as book value of debt to market value of equity, still others as debt to market value of equity plus book value of debt. […] In addition to measurement problems, there are the usual problems with interpreting statistical results”.

<table>
<thead>
<tr>
<th>Leverage measure</th>
<th>Pros (+) and cons (-)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Total liabilities / Total assets</td>
<td>+ The broadest definition of leverage; proxy for what is left for shareholders in case of liquidation. - Not a good indication of whether the firm is at risk of default in the near future. May overstate leverage since total liabilities includes items like accounts payable, untaxed reserves etc.</td>
</tr>
<tr>
<td>2 Total debt / Total assets</td>
<td>+ Does not include liabilities like untaxed reserves or accounts payable (for transaction purposes); more appropriate measure of leverage than (1) above. - Affected by level of trade credit5 (i.e. unpaid bills; makes up bulk of accounts payable).</td>
</tr>
<tr>
<td>3 Total debt / Net assets</td>
<td>+ Not influenced by trade credit. (Net assets = total assets – accounts payable – other liabilities) - Still affected by factors that have nothing to do with financing, e.g. assets held against pension liabilities</td>
</tr>
<tr>
<td>4 Total debt / Capital</td>
<td>+ Probably the best representation of past financing decisions (capital = total debt + capital). - Measure of the risk that equity holders will not be able to make fixed payments and will have to give up control</td>
</tr>
<tr>
<td>5 EBIT / Interest expense</td>
<td>+ Appropriate measure if investments equal in magnitude to depreciation needed to keep the firm a going concern. - Based in assumption that short-term liabilities like accounts payable and short-term debt will be rolled over. Very sensitive to income fluctuations</td>
</tr>
<tr>
<td>6 EBITDA / Interest expense</td>
<td>+ Measure of the risk that equity holders will not be able to make fixed payments and will have to give up control. Appropriate if no such investments as in (5) are needed. - Same as for (5).</td>
</tr>
</tbody>
</table>

Note: EBIT = Earnings Before Interest and Taxes. EBITDA = EBIT + Depreciation.

Here in Kenya several studies have been in the field of capital structure, these studies have used different measures of financial leverage but most of them have used book values only. For instance Musili (2005) in his study of capital structure choice used total debt ratio computed from book values as the measure of financial leverage. Kinyua (2014) in his study, The relationship between capital structure and profitability of listed non-financial firms in Kenya, used long-term debt to equity and short-term debt to equity as measures of leverage. The study adopted a descriptive research design. The target population of this study comprised of all the 40 listed non-financial firms. A census was carried out due to the small number of non-financial firms in Kenya. The study used secondary data extracted from annual financial reports. Descriptive data analysis techniques and regression were used to analyse the data. The long-term liability to equity indicated an inverse relationship to profitability at -5.70%, with an adjusted coefficient of determination of 97.80%. The study also found that the firm’s profitability (measured by return on equity) was positively correlated with the short-term debt at 18.10% and long-term debt (LP/PL) at 56.20%.

Onsomu (2014) in his study, the relationship between capital structure and agency costs of firms listed at the Nairobi Security Exchange. the study used efficiency cost ratio as a proxy for agency costs, Long term debt to equity as a proxy for capital structure and two other variables that affects agency costs; this are information asymmetry as measured by market value/Book value per share and ownership concentration measured by corporate ownership/Equity. The historical data for these were obtained from the Nairobi Securities Exchange and the Capital Markets Authority data banks. The correlation research design was used in the study. The study covered a target population of all companies quoted at Nairobi Securities Exchange between 1st January 2009 and 30th December 2013. The study used secondary data from Nairobi Security Exchange. The key findings revealed that there was a positive correlation between capital structure and agency costs. The main conclusion from our analysis is that indeed capital structure determines agency costs. Given the evidence from this research, it’s evident that capital
structure positively affects agency costs of listed firms at the Nairobi Securities Exchange.

This study having carefully analyzed past empirical works, identified three measures of financial leverage for the purpose of the study short-term debt ratio, long-term debt ratio and total debt ratio the data on financial leverage measures and all the independent variables were based on book values because majority of the insurance firms are not listed in Nairobi Security Exchange and therefore it was very difficult to get market values

2.4.2 The influence of firm profitability on capital structure

Since the primary objective of a business entity is to make profits, profitability has been the most important construct studied over the past many years of finance research. Typically, profitability is measured in terms of return on the capital invested in the business or return on the revenues generated during a given period, Abor (2005). Several measures of profitability have been tested in past studies and found to have a significant influence on capital structure.

A study conducted by Capon et al. (1990) reviewed 320 empirical studies (165 in economics and industrial organization literature, and 155 in the management literature) published between 1921 and 2007 that used the meta-analytical technique to summarize the statistical results in the literature on industry, firm, and business performance. This study revealed that the types of measures used to capture return on investment included return on equity, return on capital, return on assets, return on sales, and earnings before interest and taxes (EBIT). These returns represent the profitability measures to assess the firm’s profitability. Therefore, this research operationalized three constructs as measures of firm profitability rate of return on assets (ROA), rate of return on capital (ROCE) and earnings before interest and taxes (EBIT).
The pecking order theory, based on works by Myers and Majluf (1984) argued that firms follow a pecking-order in the choice of financing their activities. Roughly, this theory states that firms prefer internal funds rather than external funds. If external finance is required, the first choice is to issue debt, then possibly with hybrid securities such as convertible bonds, then eventually equity as a last resort (Brealey & Myers, 1991). In the pecking order model, higher earnings should result in less book leverage. Firms prefer raising capital, first from retained earnings, second from debt, and third from issuing new equity. This behaviour is due to the costs associated with new equity issues in the presence of information asymmetries. Debt typically grows when investment exceeds retained earnings and fall when investment is less than retained earnings. Accordingly, the pecking order model predicts a negative relationship between book leverage and profitability. The pecking order theory predicts that firms with a lot of profits and few investments have little debt. Since the market value increases with profitability, the negative relationship between book leverage and profitability also holds for market leverage. This relationship is one of the most systematic findings in the empirical literature.

Mendell et al. (2006) investigates financing practices across firms in the forest products industry by studying the relationship between debt and taxes hypothesized in finance theory. In testing the theoretical relationship between profitability and capital structure for 20 publicly traded forest industry firms for the years 1994-2003, using panel data methodology, the study established a negative relationship between profitability and debt, thus supporting the position held by the proponents of pecking order theory.

Chen et al. (2009) studied the insurance companies of Taiwan, to know the relationship among profitability, operational risk, and capital structure. Factor analysis and path analysis methodologies were used to examine correlation among the capital structure, operational risk, and profitability. A sample of listed insurance companies in America was also taken. The result of the research was that firms’ values are not related with capital structure, a close relationship was shown among operational risk, profitability
and capital structure. Capital structure is negatively related with profitability if equity ratio increases or reserve-to-liability ratio decreases which result in higher profits.

Eriotis et al. (2000) investigated the relationship between debt-equity ratio and firm's profitability. In the study, the level of the firm in investment and its degree of market power was observed. The facts and figures of various industries of 1995-96 were taken into study. It was observed through the study that the financial structure plays a key role in a firm's profitability. A firm’s profitability depends on debt-to-equity ratio. The debt-to-equity ratio varies from firm to firm. It is the selection of debt- to- equity ratio which makes successful financial strategy and for this purpose, some firms choose a high rate equity ratio and the others depend on lower rate equity ratio. It was observed from the study of various industries that debt-to-equity ratio has a negative relationship with a firm's profitability. The study further revealed that the firms that finance their investment on their equity entertain much profit in comparison to the firms that finance their activities through borrowed capital.

Ebaid (2009) studied the relationship between the different debt-equity combinations with company's performance. Multiple regression technique was used to find out the impact of debt policy on a company's performance. Findings of the study reveal that both short-term debt and total debt are negatively related by return on assets. Capital structure including total debt (TTD) is not significantly related with Return on Equity and Gross profit margin (ROE and ROA). Findings of the study reveal that ROA and firm performance are negatively related.

Serrasqueiro and Marcia (2009) conducted a study to analyze the company capital structure. In the study, the result of Portuguese companies is examined which shows a negative and statistically significant relationship between the profitability of listed Portuguese companies and their level of debt. The results of the study further show that there is great influence of tangibility of assets, size and profitability on the structure of Portuguese companies. Findings of the study suggest that most firms rely on internal
source of financing or bank debt to fulfil their financing needs in less developed capital markets.

However, in the trade-off theory framework, an opposite conclusion is expected. When firms are profitable, they should prefer debt to benefit from the tax shield. In addition, if past profitability is a good proxy for future profitability, profitable firms can borrow more as the likelihood of paying back the loans is greater. From the trade-off theory point of view, more profitable firms are exposed to lower risks of bankruptcy and have greater incentive to employ debt to exploit interest tax shields. According to the trade-off theory, agency costs, taxes, and bankruptcy costs push more profitable firms toward higher book leverage. First, expected bankruptcy costs decline when profitability increases. Second, the deductibility of corporate interest payments induces more profitable firms to finance with debt. Finally, in the agency models of Jensen and Meckling (1976), Easterbrook (1984), and Jensen (1986), higher leverage helps to control agency problems by forcing managers to pay out more of the firm’s excess cash.

The trade-off theory predicts that leverage increases with profitability. Since the market value also increases with profitability, this positive relation does not necessarily apply for market leverage. Several scholars have found positive relationship between profitability and capital structure.

Gill *et al.* (2011) seeks to extend Abor’s (2005) findings regarding the effect of capital structure on profitability by examining the effect of capital structure on profitability of the American service and manufacturing firms. A sample of 272 American firms listed on New York Stock Exchange for a period of 3 years from 2005 – 2007 was selected. The correlations and regression analyses were used to estimate the functions relating to profitability (measured by return on equity) with measures of capital structure. Empirical results show a positive relationship between short-term debt to total assets and profitability and between total debt to total assets and profitability in the service industry. The findings of this paper show also a positive relationship between short-term
debt to total assets and profitability, long-term debt to total assets and profitability, and between total debt to total assets and profitability in the manufacturing industry.

Abor (2005) investigated the relationship between the capital structure and profitability of listed firms on Ghana Stock Exchange (GSE). Data was taken for this study between 1998 and 2002. Twenty-five listed firms qualified for this study. Regression analysis methodology was used in the assessment of functions involving the return on equity (ROE) with measure of capital structure. The result of the research is that capital structure is related to the marketing, because different firms issue different securities in many different combinations, which maximize the market value. Huge return and profitable firms always use more short-term debt. Short term debt is an important part of total debt, and usually firms use 85% of short-term loan against long-term debt. Long-term debt and return on equity have negative relationship; total debt and return on equity are positively related.

Madan (2007) investigated the relationship between the capital structure and the overall performance of Indian firms and also assessed the capital structure. Study further assessed how different debt-equity combinations play an important part in a firm's overall performance and expansion. The findings revealed that both lower and higher gearing ratios are not enviable for the firms. Companies which operate at break-even point also use debt in capital structure to insure the profits. Indian firms use 30/70 or 40/60 percent of debt and equity combination, other need is fulfilled through the reserves, capital and surplus.

Nguyen, (2014) used quantitative research design, which is a combination of deductive approach, quantitative method and experimental research in his study of Finish technology firms. The data was collected from both primary and secondary sources. The primary source is mainly the financial reports of 17 firms during the period of 2008 - 2012. Meanwhile, the secondary source is obtained from books and journals. The
finding statistically confirms the positive relationship between the firm’s profitability and its capital structure.

Most of the empirical studies done on the relationship between profitability and capital structure tend to follow either the trade-off or pecking order propositions. However, the results appear inconclusive and diverse in different environments and industries.

2.4.3 The influence of firm growth on capital structure

Firm growth will very strongly influence capital structure decisions of the managers as they struggle to identify cheaper sources of funds that will help them finance their expanding operations Abor (2005). The most cost effective source of finance will be retained earnings but in most cases, this source will not be adequate and therefore the firm usually results to external sources. The common indicators for growth according to many researchers include increase in the size of market share in the industry, increase in the size of physical assets and increase in sales. Titman and Wessels (1988) used market-to-book ratio as a proxy for growth opportunities. Odinga (2003) used percentage change in total sales to measure growth. However, Drobetz and Fix (2003) measured growth as a percentage increase in total assets. Kuria (2010), Turere (2012) and Muema (2013) used the same measure.

According to the pecking order theory hypothesis, a firm will use first internally generated funds which may not be sufficient for a growing firm. The next option for the growing firms is to use debt financing which implies that a growing firm will have a high leverage (Drobetz & Fix, 2003). Applying pecking order arguments, growing firms place a greater demand on the internally generated funds of the firm. Consequently, firms with relatively high growth will tend to issue less security subject to information asymmetries, i.e. short-term debt. This should lead to firms with relatively higher growth having more leverage.
The same relationship is supported by the trade-off theory, too. According to this theory, growth causes firms to shift financing from new equity to debt, as they need more funds to reduce the agency problem. Following the trade-off theory, for companies with growth opportunities, the use of debt is limited as in the case of bankruptcy, the value of growth opportunities will be close to zero. Growth opportunities are a particular case of intangible assets (Myers, 1984; Williamson, 1988; Harris & Raviv, 1990).

Theoretically, growth opportunity negatively relates with the firm’s capital structure. Particularly, growth rate indicates a high equity financing and a low debt financing. On the one hand, firms with low, negative growth rate, tend to employ debt to limit agency costs of managerial discretion and discipline the firm’s managerial attitudes (Jensen, 1986). On the other hand, using leverage means increasing the debt’s agency cost. This cost causes two issues. Firstly, it increases the overall cost of capital, and secondly, it transfers the wealth from stockholders to debtholders since the stockholders bear this agency cost. Therefore, high-growth firms may not issue debt to pursue their investments, particularly the firms with high leverage (Myer, 1977).

This theoretical assumption is supported by many empirical works (Booth et al., 2001; Kim & Sorensen, 1986; Rajan & Zingales 1995; Wald, 1999). However, there are several dissents. Notably, Kester proves the opposite direction (Kester, 1986). Different conclusions partly may result from different proxies employed to examine the growth rate. Growth opportunity’s definition can be as a five-year average of sales growth (Wald, 1999), market-to-book ration of equity (Booth et al., 2001).

Nguyen (2014) in his study aimed to examine the validity of five chosen determinants selected by the author, namely, growth rate, firm’s size, profitability, liquidity and interest coverage capability, within the scope of Finnish technology firms. The firms which are listed in the technology sector index in OMX Helsinki Stock Exchange are selected as the object of the research. The study employed the quantitative research design, which is a combination of deductive approach, quantitative method and
experimental research. The data was collected from both primary and secondary sources. The primary source is mainly the financial reports of 17 firms during the period of 2008 - 2012. Meanwhile, the secondary source is obtained from books and journals. The finding statistically confirmed a positively insignificant relationship between growth rate and capital structure.

Fareed (2014) investigated the effect of firm specific factors on capital structure decision (leverage) for a sample of 19 firms of power and energy sector of Pakistan. The secondary data was extracted from the “Balance sheet analysis” for the period of 2001-2012 of the 19 firms which are listed on Karachi stock exchange. Generalized least square method, correlation analysis are employed on panel data and results revealed that firm growth was positively related with leverage and significant.

Rafiq et al. (2008) conducted research on determinants of capital structure in chemical sector of Pakistan. They used panel data for the period of 12 years from 1993 to 2004 and found that growth is a significant factor of capital structure in chemical sector of Pakistan. Ilyas (2007) using panel data methodology conducted research in Pakistan on capital structure of listed firms and established that growth had a negative relationship with leverage. He also found positive relationship between non-debt tax shield and leverage but capital structure have negative relationship with leverage.

Jorgensen and Terra (2002) investigated the determinants of capital structure in seven Latin American Countries. In their analysis, the effect of tangibility, size, profitability, growth opportunities, tax, and business risk were analyzed in each country. In addition, the effects of macroeconomic (GDP growth, inflation, real interest rate, and real stock returns) and institutional factors were investigated using pooled regression. In relation to growth opportunities, empirical evidence from their research offered more support for a positive relationship when book value leverages were used, but the sign of the relationship turned negative when market value leverage was used.
Gurcharan (2010) analyzed the determinants of capital structure in four selected ASIAN 4 countries, namely Malaysia, Indonesia, Philippine, and Thailand. The effect of non-debt tax shield, profitability, size and growth opportunities on capital structure decisions were examined in that work in addition to country-specific factors such as the stock market size, development of banking sector, GDP growth rate and inflation. The result for firm specific factors revealed that profitability and growth opportunities were negatively correlated with the market debt to total assets ratio in all countries, but was statistically significant for three of the countries. Non-debt tax shield negatively affected the stated leverage ratio, but was statistically significant in only one country.

Ngugi (2008) studied capital financing behaviour of listed firms on the Nairobi Stock Exchange (NSE). The study used a sample of 22 firms for the period 1990 to 1999 and using modified static trade-off and pecking order models, the study found that the main determinants of capital financing behaviour of listed firms in Kenya are information asymmetry, non-debt tax shields and local capital market infrastructure. However, a similar study conducted by Nyang’oro (2003) based on a sample of 20 listed non-financial firms for the period 1993-2001 produced contradicting results. Growth opportunities were found to be significant in explaining the capital structure of the firms investigated.

Abor and Biekpe (2005) conducted a study on the determinants of capital structure of listed firms, large unlisted firms and small and medium enterprises (SME) in Ghana using panel data analysis for the period 1998-2003. They found that listed and large unlisted firms had higher debt ratios as compared to SMEs. The results further showed that total debt constituted more than 50% of the capital structure of the sampled firms. The study also found that growth was insignificant in influencing decisions on capital structure in Ghana.

De jong et al. (2008) analyzed the direct and indirect impacts of firm-specific and macroeconomic factors on capital structure for a number of firms from 42 developed and
developing countries. They found that tangibility and firm’s size in half of the countries had a positive effect on long-term debt ratios at market value, whereas growth opportunities and profitability had a negative effect.

Most of the empirical studies done on the relationship between firm growth and capital structure tend to follow either the trade-off or pecking order propositions. However, the empirical findings of some studies appear to contradict the theoretical stand points perhaps because of use of diverse proxies of growth.

2.4.4 The influence of firm size on capital structure

To measure size, sales are considered a sound measure (Muema, 2013). So the natural logarithm of sales is taken to measure the size as used in some previous studies. Myers and Majluf (1984), Turere (2012) and Muema (2013) used the same measure. For the purpose of this research, the size of the firm will be measured by taking the natural logarithm of the assets as this measure ‘smoothens’ the variation in the figure over the periods of time.

According to the trade-off theory, first, large firms don’t consider the direct bankruptcy costs as an active variable in deciding the level of leverage as these costs are fixed by constitution and constitute a smaller proportion of the total firm’s value. And also, larger firms being more diversified have lesser chances of bankruptcy (Titman & Wessels, 1988). Following this, one may expect a positive relationship between size and leverage of a firm. The trade-off theory predicts an inverse relationship between size and the probability of bankruptcy. Hence, there is a positive relationship between size and leverage. Second, contrary to first view, Rajan and Zingales (1995) argued that there was less asymmetrical information about the larger firms. This reduced the chances of undervaluation of the new equity issue and thus encouraged the large firms to use equity financing. This means that there is negative relationship between size and leverage of a firm. Following Rajan and Zingales (1995), we expect a negative relationship between
size and leverage of the firm. Therefore, the pecking order theory of the capital structure predicts a negative relationship between leverage and size, as larger firms exhibit increasing preference for equity relative to debt. Meanwhile, previous research also has different results with some researchers following trade-off and others supporting pecking order predictions.

Ramalho and Silva (2009), using regression analysis, established the empirical evidence based on large firms and found that conditional on having debt, firm size is negatively related to the proportion of long-term debt in capital structure of Portuguese SMEs. They divided the sample into micro, small, medium and large firms and found that the relationship between leverage and firm size is statistically significant and negative for small and medium non-zero leverage firms.

There are several theoretical reasons why firm size is related to capital structure, including economies of scale in lowering information asymmetry, scale in transaction costs and market access. Smaller firms are more informationally opaque than larger firms and, consequently, the costs to resolve information asymmetry with lenders are higher for small firms than for large enterprises. Financing decisions might also be affected by the transaction costs associated with a specific type of financing. As Titman and Wessels (1988) point out, transaction costs are a function of scale. Hence, relatively high transaction costs may effectively make some financing options unavailable for smaller firms. For example, public debt issuance is generally not an alternative to obtain external financing for smaller firms, as scale is required for such debt issuance. These theoretical reasons suggest that smaller firms should have lower debt levels.

Strebalav and Kurshev (2006) argued that the results of a positive relationship between leverage and firm size may be contaminated by the presence of zero-leverage firms, which are also the smallest in terms of size. They find that, controlling for unlevered firms, the relationship between firm size and leverage becomes slightly but significantly negative. Strebalav and Kurshev (2006) provided a theoretical clarification for the
opposite effects of firm size on leverage. Due to fixed costs of external financing, smaller firms choose to refinance less frequently than larger firms because they are more affected by these fixed costs in relative terms. Hence, small firms choose to operate at a higher leverage level at a refinancing moment to compensate for less frequent rebalancing. This argument explains why smaller firms, if they have some debt, are more levered than larger firms. In addition, as the time period between restructurings is longer for small firms, on average, they have lower leverage ratios.

Serrasqueiro and Marcia (2009) using panel data methodology, conducted a study to analyze the company capital structure. In the study the result of Portuguese companies is examined which shows a negative and statistically significant relationship between the firm size of listed Portuguese companies and their level of debt. The results of the study further show that there is great influence of tangibility of assets and profitability on the structure of Portuguese companies. Findings of the study suggest that most firms rely on internal source of financing or bank debt to fulfil their financing needs in less developed capital markets.

Gleason et al. (2000), using panel data from retailers in 14 European countries, which are grouped into 4 cultural clusters, it is shown that capital structures for retailers vary by cultural clusters. This result holds in the presence of control variables. Using logarithms of total assets as an absolute measure of firm size, it is shown that capital structure influences firm size, although not exclusively. A negative relationship between capital structure and firm size suggests that large firms tend to borrow less. This is inconsistent with the position held by the trade-off theory that suggests high leverage for large firms.

Hung et al. (2002) investigated the inter-relationship between firm specific characteristics and capital structure. The study comprised all financial firms in Hong Kong. Regression analysis was applied on panel data to get the results. The results showed that capital structure is positively related with log of assets and have negative
relationship with profitability. This particular observation was found to be consistent with the trade-off theory and pecking order theory.

Raheman et al. (2007) found a significant capital structure relationship with firm size for non-financial firms listed on Islamabad Stock Exchange. The study population included all the listed non-financial firms, the study used multiple regression analysis and correlation analysis to measure the relationship between firm size and capital structure. The results obtained indicated a positive relationship between firm size and capital structure. These results are consistent with the proposition of the trade-off theory.

Strebulaev (2005) studied Russian firms using panel data methodology and found out that Firm size is strongly positively related to capital structure. A number of intuitive explanations can be put forward to account for this stylized fact, but none have been considered theoretically. The analysis of dynamic economy demonstrates that in cross-section, the relationship between leverage and size is positive and thus fixed costs of financing contribute to the explanation of the stylized size-leverage relationship. However, the relationship changes the sign when we control for the presence of unlevered firms.

Fareed (2014) study investigated the effect of firm specific factors on capital structure decision (leverage) for a sample of 19 firms of power and energy sector of Pakistan. The secondary data is extracted from the “Balance sheet analysis” for the period of 2001-2012 of the 19 firms which are listed on the Karachi stock exchange. Generalized least square method, correlation analysis were employed on panel data and results revealed that Firm size and firm growth are both positively related with leverage and also significant. Our results also show that large firms do long term financing through debt as compared to small firms of power and energy sector.

Anila (2013) attempted to explore the impact of firm specific factors on capital structure decision for a sample of 65 non-listed firms, which operate in Albania over the period
2008-2011. In this study three capital structure measures were used: short–term debt to total assets (STDA), long–term debt to total assets (LTDA) and total debt to total assets (TDTA) as dependent variables and four dependent variables: tangibility(TANG), liquidity (LIQ), profitability(ROA=return on assets) and size (SIZE). The investigation used panel data procedure and the data was taken from balance sheets and included only accounting measures on the firm’s leverage. This study found that size (natural logarithm of total assets) has a significant impact on leverage. Also empirical evidence revealed a significant positive relation of SIZE to leverage. Results revealed that long term debt to total assets and total debt to total assets ratios are significantly different across Albanian industries.

2.4.5 The influence of firm risk on capital structure

Based on the basic concepts of the capital structure, firm managers make decisions on what type of funds and at what levels in terms of magnitude will lead to the overall minimization of the costs associated with procuring these funds. Therefore, the demand and supply of funds affect the capital structure, but at the same time, the risk associated with the firm’s cash flows affects the capital structure. In other words, the more the volatility of the cash flows of the firm, the more will be the impact of this risk on the firm’s ability to raise debt and/or equity. Titman and Wessels (1988) pointed out that "a firm’s target debt level is a decreasing function of the volatility of earnings (p.6)". Other authors who confirmed this relationship include (Bradley, Jarrell, & Kim, 1984). Moreover, the costs associated with the funds will be affected as a result of the volatility of cash flows. Therefore, it can be stated that the capital structure decisions are based on the impact of the external environment on the firm and the strategies the firms use to insure that the value of the firm is maximized. For the purpose of this study, standard deviation of operating income, standard deviation of sales and solvency ratio were adopted as proxies of firm risk.
According to pecking order theory and the trade-off theory, earnings volatility is considered to be either the inherent business risk in the operations of a firm or a result of inefficient management practices. In either case, earnings volatility is proxy for the probability of financial distress and the firm will have to pay risk premium to outside fund providers. To reduce the cost of capital, a firm will first use internally generated funds and then outsider funds. This suggests that earnings volatility is negatively related with leverage. This is the combined prediction of the trade-off theory and pecking order theory. According to pecking order theory and the trade-off theory, income variability is a measure of business risk. Since higher variability in earnings indicates that the probability of bankruptcy increases, we can expect that firms with higher income variability have lower leverage. Therefore, the trade-off model allows the same prediction, but the reasoning is slightly different. More volatile cash flows increase the probability of default, implying a negative relationship between leverage and volatility of cash flows. As expected, the relationship between leverage and volatility is negative. This supports both the trade-off theory (more volatile cash flows increase the probability of default) and the pecking order theory (issuing equity is more costly for firms with volatile cash flows).

Halov (2009) using panel data methodology, established that the volatility of risk is an important factor in explaining capital structure choices of firms. This effect is over and above the traditional determinants of capital structure such as the current level of risk, size, market-to-book ratio, tangibility of assets and profitability. The study shows that both (1) the fraction of debt in total new external financing raised by the firm, and (2) the long term debt as a fraction of the assets of the firm, are decreasing in the volatility of risk of the firm. Moreover, this negative relationship is significantly stronger for firms that do not have a credit rating. These results are consistent with the theoretical reasons that we provide to explain the negative relationship between leverage and volatility of earnings.
Jacques and Nigro (1997) studied the relationship between changes in capital and changes in risk taking in the US subsequent to the adoption of Basel Committee’s minimum capital regulation in 1991. They found increases in book capital ratios and decreases in risk exposure consistent with the findings of Shrieves and Dahl, Bichsel and Blum (2002) conducted a similar analysis of non-US banks. Their study of Swiss banks provides strong evidence in favor of a positive relationship during the period of 1990-2002.

Raiyani (2011) in his study of the impact of financial risk on capital structure decisions in selected Indian industries, used definition of capital structure in scope of book value to market value and measures were assumed for financial performance. The research applied panel data of 59 companies listed on Stock Exchange of India in a 10-year time horizon (1997-2007). The data was collected from secondary sources. Industries of the study were selected based on ten years’ data availability and if the total assets value of the company were more than Rs. 100 crores, the statistical tools used for analyzing them vary from general descriptive analysis such as Mean, Standard Deviation, Coefficient of Variation, Compound Growth Rate to Linear Growth Rate. Also, parametric t-test for ascertaining the level of significance of both compound and linear growth rates and one way analysis of variance, simply called F-test across selected industry sectors were also used. Results of the study demonstrated that finance risk variables, particularly risk followed by volatility in ROE have significant effect on determining the additional variation in use of debt financing in business through long-term sources among firms.

Kumars (2009) studied the impact of risk on capital structure of listed firms in Iran stock exchange. The study was an attempt to establish whether the firm risk impacts capital structure decisions. The research used 2 definitions, solvency ratio and operating income standard deviation, as measures of firm risk. The study applied panel data of 117 corporates in Tehran Stock Exchange (TSE) in a 5-year time horizon (2002-2007). Results of our study demonstrated that firm risk influences firm’s capital
structure. The results indicated a negative relationship between firm risk and capital structure.

Floquet and Biekpe (2009) study was an attempt to identify the nature of the relationship between capital structure and risk-taking in emerging market financial firms. A three-stage least squares (3SLS) method of estimation was applied to a modified version of the capital model developed by Shrieves and Dahl and a modified version of Kwan and Eisenbeis’ efficiency model. The relationship between changes in capital structure and risk and absolute levels of capital and risk are examined for 2940 financial firms across 44 emerging market countries for the period of 1995 to 2003. Results show that no significant relationship exists between changes in capital and changes in risk, contrary to the positive relationship presented by developed market empirical evidence. A positive relationship between the absolute levels of capital and risk is, however, identified amongst emerging market financial firms. The evidence suggests that emerging market financial firms do not align capital and risk positively in the short term, but are able to make this alignment in the longer term.

Moral hazard bank behavior is indicative of a negative relationship between capital ratio and risk, as high risk-taking is combined with high leverage. Demirgüç-Kunt and Detragiache (2000) also found that moral hazard to be prevalent in countries where banking regulation and supervision are substandard, indicating the possible presence of these conditions in emerging markets. A study conducted by Godlewski (2005) is one of the few that address the relationship between the changes in capital and risk in an emerging market context. Although Godlewski identifies weak evidence of a negative relationship between the changes under specific conditions, the results suggest that no significant relationship exists amongst emerging market financial firms. A limited investigation into the relationship between the absolute levels of capital and risk was carried out by Altunbas et al. (2001) that examined the influence of bank efficiency on the capital and risk system. They provided evidence of a strong positive relationship amongst European financial firms.
Calem and Rob (1996) developed a dynamic model of a banking firm subject to moral hazard, using US bank empirical data for the years 1984 to 1993 and found a ‘U-shaped’ relationship between changes in capital and changes in risk-taking. This is explained by the fact that well-capitalized financial firms invest in high-risk assets; less well-capitalized financial firms pursue a more conservative risk approach, while poorly capitalized financial firms attempt to maximize risk-taking. Iwatsubo (2003) supports this view with evidence of a significant non-linear relationship between capital ratio and risk for Japanese financial firms.

Research into the relationship between the capital structure and risk-taking of financial firms provides conflicting and inconclusive results. The literature indicates that the relationship between changes in capital structure and risk is influenced by the time period under investigation and the environmental conditions to which financial firms are exposed. The results from investigations into the relationship between the absolute levels of capital and risk have consistently produced a significant positive relationship. However, these studies are limited in number and geographic location.

2.4.6 The moderating effect of firm management control on capital structure

Researchers in corporate finance have focused considerable attention on the ways in which managerial self-interest affects managerial decisions. Jensen and Meckling (1976) pointed out that managers sometimes set debt below the level which is optimal for unaffiliated outside shareholders. This deviation from the optimal capital structure is primarily due to two important types of non-diversifiable risk in a firm. First, as discussed by Fama (1980), managers have substantial human capital investment in their firms. Second, managers typically have a large equity investment in their firms. Models of managers’ (controlling shareholders’) behavior frequently account for their exposure to idiosyncratic firm risk.
Carvey and Hanka (1999) in the study ‘capital structure and corporate control: The effect of antitakeover statute on firm leverage’ it was found that firms protected by "second generation" state antitakeover laws substantially reduce their use of debt, and that unprotected firms do the reverse. This result supports recent models in which the threat of hostile takeover motivates managers to take on debt they would otherwise avoid. An implication is that legal barriers to takeovers may increase corporate slack.

Hamid (1992) argued that the agency theory recognizes that the interests of managers and shareholders may conflict and that, left on their own, managers may make major financial policy decisions, such as the choice of a capital structure, that are suboptimal from the shareholders' standpoint. The theory also suggests, however, that compensation contracts, managerial equity investment, and monitoring by the board of directors and major shareholders can reduce conflicts of interest between managers and shareholders. This research investigated the relationship between the firm's capital structure and 1) executive incentive plans, 2) managerial equity investment, and 3) monitoring by the board of directors and major shareholders. This paper found a positive relationship between the firm's leverage ratio and 1) percentage of executives' total compensation in incentive plans, 2) percentage of equity owned by managers, 3) percentage of investment bankers on the board of directors, and 4) percentage of equity owned by large individual investors. These findings are consistent with the predictions of agency theory, suggesting, in turn, that capital structure models that ignore agency costs are incomplete.

Ellul (2010) investigated the use of leverage as one channel through which control-motivated block-holders can defend their corporate control. Such block-holders face a trade-off between raising external finance and losing their control over the firm. Debt has an advantage over equity in solving this trade-off because it does not dilute the block holder’s voting power. The study used a sample of 5,975 firms from 38 countries over the period 1992-2006 and identified the presence of family block holders and long-term institutional investors which are the type of owners that should value corporate control.
most. It was found that firms that are owned by these block holders have high leverage, after controlling for other capital structure determinants. This result cannot be explained by the use of debt to discipline firms owned by block-holders that may have higher managerial agency conflicts, overinvestment problems or empire-building concerns. Most importantly, it was found that leverage in these firms is used strategically and not indiscriminately given the higher risk of bankruptcy it poses: debt is mostly used when control is contestable and less when block-holders already have control enhancing mechanisms in place. The evidence is reinforced when analyzing the behavior of leverage around hostile takeovers and withdrawn takeover bids.

Anecdotal evidence has shown the importance of control motivations to block-holders. An example is a survey of 891 Italian firms sampled from the Mediocredito database. A major problem facing Italian firms is the lack of adequate financing. Bagella et al. (2001) reported that to the question on their availability for any equity dilution, more than 80% of CEOs answered that they are ready for “No Equity Dilution”. When they were asked whether they see any advantage from higher financial stability resulting from external finance, almost 52% saw no advantages.

A recent example of such control motivations was provided by Bertelsmann, the German media company, a family-owned company since 1835. In 2001 the Bertelsmann family sold 25.1% of its company to Groupe Bruxelles Lambert (GBL) in exchange for 29.9% share (and complete control) of RTL, a media company. The deal gave the right to GBL to list its stake in Bertelsmann publicly after five years. In 2006, to avoid such a public listing, the Bertelsmann family bought back the stake of GBL for some $5.75 billion through an issue of debt, and “for this luxury, Bertelsmann has more than doubled its existing debt…the media company is probably overpaying by around Euro 500 million. However, it avoids the scrutiny of stock analysts and the activism of hedge funds” (The Economist, 2006).
Institutional block-holding around the world and in the U.S, Stulz (2005) argues that controlling shareholders may pursue their own interests and their objectives are likely to have important repercussions on firms they invest in. Leverage is one such important firm decision that they can influence. The only two directly related empirical papers are those of Berger, Ofek and Yermack (1997) who looked at entrenched managers, and Litov and John (2006) who looked at corporate governance and managers’ investment policies. Notably, Berger et al. (1997) found that, contrary to the control hypothesis, entrenched managers decrease firm’s leverage.

The results that family blockholders increase leverage strategically can also be consistent with alternative explanations. For example, Harvey et al. (2004) find that debt is mostly used by firms where managerial agency costs are highest. Firms owned by control-motivated blockholders are potential examples. The results in this paper show that control motivated blockholders are associated with higher leverage even in firms that do not suffer from overinvestment problems. This also means that the results are robust to the argument that such firms may have larger leverage to restrict empire building (Zwiebel, 1996). Debt and dividends can be substitutes when dealing with agency conflicts (Jensen, 1986). If dividends, instead of debt, are used to discipline managers’ empire building, then internal finance will be depleted with a consequent higher reliance on external funding. In the case where equity is more expensive than debt, then higher leverage results, but in this case, it is not because of any control motivations. The study found no support for this hypothesis. From this evidence it was concluded that the control motivation hypothesis proves robust to different tests.

Existing theoretical literature argues that control motives can influence the mix of equity and debt. Harris and Raviv (1988), Israel (1991) and Stulz (1988) investigated the actions of entrenched managers and found that they can use the capital structure to gain voting power. Stulz (1988) concluded that “whether management controls too few or too many votes, the firm’s capital structure decision is relevant because of its effect on the distribution of voting rights” (page 27).
Control motivations should be tested against other hypotheses. Managers with high control motivations often hold undiversified portfolios with significant firm-specific risks. Applying the Fama (1980) and Masulis (1988) frameworks to the case of leverage in firms owned by undiversified control-motivated managers, we can hypothesize that lower leverage can be used to reduce firm-specific risk. Debt in firms with concentrated ownership can also be used as a disciplining device to solve agency conflicts, especially where legal protection is ineffective. Harvey et al. (2004) showed that debt serves as a governance mechanism in emerging markets because it either reins in the overinvestment problem or signals management’s unwillingness to engage in overinvestment. Their evidence is consistent with Jensen (1986, 1993), Flannery (1986), Stulz (1990), Diamond (1991), Hart and Moore (1995), and Zweibel (1996).

Cheng, Nagar and Rajan (2004) stated that in the context of firms with an owner-manager, most financiers insist on some form of protection, so that the final compromise reached in most financial contracts for small firms is one resembling a debt contract (or a venture capital contract), which protects the founder-manager’s control as long as the firm is performing adequately.

Holmen (2007) used direct estimates of the portfolio diversification of the largest shareholder in a firm to study the impact of shareholder diversification on the firm. For firms where the controlling shareholder is an individual, tests indicated that the owner-managers use debt, dual class shares and corporate control transactions (merger activity) to strategically trade-off corporate control and the drawback of poor portfolio diversification. However, for firms where the controlling shareholder is an institution, the results indicate that control, but not diversification, is important.

Most of the empirical studies done on the relationship between firm growth and capital structure tend to follow the agency theory proposition. However, the empirical findings of studies done in the developed world differ from those of the developing world, those done in developing world show that managers are motivated by fear of bankruptcy and
therefore are averse to debt finance while those managers in the developed world are motivated by fear of dilution of ownership take overs and therefore prefer debt finance. The management of the individual firm will be expected to influence the capital structure decisions through the financial decisions that they make as they guide the operations of the firms. Some of the financial decisions that they make include short-term borrowing, setting the cash ratio of the firms, deciding the dividend policy of the firm and the retention ratio among other decisions. These decisions are bound to guide the capital structure decision taken by the individual firms. For the purpose of this research: retention ratio, dividend ratio and cash ratio were adopted as proxies for the firm management control.

2.5. Critique of the existing literature relevant to the study

The financial literature offers two competing models of financial decisions: the static trade-off and the pecking order theory. In the trade-off model, firms identify their target leverage by weighing the costs of financial distress and the tax benefits. At the target leverage level, the benefit of the last unit of debt just offsets the cost. In contrast, the pecking order theory arises due to the existence of asymmetric information and transaction costs. In this theory, firms raise funds in a particular sequence and follow two rules. Firstly, corporations prefer internal financing than external ones. Secondly, firms always issue the safest securities first.

According to reviewed literature, capital structure studies continue to draw mixed findings with different theories not reaching a consensus on capital structure determinants. It seems that one is competing against the other and they both seem reasonable to some extent. Scholars always try to run a race between them in order to find the circumstances in which one is superior to another (Myer & Majuf, 1984; Fama & French, 2002). They find that pecking order works best for large, mature companies that have access to public bond markets. This is not consistent with smaller, younger, growth firms, which are more likely to rely on equity instead of debt. Here the pecking
order theory stumbles (Shyam-Sunder & Myers, 1999; Lemmon & Zender, 2002; Frank & Goyal, 2003). The trade-off theory still retains some explanatory power once pecking order motives are accounted for.

Empirical studies also show no consensus since even studies conducted within the same locality arrive at different conclusions e.g. Ngugi (2008) and Nyangoro (2003). The review considered comparative studies between developed and developing studies as well as country specific African studies. While previous research focused mainly on firm specific factors, later studies have laid emphasis on institutional as well as macroeconomic environment to assess the effect of country specific factors. Another conclusion of the study is that capital structure measures remain the same across developed and developing countries. This implies that variables used in developed countries are also applicable in developing countries.

2.6 Summary

The above review has clearly shown that there are a number of factors other than regulations that influence capital structure of financial firms. The Target debt ratio varies from country to country, industry to industry, and firm to firm (Buferna et al., 2005). As far as studies on Kenya are concerned, there are numerous studies on the determinants of capital structure of listed non-financial firms. Little is known about the influence a firm management control may have as a moderating variable on the influence of profitability, firm’s size, firm’s growth and firm’s risk on capital structure, especially for the insurance companies in Kenya. Control motivations of firm management should be tested against other hypotheses, Harvey et al. (2004). This study seeks to explore how insurance firms set their capital structure and the influence of firm management control as a moderating factor on the capital structure decisions of the insurance companies in Kenya.
2.7 Research gaps

Literature suggests that debt requirements of a firm in one industry differ from a firm in another industry because the various industries experience different business environments (Titman & Wessels, 1988). As a result of the unique financial characteristics of insurance firms and the environment in which they operate and the massive collapse of eight insurance companies in the last decade (IRA report, 2008), there is a strong ground for a separate study on the influence of firm specific factors on capital structure of insurance companies in Kenya.
CHAPTER THREE

METHODOLOGY

3.1. Introduction

This chapter describes the research methodology used in the study. The research design is described followed by population, data collection procedures and finally data processing and analysis. According to Sekaran (2010) a central part of the research is to develop an effective research strategy.

3.2. Research design

This study adopted longitudinal research design which combines both cross-sectional and time series studies to enable the study to carry out a survey across all insurance firms over a ten year period. Cross-sectional survey is primarily concerned with gathering data at a single time from a group (Creswell, 2008). Time series can be conducted by observing the same group of individuals over a period of time (Creswell, 2008).

This design was chosen because of its many advantages. Some of the benefits of using panel data sets are listed in Hsiao (1986): Obvious benefits include availing a much larger data set with more variability and less collinearity among the variables than is typical of cross-section or time-series data. With additional, more informative data, one can get more reliable estimates and test more sophisticated behavioural models with less restrictive assumptions. Panel data sets are also better able to identify and estimate effects that are simply not detectable in pure cross-sections or pure time-series data. This approach further allows for greater flexibility in modelling differences in behaviour across firms which enables us to control for unobserved heterogeneity (Wooldridge, 2002).
This research strategy is supported by majority of researchers in the field of capital structure in both developed countries and developing countries, for instance, Amindu (2007) in his study, “The firm specific- determinants of capital structure of banking industry in Ghana”. This design was also used by Asfour (2013) in his study, “Impact of firm level factors on capital structure of Ethiopian insurance companies” and also Chen (2008) used this design in his study of Chinese firms.

3.3. Target population

Population refers to the entire group of people or things of interest that the study wishes to investigate, Sekaran (2010). Bryman& Bell (2003) defines a population as basically the universe of units from which the sample is to be selected. The population covered all the 51 registered insurance firms in Kenya. For the full list of all the registered insurance firms in Kenya, refer to appendix A.

The target population for this study covered all the registered insurance firms in Kenya, which were operational from 2003 to 2012 and had filled their audited financial statements with the insurance regulatory authority for the same period. There are only 41 insurance firms that meet those criteria for study. For the full list of all the insurance firms that were studied, refer to appendix A.

3.4. Data collection instruments and procedures

The data for this study was obtained from the insurance regulatory authority website. The other set of data was obtained from the specific company website and also from the security exchange website for the quoted insurance firms. It involved downloading the data and using it for analysis.
3.5. Data and data sources

The study used panel data which was mainly in form of financial statements of insurance companies for the ten years. Panel data, also called longitudinal data, is data where multiple cases (people, firms, countries etc) were observed at two or more time periods Watson (2003). The study used primary data and secondary data from an IRA (insurance regulatory authority), specific companies’ and Nairobi security exchange databases. Kothari (2004) describes primary data as those which are collected afresh and for the first time, and thus happen to be original in character.

The primary data used for this study was collected directly from the companies in form of newsletters containing financial statements of the 10 years. Further information was sourced from specific company websites and also from IRA and NSE databases. The secondary data was collected from journals, research papers, IRA, NSE and the association of insurers. This data had already been collected by the organizations and analyzed for their use and records. These two types of data have been used by other researchers in the testing of the pecking order theory, and many other financial researchers such as Lemmon and Zender (2003), Chirinko and Singha (1999), Frank and Goyal (2003) among others.

The secondary data was collected through document reviews from the following sources: insurance regulatory authority, Nairobi securities exchange and specific company websites. The information that was sourced from the regulator was mainly the list of all registered insurance firms and their audited financial statements. This information was considered credible because the regulator enforces very strict rules to ensure that the information filed is authentic and individual companies are duty bound to ensure that proper accounting practices are observed before submitting their reports and very heavy penalties are inflicted on companies that fail to adhere to the rules. The Nairobi securities exchange provided information on quoted insurance firms giving such important information as the value of their securities and indicating trends. Finally from
company websites and yearly reports, the study obtained information about the changes in their debt policies.

3.6. Data processing and analysis

The raw data was cleaned and edited to facilitate quantitative analysis. After cleaning the data in the excel spread sheets, it was imported into the Statistical software (Eviews version 8) and analyzed. The results were then presented, discussed and conclusions drawn as documented in this thesis.

3.6.1 Confirmatory factor analysis

Confirmatory factor analysis (CFA) is a special form of factor analysis most commonly used in social research. It is used to test whether measures of a construct are consistent with a researcher's understanding of the nature of that construct (or factor). As such, the objective of confirmatory factor analysis is to test whether the data fit a hypothesized measurement model. This hypothesized model is based on theory and/or previous analytic research. Gatignon, (2010). Structural equation modeling software AMOS was used for performing confirmatory factor analysis.

3.6.2 Descriptive analysis

Descriptive analysis was done and the necessary descriptive statistics computed. Descriptive analysis is defined by Frankfort-Nachmias and Leon-Guerrero (2006) as statistical procedures that are used to describe the population one is studying. They also contended that descriptive statistics use graphical and numerical summaries to give a picture of a data set. The following numerical summaries were obtained as indicated in chapter four: mean, standard deviation, skewness, kurtosis, minimum and maximum figures were presented in tables.
3.7.2 Correlation analysis

Correlation analysis statistics were computed to measure the relationship between the independent variables and dependent variable. The resulting value (called the "correlation coefficient") indicated strength of the predictor variables in predicting the outcome variable. The goal is to see if a change in the independent item (which is usually an indicator) will result in a change in the dependent item. This information helps you understand an indicator's predictive abilities (Creswell, 2008).

3.7.3 Diagnostic tests

Different diagnostic tests were run to determine the appropriateness of the data for regression analysis: The assumptions of normality of the data, no multicollinearity, no autocorrelation and homoscedasticity were tested for and also test for Cointegration, test for stationarity of the data and test for random and fixed effects were carried out.

Test for multicollinearity

Multi-collinearity test was done to establish the strength of correlation between the independent variables. The null hypothesis is that there is no linear relationship between explanatory variables which may cause the regression model to be biased (Gujarati, 2004). When there is strong correlation between variables, it becomes difficult to identify the impact of individual independent variables. Thus, in order to examine the possible degree of multi-collinearity among the explanatory variables, correlation matrixes of the selected explanatory variables will be used. Usually, the multi-collinearity exists if the correlation between two independent variables is more than 0.75 (Malhotra, 2007).
Test for autocorrelation

The study tested for autocorrelation of errors in the variables. One of the regression assumptions holds that the errors associated with one observation are not correlated with the errors of any other observation. For this purpose, Durbin-Watson (DW) measure was used. According to Brooks (2008), DW has 2 critical values: an upper critical value and a lower critical value, and there is also an intermediate region where the null hypothesis of no autocorrelation can neither be rejected nor not rejected. So, the null hypothesis is rejected and the existence of positive autocorrelation presumed if DW is less than the lower critical value; the null hypothesis is rejected and an existence of negative autocorrelation is presumed if DW is greater than 4 minus the lower critical value; the null hypothesis is not rejected and no significant residual autocorrelation is presumed if DW is between the upper critical value and 4 minus the upper limits; the null hypothesis is neither rejected nor not rejected if DW is between the lower and the upper limits, and between 4 minus the upper and 4 minus the lower limits.

Test for heteroscedasticity

The assumption of homoscedasticity was also tested for to ensure that the results of regression analysis were not biased Gujaratti (2004). This assumption concerns variation around the population regression line. Specifically, it states that the variation of the Y’s about the regression line is the same, regardless of the value of the X’s (Van Horne, 1998). Test of heteroscedasticity aims to interpret whether the regression model has the differences in residual variance from one observation to another observation (Ghozali, 2002). If the residual variance from one observation to another observation is the same, it is called homoscedasticity.

Test for data stationarity

Test for stationarity of the data was done to check for any trends or seasonality, a stationary data has the property that the mean, variance and autocorrelation structure do
not change over time. Stationarity can be defined in precise mathematical terms, but basically it means a flat looking series, without trend, constant variance over time, a constant autocorrelation structure over time and no periodic fluctuations, Granger (1986). The null hypothesis is that the data has a unit root or it is not stationary. Autoregressive unit root tests are based on testing the null hypothesis that $\varphi = 1$ (difference stationary) against the alternative hypothesis that $\varphi < 1$ (trend stationary). They are called unit root tests because under the null hypothesis, the autoregressive polynomial of $zt$, $\varphi(z) = (1 - \varphi z) = 0$, has a root equal to unity. Stationarity tests take the null hypothesis that $yt$ is trend stationary. If $yt$ is then first differenced it becomes

$$\Delta yt = \delta + \Delta zt$$

$$\Delta zt = \varphi \Delta zt-1 + \varepsilon t - \varepsilon t-1$$

**Test for cointegration**

The data was also tested for spurious regression situations. This was done by carrying out Cointegration test. This test assumes that the series are not co-integrated, meaning all linear combinations of the dependent and explanatory variables, including the residuals from OLS, are unit root non-stationary. Granger (1986) notes, “a test for Cointegration can be thought of as a pre-test to avoid ‘spurious regression’ situations”. Therefore, a test of the null hypothesis (H0); of no Cointegration is concluded against the alternative (H1); of Cointegration. This corresponds to a unit root test null hypothesis of non-stationarity against the alternative of stationarity.

**Fixed vs random effect models test**

This test was conducted to establish which model fitted the data well. The null hypothesis that was tested holds that a random effect is the most suitable model for the data. The key Assumption for fixed effect is that there are unique attributes of
individuals that are not the results of random variation and that they do not vary across time (The fixed effect assumption is that the individual specific effect is correlated with the independent variables). This model is adequate if we want to draw inferences only about the examined individuals Maddala (2001). Also known as "Least Squares Dummy Variable Model" (LSDVM). The key assumption for random effects is that there are unique, time constant attributes of individuals that are the results of random variation and do not correlate with the individual regressors Maddala (2001). This model is adequate if we want to draw inferences about the whole population, not only the examined sample.

3.8. Panel regression analysis

Panel data analysis was done on the data to establish the influence of the independent variable on dependent variable. This is a statistical method, widely used in social science, epidemiology, and econometrics, which deals with two-dimensional (cross sectional/times series) panel data. The data are usually collected over time and over the same individuals and then a regression is run over these two dimensions Badi (2008). Multidimensional analysis is an econometric method in which data are collected over more than two dimensions typically, time, individuals, and some third dimension).

The panel regression model used in this study is an improved version of the model used in Baha al Din (2013) and Amidu (2007). The dependent variable, capital structure or leverage is defined as the ratio of total debt divided by the total assets. The explanatory variables include firm size, profitability, risk and Growth. The four independent variables were regressed on capital structure as indicated by the models below to establish the level of influence of the four firm specific factors. Panel data involves the pooling of observations on a cross-section of units over several periods. It facilitates identification of effects that are simply not detectable in pure-cross sections or pure time-series studies, (Creswell, 2008). The panel regression equation differs from a
regular time-series or cross section regression by the double subscript attached to each variable. The general form of the panel data model can be specified more compactly as;

\[ Y_{it} = \beta_0 + \beta_1 X_{it} + \epsilon_{it} \] (i)

This simple panel data model was used to test the significance of each of the four predictor variables separately and the Anova results obtained were used to determine the significance of each individual variable in predicting the outcome variable. The subscript (i) represented the cross-sectional dimension while (t) represented the time-series dimension. The left-hand variable \( Y \) represents the dependent variable in the model, which is the firm’s debt ratio. \( X \) represents the independent variable in the estimation model. The study used equation (ii) to test the influence of the four firm specific factors combined without the moderation effect of the firm management control. The Anova and the \( R^2 \) results were used to measure the influence of all the four firm specific factors.

\[ Y_{it} = \beta_0 + \beta_1 X_{1it} + \beta_2 X_{2it} + \beta_3 X_{3it} + \beta_4 X_{4it} + \epsilon_{it} \] (ii)

The study used equation (iii) to test the moderating influence of management control on the relationship between independent variables (profitability, growth, size and firm risk) and capital structure of insurance firms in Kenya. The significance of the beta for interaction and a change in \( R^2 \) of the model means that management control is significantly moderating the influence of the four firm specific factors on capital structure of insurance firms in Kenya. The study introduced a dummy variable \((X5)\) in the equation to capture the influence of the moderator (management control) in the model.

\[ Y_{it} = \beta_0 + \beta_1 (X_1 \times X_5)_{it} + \beta_2 (X_2 \times X_5)_{it} + \beta_3 (X_3 \times X_5)_{it} + \beta_4 (X_4 \times X_5)_{it} + \epsilon_{it} \] (iii)
Where:

\( \beta_0 \), is a constant, \( \beta_1, \beta_2, \beta_3, \beta_4, \beta_5 \), are coefficients of variables, \( e \), is the residual term.

\( Y_{it} \) - represents leverage (total debt/equity + debt) for firm I in time t

\( X_{1it} \) – firm profitability (Rate of return on assets) for firm I in time t

\( X_{2it} \) – firm growth (represents growth in sales) for firm I in time t

\( X_{3it} \) - represents the size of the firm (log of total assets) for firm I in time t

\( X_{4it} \) – represents risk (the squared difference between the firm’s profitability in time t and the mean profitability for firm i)

\( X_{5it} \) – Is the firm management control (retention ratio) for firm I in time t

\( e_{it} \) - is the error term for firm I in time t

3.9. Hypotheses testing

T-test was done to determine the significance of each predictor variable in determining the outcome variable; the results of this test are discussed in chapter four. Inferential statistics is concerned with determining how likely it is for the results obtained from a sample to be similar to results expected from the entire population (King, Rosopa & Minium, 2012). The inference was drawn by the t-test. The t-test determines the significance of individual variables.
CHAPTER FOUR

RESULTS AND DISCUSSION

4.1. Introduction

This chapter covers research findings and discussion of results of the study. It begins with confirmatory factor analysis, diagnostic tests, descriptive statistics, correlations analysis and regressions analysis. The interpretations and discussions of the results are also presented.

4.2. Confirmatory factor analysis

Confirmatory factor analysis was done to test whether the measures of the constructs were consistent with the researcher’s understanding of that construct or factor. The indicators were regressed on their respective variables in order to identify the most significant indicators which were adopted as proxies to measure the variables.
Since the independent variables were measured using different proxies for example; profitability was measured using EBIT (earnings before interest and tax), return on assets and return on capital employed. Standardized regression weights were computed using AMOS software to identify the proxies with highest estimates to be adopted as the variable indicators. The study findings depicted that the most significant determinant of profitability is return on assets since it had the highest estimates of 0.765 followed by EBIT with an estimate of 0.325 and return on capital employed had 0.216. Therefore return on assets was adopted as the proxy for profitability. This was found to be consistent with theory as other researchers in the field of capital structure had used the
same indicator in their studies for example; Ebaid (2009) used ROA as the proxy for profitability.

Firm growth variable was measured using three proxies: change in assets, turnover change and change in investment income. The standardized regression weights of these proxies were computed using the AMOS software as shown in table 4.1. The study findings depicted that the most significant determinant of growth is change in equity since it had the highest standardised estimates of 0.827 followed by investment change with a standardised estimate of 0.167 and turnover change estimate was 0.116. Therefore, change in equity was adopted as the proxy for growth. This proxy was also found to be consistent with theory as had also been used in other capital structure studies for example; Drobetz and Fix (2003) measured growth as a percentage increase in equity.

Firm size had three indicators: size of equity, log of assets and market share. Standardised regression weights were also computed and the results shown in table 4.1. The study findings depicted that the most significant determinant of firm size is natural logarithm for total assets since it had the highest standardised regression estimates of 0.567 followed by size of equity with an estimate of 0.327 and market share had the lowest estimate of 0.117. Therefore, log of assets was adopted as the indicator for firm size. This was also found to be consistent with theory as most of other researchers have used log of assets as the indicator for firm size. Myers and Majluf (1984), Turere (2012) and Muema (2013) used the same measure.

Firm risk was measured using three indicators: standard deviation of operating income, sales volatility and solvency ratio. Using AMOS software their standardised regression weights were computed and the results shown in table 4.1. The study findings depicted that the most significant determinant of firm risk is standard deviation of operating income since it had the highest estimates of 0.669 followed by solvency ratio with an estimate of 0.352 and sales volatility had the lowest estimate 0.199. Therefore standard
deviation of operating income was adopted as the indicator for firm risk. This proxy has also been used by other researchers as an indicator for firm risk. Titman and Wessels (1988) used standard deviation of operating income as a proxy for firm risk. Others who used the same proxy include; (Bradley, Jarrell, & Kim, 1984).

Firm management control had two indicators: retention ratio and cash ratio. Standardised regression estimates were also computed and the results shown in table 4.1. The study findings depicted that the most significant determinant of firm management Control is retention ratio since it had the highest estimates of -0.673 followed by cash ratio with an estimate of -0.327. Therefore, retention ratio was adopted as the proxy for the firm management control in this study. This proxy had been used earlier by other studies for example Harvey et al. (2004) used retention ratio as a proxy for managerial discretions.

4.3. Results of diagnostic tests

Different diagnostic tests were run to determine the appropriateness of the data for regression analysis: The assumptions of normality of the data, no multicollinearity, no autocorrelation and homoscedasticity were tested for and also test for Cointegration, test for stationarity of the data and test for random and fixed effects were carried out.

4.3.1 Test for normality

For regression to take place and t-test results to be unbiased, it is important for the assumption of normal distribution to be fairly upheld, though it may be difficult for financial data to meet this condition (Gujarati, 2009). The values for asymmetry and kurtosis between -3 and +3 are considered acceptable in order to prove normal univariate distribution (George & Mallery, 2010). Researchers in the field of social sciences are following less stringent criteria based on the suggestion by Kline (1998, 2005). Data with skewness above an absolute value of 3.0 and kurtosis above an absolute value of 8.0 are considered problematic.
The study used the shapiro-wilky statistic and the results are shown on table 4.2. The shapiro-wilky statistic was significant in all the variables and therefore, the study concluded that the data was not normally distributed. However, the study proceeded to conduct regression analysis on the data because the level of kurtosis and skewness was below 3 and also the fact that the data was found to have satisfied all the other regression assumptions including the independence of errors and normal distribution of errors as shown by the test for autocorrelation and heteroscedasticity respectively.

### Table 4.2: Normality test statistics

<table>
<thead>
<tr>
<th></th>
<th>Kolmogorov-Smirnov(^a)</th>
<th>Shapiro-Wilk</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Statistic     df</td>
<td>Sig.</td>
</tr>
<tr>
<td>Leverage</td>
<td>.237          410</td>
<td>0.000</td>
</tr>
<tr>
<td>Profitability</td>
<td>.148          410</td>
<td>0.000</td>
</tr>
<tr>
<td>Firm Growth</td>
<td>.220          410</td>
<td>0.000</td>
</tr>
<tr>
<td>Firm Size</td>
<td>.290          410</td>
<td>0.000</td>
</tr>
<tr>
<td>Firm Risk</td>
<td>.204          410</td>
<td>0.000</td>
</tr>
<tr>
<td>M. Control</td>
<td>.055          410</td>
<td>0.009</td>
</tr>
</tbody>
</table>
4.3.2 Test for multi-collinearity

Table 4.3: Multicollinearity statistics

<table>
<thead>
<tr>
<th>Capital structure/leverage</th>
<th>( \text{Period/years} \quad 2003 - 2012 )</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Tolerance</td>
</tr>
<tr>
<td>Firm profitability</td>
<td>.974</td>
</tr>
<tr>
<td>Firm growth</td>
<td>.927</td>
</tr>
<tr>
<td>Firm size</td>
<td>.904</td>
</tr>
<tr>
<td>Firm risk</td>
<td>.996</td>
</tr>
</tbody>
</table>

Test for multi-collinearity was done in order to examine the possible degree of multicollinearity among the explanatory variables. Multicollinearity is the result of strong correlation between independent variables. In the presence of multicollinearity, the interpretation of each regressor’s significance in explaining the observed variation on the dependent variable becomes difficult, and the coefficient estimates become inefficient (Hair et al., 2006). Gujarati and Porter (2009) further explain how the case of severe multicollinearity causes overestimated standard errors and high R-squared values whilst yielding few significant t-ratios and therefore rendering regression results inaccurate.

Using the variance inflation factor (VIF) method the study confirmed the absence of multicollinearity. The results of table 4.3 indicate that all variables have high tolerance levels with firm risk leading at .996 tolerance and a variance inflation factor (VIF) of 1.004 which is very low, firm profitability has a tolerance level of .974 and a VIF of 1.027, firm size has a tolerance of .904 and a VIF of 1.107 and firm growth has a tolerance of .927 and a VIF of 1.078. The evidence of multicollinearity exists if there is a low tolerance (less than 0.75) or high VIF in any of the predictor variables, Hair et al. (2006). Therefore, the results of this test indicate no evidence of multicollinearity.
4.3.3 Test for autocorrelation

The study tested for autocorrelation of errors in the variables. One of the regression assumptions holds that the errors associated with one observation are not correlated with the errors of any other observation. For this purpose, Durbin-Watson (DW) measure was used. According to Brooks (2008), DW has 2 critical values: an upper critical value and a lower critical value, and there is also an intermediate region where the null hypothesis of no autocorrelation can neither be rejected nor not rejected. The Durbin-Watson statistic is always between 0 and 4: A value of 2 means that there is no autocorrelation in the sample, values approaching 0 indicate positive autocorrelation and values toward 4 indicate negative autocorrelation (Brooks, 2008).

Table 4.4: Durbin Watson test

<table>
<thead>
<tr>
<th>Model</th>
<th>Durbin Watson statistic</th>
</tr>
</thead>
<tbody>
<tr>
<td>Firm profitability</td>
<td>1.756030</td>
</tr>
<tr>
<td>Firm growth</td>
<td>1.719162</td>
</tr>
<tr>
<td>Firm size</td>
<td>1.733131</td>
</tr>
<tr>
<td>Firm risk</td>
<td>1.778047</td>
</tr>
<tr>
<td>Full model without moderation</td>
<td>1.842221</td>
</tr>
<tr>
<td>Full model with moderation</td>
<td>1.845551</td>
</tr>
</tbody>
</table>
The autocorrelation test results are presented on table 4.4. The results for all the models indicated that (DW) statistic was very close to 2.0 which lie within the non-rejection region and this means that the null hypothesis of no autocorrelation was upheld and therefore the study concluded that the data had no evidence of autocorrelation.

### 4.3.4 Test for heteroscedasticity

The assumption of homoscedasticity was also tested for to ensure that the results of regression analysis were not biased (Gujaratti, 2004). This assumption concerns variation around the population regression line. Specifically, it states that the variation of the Y’s about the regression line is the same, regardless of the value of the X”s (Van Horne, 1998). Test of heteroscedasticity aims to interpret whether the regression model has the differences in residual variance from one observation to another observation (Ghozali, 2002). If the residual variance from one observation to another observation is the same, it is called homoscedasticity which is the desirable situation. The study used Breusch-pagan test.

**Table 4.5: Test for heteroscedasticity**

<table>
<thead>
<tr>
<th>Breusch-pagan test</th>
<th>Coefficient</th>
<th>Std. Error</th>
<th>t – statistic</th>
<th>Prob.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Constant</td>
<td>0.031957</td>
<td>0.009950</td>
<td>3.211862</td>
<td>0.5815</td>
</tr>
<tr>
<td>Profitability</td>
<td>0.069236</td>
<td>0.029454</td>
<td>2.350668</td>
<td>0.0593</td>
</tr>
<tr>
<td>Firm growth</td>
<td>0.023146</td>
<td>0.022686</td>
<td>1.020291</td>
<td>0.6183</td>
</tr>
<tr>
<td>Firm size</td>
<td>-0.168321</td>
<td>0.063828</td>
<td>-2.637103</td>
<td>0.1188</td>
</tr>
<tr>
<td>Firm growth</td>
<td>-0.000131</td>
<td>0.013274</td>
<td>-0.009874</td>
<td>0.3121</td>
</tr>
</tbody>
</table>
The results on table 4.5 of heteroscedasticity test on all the variables show that the t-statistics for all the variables were insignificant at conventional significance level (0.05) which means that null hypothesis of homoscedasticity was upheld. Therefore, the study concluded that the data fulfilled the assumption of homoscedasticity.

4.3.5 Test for cointegration

The data was also tested for spurious regression situations. This was done by carrying out cointegration test. This test assumes that the series are not co-integrated, meaning all linear combinations of the dependent and explanatory variables, including the residuals from OLS, are unit root non-stationary. Granger (1986) notes that a test for cointegration can be thought of as a pre-test to avoid ‘spurious regression’ situations. Therefore, a test of the null hypothesis (H0), of the no cointegration against the alternative (H1) of cointegration, and so corresponds to a unit root test null hypothesis of non-stationarity against the alternative of stationarity.

Cointegration model is based on the premise that all the variables are non-stationary at level but when converted to first difference they become stationary, Granger (1986). Therefore the four firm specific variables were assumed to be non-stationary at level before the test but after conversion to first difference, they became stationary. Kao Residual Cointegration Test was used.

Table 4.6: Kao residual cointegration test

<table>
<thead>
<tr>
<th></th>
<th>t-Statistic</th>
<th>Prob.</th>
</tr>
</thead>
<tbody>
<tr>
<td>ADF</td>
<td>2.569255</td>
<td>0.0051</td>
</tr>
<tr>
<td>Residual variance</td>
<td>0.014314</td>
<td></td>
</tr>
<tr>
<td>HAC variance</td>
<td>0.005448</td>
<td></td>
</tr>
</tbody>
</table>
Kao Residual Cointegration Test results shown on table 4.6 indicate that the p-value for Kao ADF statistic 0.0051 is significant at conventional significance level, which means that the null hypotheses of no cointegration and no deterministic trend are rejected and the alternative hypotheses of evidence of cointegration and deterministic trend in the differenced data is upheld. Therefore, the study concludes that the variables are co-integrated or they have long run association. However, it is imperative to note that cointegration is only present in the differenced data and not at level.

4.3.6 Test for data stationarity

Test for stationarity of the data was done to check for any trends or seasonality. A stationary data has the property that the mean, variance and autocorrelation structure do not change over time. Stationarity can be defined in precise mathematical terms, but basically, it means a flat looking series, without trend, constant variance over time, a constant autocorrelation structure over time and no periodic fluctuations (Granger, 1986). The null hypothesis is that the data has a unit root or it is not stationary. The study used two methods to test stationarity of the data: the Augmented Dickey-Fuller Test and the visual plots to physically check whether the data fulfilled the properties of stationarity such as constant mean, variance and any evidence of trend in the data. Visual Plot helps to visualize the trend of the panel regression variables (Greene, 2008).
### Table 4.7: Test for stationarity

<table>
<thead>
<tr>
<th>Variable</th>
<th>Coefficient</th>
<th>Std. Error</th>
<th>t-Statistic</th>
<th>Prob.</th>
</tr>
</thead>
<tbody>
<tr>
<td>RESID(-1)</td>
<td>-1.151616</td>
<td>0.114196</td>
<td>-10.08456</td>
<td>0.0000</td>
</tr>
<tr>
<td>D(RESID(-1))</td>
<td>0.091518</td>
<td>0.092717</td>
<td>0.987062</td>
<td>0.3246</td>
</tr>
<tr>
<td>D(RESID(-2))</td>
<td>0.080539</td>
<td>0.065223</td>
<td>1.234832</td>
<td>0.2181</td>
</tr>
</tbody>
</table>

Durbin-Watson stat 1.911453

On table 4.7 the study presents results of Augmented Dickey-Fuller Test Equation. The results indicate that the data is stationary at level which is shown by the p-value of RESID(-1) statistic (0.0000) clearly rejecting the null hypothesis of non-stationarity. However it is also important to note that after the data is differenced once and twice, it becomes non-stationary as indicated by the significance of the p-values of D(RESID(-1)) 0.3246 for the first difference and D(RESID(-2)) 0.2181 for the second difference. The results of the differenced data are collaborated by Pedroni and Kao cointegration test results. The DW statistic is also not 0 but 1.911453 which is almost 2 and this means that autocorrelation structure is good and variance of the error term is constant. From these results, the study concludes that the data is stationary at level.

Appendix D presents the results of the visual plots. The results show that all the variables have a constant mean of 0 which means that data fulfils the first condition of stationarity which is constant mean. Secondly, the plots of all the variables display a flat looking series, without trend which is also a very critical condition of stationarity. So, from both tests, the study concludes that the data is stationary and therefore ready for panel regression analysis.
4.3.7 Random and fixed effects test

This test was conducted to establish which model fitted the data well. The null hypothesis that was tested holds that random effects model is the most suitable for the data. The key assumption for fixed effect is that there are unique attributes of individuals that are not the results of random variation and that do not vary across time says (Maddala, 2001). The key assumption for random effects is that there are unique, time constant attributes of individuals that are the results of random variation and do not correlate with the individual regressors according to (Maddala, 2001).

In order to decide between random effects and fixed effects models, researchers often rely on the Hausman (1978) specification test (Greene, 2008). The Hausman test is designed to detect violation of the random effects modelling assumption that the explanatory variables are not correlated with the unit effects. If there is no correlation between the independent variable(s) and the unit effects, the Hausman test statistic $H$ is a measure of the difference between the two estimates: Under the null hypothesis of no correlation between the regressors and the unit effects, $H$ is distributed chi-square with degrees of freedom equal to the number of regressors in the model. A finding that $p < 0.05$ is taken as evidence that at conventional levels of significance, the two models are different enough to reject the null hypothesis, and hence to reject the random effects model in favor of the fixed effects model.

**Hausman test**

Hausman test was used determine random and fixed effects as shown on Table 4.7. Hausman test basically tests whether the unique errors $(ui)$ are correlated with the regressors and the null hypothesis is they are not (Greene, 2008).
Table 4.8: Hausman test

Test cross-section random effects

<table>
<thead>
<tr>
<th>Test Summary</th>
<th>Chi-Sq. Statistic</th>
<th>Chi-Sq. d.f.</th>
<th>Prob.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cross-section random</td>
<td>15.462838</td>
<td>4</td>
<td>0.0038</td>
</tr>
</tbody>
</table>

Cross-section random effects test comparisons:

<table>
<thead>
<tr>
<th>Variable</th>
<th>Fixed</th>
<th>Random</th>
<th>Var(Diff.)</th>
<th>Prob.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Firm Profitability</td>
<td>0.003554</td>
<td>0.012001</td>
<td>0.000008</td>
<td>0.0025</td>
</tr>
<tr>
<td>Firm Growth</td>
<td>0.000000</td>
<td>-0.000000</td>
<td>0.000000</td>
<td>0.0337</td>
</tr>
<tr>
<td>Firm size</td>
<td>-0.001144</td>
<td>-0.001222</td>
<td>0.000000</td>
<td>0.5529</td>
</tr>
<tr>
<td>Firm risk</td>
<td>-0.000002</td>
<td>-0.000002</td>
<td>0.000000</td>
<td>0.8969</td>
</tr>
</tbody>
</table>

The Hausman test results on Table 4.8 for random effect rejected the null hypothesis that the preferred model was cross sectional random at conventional significance level and therefore the fixed effects model was upheld. The p-value for Chi-Sq-statistic shown above is 0.0038 which is less than 0.05. This result was further confirmed by the test results for period effect that indicated the presence of cross-section fixed with a statistic of 3.808337 and p-value of 0.0000. Therefore, the fixed effects will be the right model for this research.
Table 4.9: Test for period effects

Test cross-section and period fixed effects

<table>
<thead>
<tr>
<th>Effects Test</th>
<th>Statistic</th>
<th>d.f.</th>
<th>Prob.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cross-section F</td>
<td>3.808337</td>
<td>(40,311)</td>
<td>0.0000</td>
</tr>
<tr>
<td>Cross-section Chi-square</td>
<td>147.502035</td>
<td>40</td>
<td>0.0000</td>
</tr>
<tr>
<td>Period F</td>
<td>1.701945</td>
<td>(9,311)</td>
<td>0.0877</td>
</tr>
<tr>
<td>Period Chi-square</td>
<td>17.788840</td>
<td>9</td>
<td>0.0377</td>
</tr>
<tr>
<td>Cross-Section/Period F</td>
<td>3.322131</td>
<td>(49,311)</td>
<td>0.0000</td>
</tr>
<tr>
<td>Cross-Section/Period Chi-square</td>
<td>155.755000</td>
<td>49</td>
<td>0.0000</td>
</tr>
</tbody>
</table>

With reference to Table: 4.9 the Cross-section F and Cross-section Chi-square tests evaluate the joint significance of the cross-section effects using sums of squares (F-test) and the likelihood function (Chi-square test). Further tests reveal that there are significant period and cross sectional effects. The results indicate that the cross-sectional/period fixed effect model F-statistic was 3.322131 and a chi-square value of 155.755000 and the significance level in both cases was (0.0000) which was very high and therefore cross-section/period effect model was the right one for this data.
4.4. Industry summary

Table 4.10: Kenyan insurance companies between 2003 and 2012

<table>
<thead>
<tr>
<th>Years</th>
<th>No. of Firms</th>
<th>Profitability</th>
<th>Growth</th>
<th>Firm size</th>
<th>Firm risk</th>
<th>Leverage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Profit after tax (000)</td>
<td>Rise in assets</td>
<td>Value of assets in (000)</td>
<td>Solvency ratio</td>
<td>Total debt ratio</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2003</td>
<td>41</td>
<td>2,928,999</td>
<td>13%</td>
<td>87,157,032</td>
<td>113%</td>
<td>69%</td>
</tr>
<tr>
<td>2004</td>
<td>41</td>
<td>2,320,364</td>
<td>11%</td>
<td>92,065,533</td>
<td>95%</td>
<td>71%</td>
</tr>
<tr>
<td>2005</td>
<td>41</td>
<td>3,085,231</td>
<td>12%</td>
<td>104,464,874</td>
<td>126%</td>
<td>65%</td>
</tr>
<tr>
<td>2006</td>
<td>41</td>
<td>3,836,587</td>
<td>14%</td>
<td>124,737,706</td>
<td>103%</td>
<td>72%</td>
</tr>
<tr>
<td>2007</td>
<td>41</td>
<td>3,549,897</td>
<td>16%</td>
<td>146,541,007</td>
<td>97%</td>
<td>74%</td>
</tr>
<tr>
<td>2008</td>
<td>41</td>
<td>3,349,997</td>
<td>15%</td>
<td>154,452,739</td>
<td>84%</td>
<td>75%</td>
</tr>
<tr>
<td>2009</td>
<td>41</td>
<td>4,263,457</td>
<td>18%</td>
<td>178,403,820</td>
<td>91%</td>
<td>77%</td>
</tr>
<tr>
<td>2010</td>
<td>41</td>
<td>7,634,272</td>
<td>18%</td>
<td>223,490,783</td>
<td>91%</td>
<td>74%</td>
</tr>
<tr>
<td>2011</td>
<td>41</td>
<td>8,316,002</td>
<td>19%</td>
<td>245,725,769</td>
<td>60%</td>
<td>82%</td>
</tr>
<tr>
<td>2012</td>
<td>41</td>
<td>13,104,366</td>
<td>22%</td>
<td>311,215,873</td>
<td>88%</td>
<td>75%</td>
</tr>
</tbody>
</table>

Table 4.10 Statistics show that the four independent variables have positive relationship with leverage as leverage increases the values of the four also increase. Kenyan insurance companies have changed significantly, with increase in the value of assets from Ksh. 87,157,032 in 2003 to Ksh. 311,215,873 in 2012 which is approximately 257.07%. Similarly, profitability has also increased significantly from 2,928,999 in 2003 to 13,104,366 in 2012 which is approximately 347.4%. The solvency ratio seems to have declined between 2005 and 2008 from 126% to 84%. The total debt ratio of the industry also increased in the same period from 69% to 75%. The increase in debt ratio seems to be exerting pressure on the industry assets as indicated by the solvency ratio. The analyses that follow break down those changes into annual growth trends for each of the variables between 2003 and 2012 period.
Figure 4.1: Industry profitability

Figure 4.1 shows that profitability of the insurance companies has generally been on an upward trend for the ten year period with yearly profits after tax hitting the highest point in 2012 at over sh 13billion. However, some years registered a decline in the profit margins with 2004 indicating the lowest level at 2,320,364. However, the disputed general elections experienced in Kenya in December 2007 and 2008 as well as the global financial crisis that was happening at that same time affected the economy adversely. Both events badly affected the insurance companies, according to CBK’s September 2009 Monthly Economic Review.
Figure 4.2: Industry growth

Figure 4.2 shows that growth measured by yearly percentage increase in the value of total asset, has a positive trend, with year 2012 indicating the highest level of growth at 22%. This clearly points to a bright future for the industry. The high growth rate of insurance companies was largely attributed to the favourable macroeconomic environment: the performance of the Kenyan economy improved in 2012 compared to 2011. Real Gross Domestic Product (GDP) expanded by 4.6% in the year 2012 compared to 4.4% in 2011. The overall inflation rate stood at 3.2% in December 2012 compared to 18.9% as of December 2011 (Mainda, 2012). Years 2004, 2005 and 2008 growth rate declined. The decline in the growth in 2008 was mainly occasioned by global financial crisis and post-election violence that rocked Kenya.
Figure 4.3: Industry size

Figure 4.3 shows the size of the industry has continued to expand as shown by the increasing value of the total assets. It is imperative to note that the total assets by book value in 2003 were below sh. 100 billion and by 2012 the value had grown to above sh. 300 billion. This trend points to a rapidly expanding industry. This expansion has been supported by growth in both equity (shareholder’s funds) and debt. However, it is imperative to note that debt has been growing at a higher rate than equity. The expansion of the industry was slowed down in the period between 2007 and 2008 because of two major events: one was global financial crisis and the post-election violence, according to CBK’s September 2009 Monthly Economic Review.
Figure 4.4: Industry risk

Figure 4.4 shows that the level of risk in the industry has been increasing over the period between 2003 and 2012. This is clearly indicated by the negative slope of the trend line. Solvency ratio which is the proxy used to measure risk shows the capacity of the industry to meet its debt obligations and the lower the ratio the higher the risk of bankruptcy. Solvency ratio was highest in 2005 at over 120% and was lowest in 2011 at 60%. This was mainly occasioned by the poor performance of the Kenyan economy. According to the Kenya Economic Survey 2012, the Kenyan economy recorded a growth of 4.4% in 2011 compared to 5.8% in 2010. The low growth was attributed to unfavourable weather conditions in some parts of the country as well as the inflationary pressures associated with the instability in the foreign exchange markets. Most of the key sectors of the economy such as agriculture, manufacturing, transport and communications, and tourism recorded a rather minimal growth in 2011 compared to 2010. The level of risk has also been rising because of insurance firms using more of
debt finance compared to equity. The insurance companies has been plagued by huge amounts of fraudulent claims particularly for medical and motor insurance. This has led to the collapse of several insurance companies especially those dealing with public service vehicles, leading to most companies electing not to underwrite such business (SIB report, 2013).

![Figure 4.5: Industry capital structure/leverage](image)

Figure 4.5 shows that the proportion of debt finance is higher than equity in the Kenyan insurance companies and also shows a rising trend while the proportion of equity finance shows a declining trend. It is imperative to note that in 2003 the debt ratio was 69% while equity ratio was 31% while in 2012 debt ratio was 75% while equity ratio was
25%. The high debt ratio could be explained by favourable microeconomic environment particularly the stability of interest rates. The performance of the Kenyan economy improved in 2012 compared to 2011. Real Gross Domestic Product (GDP) expanded by 4.6% in the year 2012 compared to 4.4% in 2011. The overall inflation rate stood at 3.2% in December 2012 compared to 18.9% as of December 2011 (Mainda, 2012). The low cost of debt finance may have persuaded firms to borrow more debt and also the fact that debt finance is allowable for tax purposes. However, the high proportion of debt finance has significantly increased the risk of bankruptcy to many insurance firms and that coupled with increased cases of fraudulent claims could explain why 5 insurance firms closed shop in the last one decade. The low equity finance especially in 2011 and 2012 was mainly due to political uncertainty in the country occasioned by the structure of the coalition government and the political infighting, which almost led to a break-up of the coalition before the 2013 elections. The environment caused foreign investors to keep away, According to Business Monitor International Ltd 2013.

On table 4.1 the data shows the summary statistics of the firm specific factors of whole insurance companies: For the leverage the figure for kurtosis is 2.74 meaning that the data is fairly peaked, the figure for skewness is 1.13 which is well below 3.0 meaning that the data is fairly skewed. The mean value is 0.04 which is very close to zero; the standard deviation of the data is 0.10 which means that the data is fairly evenly distributed around the mean. The data on profitability, as shown in the descriptive statistics above indicate that the mean is 0.08 which is close to 0 and the median of 0.03 which is also very close to 0, the standard deviation is also very small 0.39 which means that the observation are fairly evenly distributed around the mean, the kurtosis is 2.80, the figure for skewness is 2.95. This means that the data is slightly positively skewed.

On growth as shown in the descriptive statistics above the mean of data is 163781.5 which is very large this is expected because the observation values are also big, the kurtosis is 1.09 which is acceptable for the data as it is below 3.0, the figure for skewness is 0.52 this means the data was slightly positively skewed. The data on firm
size as shown in the descriptive statistics above indicate that the mean of data is 9.91 and a median of 12.18 both the mean and the standard deviation indicate that the observation are very close the mean the kurtosis is -1.26 the data has less of kurtosis, the figure for skewness is -0.76 meaning that the data is slightly negatively skewed and also peaked.

The data on firm risk as shown in the descriptive statistics above the mean of data is 2.75 and a median of 2.86 this means the majority of the observations are evenly distributed around the mean the kurtosis is 3.00; the figure for skewness is -1.86 meaning that the data was just fairly negatively skewed. On management control as shown in the descriptive statistics above the mean of data is 0.39 this figure is very close to 0 which indicates that most of the observations on this variable are very close to the mean and -0.21 the kurtosis is .30, the figure for skewness is -.31 meaning that the data is slightly negatively skewed and also peaked.

Table 4.11: Insurance companies descriptive statistics

<table>
<thead>
<tr>
<th></th>
<th>Profitability</th>
<th>Growth</th>
<th>Firm size</th>
<th>Firm risk</th>
<th>Retention ratio</th>
<th>Leverage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean</td>
<td>0.081423</td>
<td>163781.5</td>
<td>9.907926</td>
<td>2.7468</td>
<td>0.389072</td>
<td>0.241498</td>
</tr>
<tr>
<td>Median</td>
<td>0.035197</td>
<td>61865.00</td>
<td>12.18386</td>
<td>2.8595</td>
<td>0.364585</td>
<td>0.121683</td>
</tr>
<tr>
<td>Maximum</td>
<td>5.939945</td>
<td>7976376.</td>
<td>16.40832</td>
<td>3.3432</td>
<td>1.000000</td>
<td>0.780942</td>
</tr>
<tr>
<td>Minimum</td>
<td>-0.771031</td>
<td>-5776406.</td>
<td>2.526813</td>
<td>0.9235</td>
<td>0.000000</td>
<td>-0.000166</td>
</tr>
<tr>
<td>Std. Dev.</td>
<td>0.388152</td>
<td>1400330.</td>
<td>4.698697</td>
<td>0.31427</td>
<td>0.240205</td>
<td>0.103548</td>
</tr>
<tr>
<td>Skewness</td>
<td>2.945190</td>
<td>0.518696</td>
<td>-0.756386</td>
<td>-1.8572</td>
<td>-.306264</td>
<td>1.126363</td>
</tr>
<tr>
<td>Kurtosis</td>
<td>2.795497</td>
<td>1.089548</td>
<td>-1.264307</td>
<td>-2.9957</td>
<td>-.440277</td>
<td>2.736702</td>
</tr>
<tr>
<td>Jarque-Bera</td>
<td>38.57142</td>
<td>8.079556</td>
<td>18.55503</td>
<td>25.01790</td>
<td>5.60651</td>
<td>15.31887</td>
</tr>
<tr>
<td>Probability</td>
<td>0.000033</td>
<td>0.001568</td>
<td>0.000015</td>
<td>0.000012</td>
<td>0.066408</td>
<td>0.009873</td>
</tr>
<tr>
<td>Sum</td>
<td>30.12641</td>
<td>60599167</td>
<td>366.933</td>
<td>21.2466</td>
<td>143.9565</td>
<td>15.35440</td>
</tr>
<tr>
<td>Sum Sq. Dev.</td>
<td>55.59432</td>
<td>7.24E+14</td>
<td>146.690</td>
<td>82.8945</td>
<td>21.29076</td>
<td>3.956456</td>
</tr>
<tr>
<td>Observations</td>
<td>410</td>
<td>410</td>
<td>410</td>
<td>410</td>
<td>410</td>
<td>410</td>
</tr>
</tbody>
</table>
4.5. Correlation analysis

Correlation analysis statistics were computed to measure the relationship between the independent variables and dependent variable. The resulting value (called the "correlation coefficient") indicates the strength of relationship between the predictor variables and the outcome variable (Creswell, 2008).

**Table 4.12: Correlations analysis results**

<table>
<thead>
<tr>
<th>Observations</th>
<th>Profitability</th>
<th>Growth</th>
<th>Firm size</th>
<th>Firm risk</th>
<th>control</th>
<th>structure</th>
</tr>
</thead>
<tbody>
<tr>
<td>Firm Profitability</td>
<td>1.000000</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>----</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>410</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Firm Growth</td>
<td>0.044659</td>
<td>1.000000</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>*0.3917</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>410</td>
<td>410</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Firm size</td>
<td>-0.158701</td>
<td>-0.269436</td>
<td>1.000000</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>*0.0022</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>410</td>
<td>410</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Firm risk</td>
<td>0.041806</td>
<td>0.006741</td>
<td>-0.054422</td>
<td>1.000000</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>0.4227</td>
<td>0.8972</td>
<td>0.2965</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>410</td>
<td>410</td>
<td>410</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Firm .M. control</td>
<td>0.020288</td>
<td>0.007410</td>
<td>-0.011790</td>
<td>-0.057629</td>
<td>1.000000</td>
<td></td>
</tr>
<tr>
<td></td>
<td>0.6973</td>
<td>0.8870</td>
<td>0.8212</td>
<td>0.2689</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>410</td>
<td>410</td>
<td>410</td>
<td>410</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Capital structure</td>
<td>0.105090</td>
<td>-0.009853</td>
<td>-0.098380</td>
<td>-0.084623</td>
<td>-0.007462</td>
<td>1.000000</td>
</tr>
<tr>
<td></td>
<td>*0.0434</td>
<td>0.8502</td>
<td>*0.0489</td>
<td>*0.0492</td>
<td>0.8862</td>
<td></td>
</tr>
<tr>
<td></td>
<td>410</td>
<td>410</td>
<td>410</td>
<td>410</td>
<td>410</td>
<td>410</td>
</tr>
</tbody>
</table>

* Significant at 5%
On the relationship between profitability and capital structure, the results on the correlation matrix table 4.12 indicate that profitability and debt ratio have a significant and a positive relationship (0.105), which means that the firms which have higher profitability borrow more of debt. This position is supported by the proponents of the trade-off theory who argue that highly profitable firms will use debt to shield away their profits from tax. However, it is against the position taken by pecking order theory that highly profitable firms will result to using more of internal finance. Jensen (2007), looking at Swiss firms predicted a positive relationship. Therefore, the study concluded that highly profitable firms in the insurance companies follow the trade-off theory as opposed to pecking order theory.

On the relationship between growth and capital structure, the results of the correlation matrix table 4.12 also indicate that growth and debt ratio have a negative but insignificant relationship.

On the relationship between size and capital structure, the results indicate that size and debt ratio have a significant negative (-.09838) relationship, which means that the firms which are larger in size borrow less of debt. A few researchers predicted negative relationship between leverage and firm size for-instance Cole (2008) observing German firms, stated that firm size, as measured by the natural logarithm of total assets, was inversely related to firm leverage. However, most researchers found a positive relationship, for-instance, Çağlayan and Şak (2010) showed size was found to have positive relationships with the leverage of banks in this study. The study also found out that the Kenyan insurance companies does not follow any of the two main theories, the pecking or the trade-off but conforms to German environment.

On the relationship between risk and capital structure, the results indicate that risk and debt ratio have a negative significant relationship (-.084623), which means that the firms which have a higher risk borrow less of debt. This study seemed to agree with the position taken by most other researchers, for instance, Pandey (2001) found that there
was a negative relationship of earnings volatility with book and market value long-term debt ratio, which was consistent with the trade-off theory. Drobetz and Fix (2003) found as expected, that leverage was negatively related to the volatility. They also showed that their finding supported both the trade-off theory (more volatile cash flows increase the probability of default) and the pecking order theory (issuing equity is more costly for firms with volatile cash flows). Therefore, the study concluded that local insurance companies followed both the pecking order and the trade-off theories.

4.6. Panel regression analysis

Panel regression analysis was done on the data to determine the influence of the firm specific factors on the capital structure of insurance companies in Kenya. This is a statistical method, widely used in social science, epidemiology, and econometrics, which deals with two-dimensional (cross sectional/times series) panel data, the data is usually collected over time and over the same individuals and then a regression is run over these two dimensions observed Badi (2008). Simple panel data model was used to test the significance of each of the four predictor variables separately and the results obtained were used to determine the significance of each individual variable in predicting the outcome variable.

4.6.1 The influence of profitability on capital structure

To test the influence of firm profitability on capital structure of insurance companies in Kenya, the study used a simple panel regression model with profitability as the independent variable and capital structure as the dependent variable. Model (i) was used to test objective one in chapter one.

\[ Y_{it} = \beta_0 + \beta_1 X_{it} + e_{it} \] \hspace{1cm} (i)

\( Y_{it} \) represents capital structure, \( X_{it} \) represents profitability
Table 4.13: ANOVA test of influence of profitability on capital structure

<table>
<thead>
<tr>
<th>Statistic</th>
<th>Statistic</th>
</tr>
</thead>
<tbody>
<tr>
<td>R – Squared</td>
<td>0.333446</td>
</tr>
<tr>
<td>Adjusted R- squared</td>
<td>0.247632</td>
</tr>
<tr>
<td>S.E. of regression</td>
<td>0.088971</td>
</tr>
<tr>
<td>Sum squared residual</td>
<td>2.643906</td>
</tr>
<tr>
<td>F – Statistic</td>
<td>3.885695</td>
</tr>
<tr>
<td>Prob. (F – statistic)</td>
<td>0.000000</td>
</tr>
</tbody>
</table>

On table 4.13 the regression results indicate that profitability has 0.333446 or approximately 33% explanatory power on capital structure decision of insurance firms as is clearly shown by the coefficient of determination ($R^2$). The analysis of variance (ANOVA) results further indicate that the regression model is significant at (0.01) level of significance and this is clearly shown by the p-value of the F-statistic (0.000000). These two results confirm the model’s fitness as good estimator of the influence of firm profitability on capital structure of insurance companies in Kenya.
Table 4.14: Beta coefficient of firm profitability on capital structure

<table>
<thead>
<tr>
<th>Variable</th>
<th>Coefficient</th>
<th>Std. Error</th>
<th>t-Statistic</th>
<th>Prob.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Constant</td>
<td>0.029901</td>
<td>0.009905</td>
<td>3.018703</td>
<td>0.0027</td>
</tr>
<tr>
<td>Profitability</td>
<td>0.078671</td>
<td>0.029022</td>
<td>2.710690</td>
<td>0.0071</td>
</tr>
</tbody>
</table>

The results on table 4.14 indicate that the beta coefficient of profitability is significant at conventional level of significance; this is shown by the p-value of the t-statistic which is at 0.0071. It is also imperative to note that profitability has positive beta coefficient which shows that profitability has a positive influence on capital structure what this means is that when profitability of an insurance firm increases then the firm is likely to borrow more debt. It was concluded that profitability is a significant variable that influences capital structure decisions in Kenyan insurance companies and therefore, the variable was retained in the final model.

4.6.2 The influence of firm growth on capital structure of insurance companies in Kenya

To test the influence of firm growth on capital structure of insurance companies in Kenya, the study used a simple panel regression model with growth as the independent variable and capital structure as the dependent variable. Model (ii) was used to test objective two in chapter one.

\[ Y_{it} = \beta_0 + \beta_1 X_{it} + e_{it} \]  \hspace{1cm} (ii)

\( Y_{it} \) represents capital structure, \( X_{it} \) represents growth
Table 4.15: ANOVA test of influence of firm growth on capital structure

<table>
<thead>
<tr>
<th>Statistic</th>
<th>Statistic</th>
</tr>
</thead>
<tbody>
<tr>
<td>R – Squared</td>
<td>0.317469</td>
</tr>
<tr>
<td>Adjusted R- squared</td>
<td>0.223685</td>
</tr>
<tr>
<td>S.E. of regression</td>
<td>0.089994</td>
</tr>
<tr>
<td>Sum squared residual</td>
<td>2.705054</td>
</tr>
<tr>
<td>F – Statistic</td>
<td>3.789146</td>
</tr>
<tr>
<td>Prob. (F – statistic)</td>
<td>0.000000</td>
</tr>
</tbody>
</table>

On table 4.15 the study presents regression results of the influence of firm growth on capital structure of insurance companies in Kenya. The results indicate that firm growth has 0.317469 or approximately 32% explanatory power on capital structure of insurance firms as is clearly shown by the coefficient of determination ($R^2$). The analysis of variance (ANOVA) results further indicate that the regression model is significant. This is clearly indicated by probability of the F-statistic (0.000000). These two results indicate the model’s fitness as good estimator of the influence of growth on the capital structure of insurance firms in Kenya.
Table 4.16: Beta coefficient of firm growth on capital structure

<table>
<thead>
<tr>
<th>Variable</th>
<th>Coefficient</th>
<th>Std. Error</th>
<th>t-Statistic</th>
<th>Prob.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Constant</td>
<td>0.040867</td>
<td>0.004675</td>
<td>8.741912</td>
<td>0.0000</td>
</tr>
<tr>
<td>Growth</td>
<td>1.44E-09</td>
<td>3.39E-09</td>
<td>0.424319</td>
<td>0.6716</td>
</tr>
</tbody>
</table>

The results shown on table 4.16 indicate that the beta coefficient of firm growth is not significant at conventional level of significance: this is shown by the p-value of the t-statistic which is at 0.6716. Though the beta coefficient for growth was not significant, the growth variable was retained because the F-statistic of the ANOVA test was significant as shown in table 4.15.

4.6.3 The influence of firm size on capital structure of insurance companies in Kenya

To test the influence of firm size on capital structure of insurance companies in Kenya, the study used a simple panel regression model with firm size as the independent variable and capital structure as the dependent variable. Model (iii) was used to test objective three.

\[ Y_{it} = \beta_0 + \beta_1 X_{it} + e_{it} \ldots \ldots \ldots (iii) \]

\( Y_{it} \) represents capital structure, \( X_{it} \) represents firm size
Table 4.17: ANOVA test of influence of firm size on capital structure

<table>
<thead>
<tr>
<th>Statistic</th>
<th>Statistic</th>
</tr>
</thead>
<tbody>
<tr>
<td>R – Squared</td>
<td>0.356804</td>
</tr>
<tr>
<td>Adjusted R- squared</td>
<td>0.253893</td>
</tr>
<tr>
<td>S.E. of regression</td>
<td>0.088600</td>
</tr>
<tr>
<td>Sum squared residual</td>
<td>2.551257</td>
</tr>
<tr>
<td>F – Statistic</td>
<td>3.467101</td>
</tr>
<tr>
<td>Prob. (F – statistic)</td>
<td>0.000000</td>
</tr>
</tbody>
</table>

On table 4.17 the study presents regression results of the influence of firm size on capital structure of insurance companies in Kenya. The results indicate that firm size has 0.356804 or about 36% explanatory power on capital structure of insurance firms. This is clearly shown by the adjusted $R^2$. The analysis of variance (ANOVA) results further indicate that the regression model is significant at 0.01 level, this is clearly indicated by probability of the F-statistic (0.000000). These two results indicate the model’s fitness as good estimator of the influence of firm size on the capital structure of insurance firms in Kenya.
Table 4.18: Beta coefficient of firm size on capital structure

<table>
<thead>
<tr>
<th>Variable</th>
<th>Coefficient</th>
<th>Std. Error</th>
<th>t-Statistic</th>
<th>Prob.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Constant</td>
<td>-0.092735</td>
<td>0.062310</td>
<td>-1.488271</td>
<td>0.1376</td>
</tr>
<tr>
<td>Firm size</td>
<td>0.013322</td>
<td>0.006265</td>
<td>2.126460</td>
<td>0.0342</td>
</tr>
</tbody>
</table>

The results shown on table 4.18 indicate that the beta coefficient of firm size is significant at conventional level of significance: this is shown by the p-value of the t-statistic which is at 0.0342. It is also imperative to note that firm growth has positive beta coefficient (0.013322), this suggests that large size firms are less likely to use leverage for financing their investments than firms with small firms. The study concluded that firm size is a significant variable that influences capital structure decisions of insurance companies in Kenya and therefore, the variable was retained in the final model.

### 4.6.4 The influence of firm risk on capital structure of insurance companies in Kenya

To test the influence of firm risk on capital structure of insurance companies in Kenya, the study used a simple panel regression model with firm risk as the independent variable and capital structure as the dependent variable. Model (iv) was used to test objective four in chapter one.

\[
Y_{it} = \beta_0 + \beta_1 X_{it} + e_{it} \quad \cdots \cdots \cdots \cdots (iv)
\]

\(Y_{it}\) represents capital structure, \(X_{it}\) represents firm risk.
On table 4.19, the regression results indicate that firm risk has 0.362664 or approximately 36% explanatory power on capital structure of insurance firms as is clearly shown by the coefficient of determination ($R^2$). The analysis of variance (ANOVA) results further indicate that the regression model is significant at (0.01) level; this is clearly indicated by probability of the F-statistic (0.000000). These two results indicate the model’s fitness as good estimator of the influence of firm risk on the capital structure of insurance firms in Kenya.
Table 4.20: Beta coefficient of firm risk on capital structure

<table>
<thead>
<tr>
<th>Variable</th>
<th>Coefficient</th>
<th>Std. Error</th>
<th>t-Statistic</th>
<th>Prob.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Constant</td>
<td>0.031926</td>
<td>0.011060</td>
<td>2.886625</td>
<td>0.0042</td>
</tr>
<tr>
<td>Firm risk</td>
<td>0.112322</td>
<td>0.007896</td>
<td>2.310795</td>
<td>0.0429</td>
</tr>
</tbody>
</table>

The regression results shown on table 4.20 indicate that the beta coefficient of firm risk is significant at conventional (0.05) level of significance: this is shown by the p-value of the t-statistic which is at 0.0429; this means that firm risk does have significant influence on capital structure. It is also imperative to note that firm growth has positive beta coefficient though very small (0.112322), this suggests that highly risky firms are more likely to use leverage to finance their investments than firms with small firms. From these results the study concluded that firm risk is a significant variable that influences capital structure decisions of the insurance companies in Kenya and therefore, the variable was retained.

4.6.5 The moderating effect of firm management control on capital structure of insurance companies in Kenya

To test the moderating effect of the firm management control on the influence of firm specific factors on capital structure of insurance companies in Kenya, the study conducted two levels of regression analysis: the first regression analysis was done without moderation of the firm management control and the second regression analysis was done with the moderating variable included. The study then computed change statistics to determine the moderating influence of the firm management control on the influence of firm specific factors on capital structure of insurance companies in Kenya.

From the results of the simple regression models used to test individual variable’s influence on capital structure, the study concluded that out of the four independent variables in the original model three were significant firm profitability, firm size and
firm risk. Growth was found to be insignificant and was therefore, dropped. The final panel regression model of insurance companies in Kenya after growth was dropped had three independent variables firm profitability, firm size and firm risk.

\[ Y_{it} = \beta_0 + \beta_1 X_{1it} + \beta_2 X_{2it} + \beta_3 X_{3it} + \beta_4 X_{4it} + e_{it} \]

\( X_1 \) - Represents profitability, \( X_2 \) – represents firm growth, \( X_3 \) - represents firm size, \( X_4 \) - represents firm risk

**Table 4.21: ANOVA and model fitness test results without moderation**

<table>
<thead>
<tr>
<th>Statistic</th>
<th>Statistic</th>
</tr>
</thead>
<tbody>
<tr>
<td>R – Squared</td>
<td>0.579371</td>
</tr>
<tr>
<td>Adjusted R- squared</td>
<td>0.495492</td>
</tr>
<tr>
<td>S.E. of regression</td>
<td>0.098138</td>
</tr>
<tr>
<td>Sum squared residual</td>
<td>2.705054</td>
</tr>
<tr>
<td>F – Statistic</td>
<td>7.789146</td>
</tr>
<tr>
<td>Prob. (F – statistic)</td>
<td>0.000000</td>
</tr>
</tbody>
</table>

On table 4.21 the regression results indicate that all the factors combined have 0.579371 or 58% explanatory power on capital structure of insurance firms this is clearly shown by the coefficient of determination \((R^2)\). This low explanatory power is expected because there are many other factors listed by the theories as important that have not been included in the model like asset tangibility, liquidity, industry level factors and macro level factors. The analysis of variance (ANOVA) results further indicate that the regression model is significant at 0.01 level, this is clearly indicated by probability of the F-statistic (0.000000). These two results indicate the model’s fitness as good estimator of the influence of firm specific factors on the capital structure of insurance firms in Kenya.
The results on table 4.22 indicate that the beta coefficients of profitability, firm size and firm risk are significant at conventional level of significance: this is shown by the p-values of the t-statistics of the two variables which are at 0.0037 for profitability, 0.0084 for size and 0.0344 for firm risk. This means that profitability, firm size and firm risk exert significant influence on capital structure decisions of insurance companies in Kenya; Firm profitability, size and firm risk have positive beta coefficients implying that large size, highly risky firms. However, the beta coefficient for firm growth was no significant, as indicated by the p-value (0.4518) which is higher than 0.05 and therefore, firm growth was dropped from the optimal model.

\textbf{H}_01: \textbf{There is no significant influence of firm profitability on capital structure of insurance companies in Kenya}

The results on table 4.22 indicate that the beta coefficient of profitability is significant at conventional level of significance; this is shown by the p-value of the t-statistic which is at 0.0037. It is also imperative to note that profitability has positive beta coefficient which shows that profitability has a positive influence on capital structure what this means is that when profitability of an insurance firm increases then the firm is likely to borrow more debt, this position is supported by the proponents of the trade-off theory

<table>
<thead>
<tr>
<th>Variable</th>
<th>Coefficient</th>
<th>Std. Error</th>
<th>t-Statistic</th>
<th>Prob.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Constant</td>
<td>-0.142705</td>
<td>0.065042</td>
<td>-2.194039</td>
<td>0.0290</td>
</tr>
<tr>
<td>Firm Profitability</td>
<td>0.087909</td>
<td>0.030062</td>
<td>2.924234</td>
<td>0.0037</td>
</tr>
<tr>
<td>Firm growth</td>
<td>1.22E-09</td>
<td>3.12E-09</td>
<td>0.324318</td>
<td>0.4518</td>
</tr>
<tr>
<td>Firm size</td>
<td>0.017156</td>
<td>0.006472</td>
<td>2.650853</td>
<td>0.0084</td>
</tr>
<tr>
<td>Firm risk</td>
<td>0.013355</td>
<td>0.006406</td>
<td>2.136142</td>
<td>0.0344</td>
</tr>
</tbody>
</table>
who argue that highly profitable firms will tend use debt to shield away their profits from tax.

The results of this study disagreed with the position of the proponents of the pecking order theory. The pecking order theory, based on works by Myers and Majluf (1984) suggests that firms have a pecking-order in the choice of financing of their activities. Roughly, this theory states that firms prefer internal funds rather than external funds. All things being equal, the more profitable the firms are, the more internal financing they will have, and therefore we should expect a negative relationship between leverage and profitability. Meanwhile, based on agency theory, there are two possible explanations. Jensen (1986) predicted a positive relationship between profitability and financial leverage, if the market for corporate control was effective, such relation occurred because debt reduced the free cash flow generated by profitability. However, if it was ineffective, Jensen (1986) predicted a negative relationship between profitability and leverage.

The results of this study are supported by many past empirical researchers in both developed and developing countries who observed positive relationship between profitability and capital structure: Gill et al. (2011) seeks to extend Abor’s (2005) findings regarding the effect of capital structure on profitability by examining the effect of capital structure on profitability of the American service and manufacturing firms. A sample of 272 American firms listed on New York Stock Exchange for a period of 3 years from 2005 – 2007 was selected. The correlations and regression analyses were used to estimate the functions relating to profitability (measured by return on equity) with measures of capital structure. Empirical results show a positive relationship between short-term debt to total assets and profitability and between total debt to total assets and profitability in the service industry. The findings of this paper show also a positive relationship between short-term debt to total assets and profitability, long-term debt to total assets and profitability, and between total debt to total assets and profitability in the manufacturing industry. Though the results of Gill et al. (2011)
concur with the findings of this study as regards the influence of profitability on capital structure it is important to note that the two studies differed significantly in their methodology Gill used a sample of 272 American firms listed on New York Stock Exchange for a period of 3 years from 2005 – 2007. While this study used a sample of 41 insurance firms, that were studied for a period of 10 years from 2003 – 2012. However, the two studies used correlation and panel regression analysis to determine the influence of profitability on capital structure. Finally it is also worth to note that Gill conducted his study in the developed world while this study was done in the developing world which means that even in the developing world there is increasing awareness that debt is a cheap source of finance to firms.

Abor (2005) investigated the relationship between the capital structure and profitability of listed firms on Ghana Stock Exchange (GSE). Data was taken for this study between 1998 and 2002. Twenty-five listed firms qualified for this study. Regression analysis methodology was used in the assessment of functions involving the return on equity (ROE) as a proxy for profitability and short-term debt, long-term debt and total debt ratio were used to measure capital structure. The result of the research is that capital structure is related to the marketing, because different firms issue different securities in many different combinations, which maximize the market value. Huge return and profitable firms always use more short-term debt. Short term debt is an important part of total debt, and usually firms use 85% of short-term loan against long-term debt. Long-term debt and return on equity have negative relationship; total debt and return on equity are positively related. Abor (2005) study and this research were both conducted in Africa which is part of the developing world. The two studies used regression analysis to test the relationship between profitability and capital structure; they observed similar findings on the relationship between total debt ratio and capital structure and also used similar proxy for profitability (ROE). However it is important to note that Abor used a twenty five listed firms and a study period of 4 years while this study used 41 firms in the insurance companies.
Nguyen, (2014) used quantitative research design, which is a combination of deductive approach, quantitative method and experimental research in his study of Finish technology firms. It is important to note that Nguyen conducted his study in a developed world but used similar research methods as used in this study. The data on Finish technology firms was collected from both primary and secondary sources this was also the case for this study. The primary source is mainly the financial reports of 17 Finish technology firms during the period of 2008 - 2012. Meanwhile, the secondary source is obtained from books and journals. This study used financial reports collected from Insurance Regulatory Authority and specific company websites for the financial period between 2003 and 2012 of the 41 insurance firms. The finding statistically confirms the positive relationship between the firm’s profitability and its capital structure.

This study also contradicted the results filed by many other empirical researchers who observed a negative relationship between profitability and capital structure: Mendell et al. (2006) investigated financing practices across firms in the forest products industry by studying the relationship between debt and taxes hypothesized in finance theory. In testing the theoretical relationship between profitability and capital structure for 20 publicly traded forest industry firms for the years 1994-2003, using panel data methodology, the study established a negative relationship between profitability and debt, thus supporting the position held by the proponents of pecking order theory. It is worth noting that the study by Mendell used a small sample of 20 firms in the forest industry which is different from the one studied in this research. The fact that the two studies were done in two different industries could be the main cause of the different research findings.

Chen et al. (2009) studied the insurance companies of Taiwan, to know the relationship among profitability, operational risk, and capital structure. Factor analysis and path analysis methodologies were used to examine correlation among the capital structure, operational risk, and profitability. A sample of listed insurance companies in Taiwan was also taken. The result of the research was that firms’ values are not related with
capital structure, a close relationship was shown among operational risk, profitability and capital structure. Capital structure is negatively related with profitability if equity ratio increases or reserve-to-liability ratio decreases which result in higher profits. The results of Chen et al. (2009) differed with the findings of this study may be because Chen used different research methodology. It is also imperative to note that Chen observed listed insurance firms in Taiwan which is part of the developed world.

Eriotis et al. (2000) investigated the relationship between debt-equity ratio and firm's profitability. In the study, the level of the firm in investment and its degree of market power was observed. The facts and figures of various industries of 1995-96 were taken into study. It was observed through the study that the financial structure plays a key role in a firm's profitability. A firm's profitability depends on debt-to-equity ratio. The debt-to-equity ratio varies from firm to firm. It is the selection of debt-to-equity ratio which makes successful financial strategy and for this purpose, some firms choose a high rate equity ratio and the others depend on lower rate equity ratio. It was observed from the study of various industries that debt-to-equity ratio has a negative relationship with a firm's profitability. The study further revealed that the firms that finance their investment on their equity entertain much profit in comparison to the firms that finance their activities through borrowed capital. The results of Eriotis et al. (2000) were radically different from those filed by this study possibly because firms drawn from different industries were used while this research observed firms from insurance companies only. The methodologies used by the two studies were different, with Eriotis using multiple regression analysis of data for one financial year while this study used panel data for 10 year period.

Ebaid (2009) studied the relationship between the different debt-equity combinations with company's performance. Multiple regression technique was used to find out the impact of debt policy on a company's performance. Findings of the study reveal that both short-term debt and total debt are negatively related by return on assets. Capital structure including total debt (TTD) is not significantly related with Return on Equity.
and Gross profit margin (ROE and ROA). Findings of the study reveal that ROA and firm performance are negatively related. Though the study by Ebaid (2009) used similar proxies for both profitability and capital structure, Ebaid used one financial year data while this study used 10 years panel data. It is the study’s opinion that the differences in the methodologies used could explain the differences in the findings of the two studies.

Serrasqueiro and Marcia (2009) conducted a study to analyze the company capital structure. In the study, the result of Portuguese companies is examined which shows a negative and statistically significant relationship between the profitability of listed Portuguese companies and their level of debt. The results of the study further show that there is great influence of tangibility of assets, size and profitability on the structure of Portuguese companies. Findings of the study suggest that most firms rely on internal source of financing or bank debt to fulfil their financing needs in less developed capital markets. The study by Serrasqueiro and Marcia (2009) though seemingly share similar objectives with this research was done in developed world while this study was done in a developing country. This difference of environments could be responsible for the different findings by the two studies.

Madan (2007) investigated the relationship between the capital structure and the overall performance of Indian firms and also assessed the capital structure. Study further assessed how different debt-equity combinations play an important part in a firm's overall performance and expansion. The findings revealed that both lower and higher gearing ratios are not enviable for the firms. Companies which operate at break-even point also use debt in capital structure to insure the profits. Indian firms use 30/70 or 40/60 percent of debt and equity combination, other need is fulfilled through the reserves, capital and surplus. The findings of Madan (2007) found slightly higher gearing for Indian firms which are in contrast with the Kenyan insurance firms with a total debt ratio on average of 24% this could be because of different environment. India has a more developed bond market than Kenya.
It is also important to note that this study agreed with majority of the studies on the best methodology for the study including the proxies used to measure the variables. However, it is imperative to note that majority of other studies covered only the listed firms in various Security Exchange markets while this study covered the whole insurance companies in Kenya. A study conducted by Capon et al. (1990) reviewed 320 empirical studies (165 in economics and industrial organization literature, and 155 in the management literature) published between 1921 and 2007 used panel data methodology and the meta-analytical technique to summarize the statistical results in the literature on industry, firm, and business performance. This study revealed that the types of measures used to capture return on investment included return on equity, return on capital, return on assets, return on sales, and earnings before interest and taxes (EBIT). These returns represent the profitability measures to assess the firm’s profitability.

**H02: There is no significant influence of firm growth on capital structure of insurance companies in Kenya.**

The results on table 4.22 indicate that the beta coefficient of firm growth is not significant at conventional level of significance; this is shown by the p-value of the t-statistic which is at 0.4518. It is also imperative to note that firm growth has positive beta coefficient which shows that firm growth has a positive influence on capital structure what this means is that growing insurance firms are likely to borrow more debt, this position is supported by both the proponents of the trade-off theory and the pecking order theory.

According to the pecking order theory hypothesis, a firm will use first internally generated funds which may not be sufficient for a growing firm. The next option for the growing firms is to use debt financing which implies that a growing firm will have a high leverage (Drobetz & Fix, 2003). Applying pecking order arguments, growing firms place a greater demand on the internally generated funds of the firm. Consequently, firms with relatively high growth will tend to issue less security subject to information
asymmetries, i.e. short-term debt. This should lead to firms with relatively higher growth having more leverage.

The same relationship is supported by the trade-off theory, too. According to this theory, growth causes firms to shift financing from new equity to debt, as they need more funds to reduce the agency problem. Following the trade-off theory, for companies with growth opportunities, the use of debt is limited as in the case of bankruptcy, the value of growth opportunities will be close to zero. Growth opportunities are a particular case of intangible assets (Myers, 1984; Williamson, 1988; Harris & Raviv, 1990).

Theoretically, growth opportunity negatively relates with the firm’s capital structure. Particularly, growth rate indicates a high equity financing and a low debt financing. On the one hand, firms with low, negative growth rate, tend to employ debt to limit agency costs of managerial discretion and discipline the firm’s managerial attitudes (Jensen, 1986). On the other hand, using leverage means increasing the debt’s agency cost. This cost causes two issues. Firstly, it increases the overall cost of capital, and secondly, it transfers the wealth from stockholders to debtholders since the stockholders bear this agency cost. Therefore, high-growth firms may not issue debt to pursue their investments, particularly the firms with high leverage (Myer, 1977).

This theoretical assumption is supported by many empirical works (Booth et al., 2001; Kim & Sorensen, 1986; Rajan & Zingales 1995; Wald, 1999). However, there are several dissents. Notably, Kester proves the opposite direction (Kester, 1986). Different conclusions partly may result from different proxies employed to examine the growth rate. Growth opportunity’s definition can be as a five-year average of sales growth (Wald, 1999), market-to-book ration of equity (Booth et al., 2001).

Nguyen (2014) in his study aimed to examine the validity of five chosen determinants selected by the author, namely, growth rate, firm’s size, profitability, liquidity and interest coverage capability, within the scope of Finnish technology firms. The firms
which are listed in the technology sector index in OMX Helsinki Stock Exchange are selected as the object of the research. The study employed the quantitative research design, which is a combination of deductive approach, quantitative method and experimental research. The data was collected from both primary and secondary sources. The primary source is mainly the financial reports of 17 firms during the period of 2008-2012. Meanwhile, the secondary source is obtained from books and journals. The finding statistically confirmed a positively insignificant relationship between growth rate and capital structure. The findings of this agree with Nguyen (2014) in his observation of Finnish technology firms that growth has a positive and insignificant influence on capital structure, the two studies happen to agree even though they were done in different environments.

Fareed (2014) investigated the effect of firm specific factors on capital structure decision (leverage) for a sample of 19 firms of power and energy sector of Pakistan. The secondary data was extracted from the “Balance sheet analysis” for the period of 2001-2012 of the 19 firms which are listed on Karachi stock exchange. Generalized least square method, correlation analysis are employed on panel data and results revealed that firm growth was positively related with leverage and significant. This research disagrees with the results of Fareed (2014), this is because Fareed used a smaller sample and the fact that all the firms studied are quoted in Karachi stock exchange, while the insurance companies in Kenya comprises of firms that are not quoted in the Nairobi security exchange.

Rafiq et al. (2008) conducted research on determinants of capital structure in chemical sector of Pakistan. They used panel data for the period of 12 years from 1993 to 2004 and found that growth is a significant factor of capital structure in chemical sector of Pakistan. Ilyas (2007) using panel data methodology conducted research in Pakistan on capital structure of listed firms and established that growth had a negative relationship with leverage. He also found positive relationship between non-debt tax shield and leverage but capital structure have negative relationship with leverage. This research
happen to disagree with results of Rafiq et al. (2008) done listed chemical firms in Pakistan which found growth to have a significant relationship with capital structure. However it is imperative to note that the two studies done on listed firms in Pakistan though in different sector have returned similar results fareed (2014) observing energy firms and Rafiq et al. (2008) observing chemical firms.

Jorgensen and Terra (2002) investigated the determinants of capital structure in seven Latin American Countries. In their analysis, the effect of tangibility, size, profitability, growth opportunities, tax, and business risk were analyzed in each country. In addition, the effects of macroeconomic (GDP growth, inflation, real interest rate, and real stock returns) and institutional factors were investigated using pooled regression. In relation to growth opportunities, empirical evidence from their research offered more support for a positive relationship when book value leverages were used, but the sign of the relationship turned negative when market value leverage was used. This research agrees with the results of Jorgensen and Terra (2002) that growth has positive relationship with capital structure when book values are used to value growth opportunities and capital structure. This could be attributed to the fact both areas are in the developing world.

Gurcharan (2010) analyzed the determinants of capital structure in four selected ASIAN 4 countries, namely Malaysia, Indonesia, Philippine, and Thailand. The effect of non-debt tax shield, profitability, size and growth opportunities on capital structure decisions were examined in that work in addition to country-specific factors such as the stock market size, development of banking sector, GDP growth rate and inflation. The result for firm specific factors revealed that profitability and growth opportunities were negatively correlated with the market debt to total assets ratio in all countries, but was statistically significant for three of the countries. Non-debt tax shield negatively affected the stated leverage ratio, but was statistically significant in only one country. The results of the selected ASEAN countries disagree with the position taken by this research; this could be attributed to the fact ASEAN countries are more developed than Kenya.
Ngugi (2008) studied capital financing behaviour of listed firms on the Nairobi Stock Exchange (NSE). The study used a sample of 22 firms for the period 1990 to 1999 and using modified static trade-off and pecking order models, the study found that the main determinants of capital financing behaviour of listed firms in Kenya are information asymmetry, non-debt tax shields and local capital market infrastructure. However, a similar study conducted by Nyang’oro (2003) based on a sample of 20 listed non-financial firms for the period 1993-2001 produced contradicting results. Growth opportunities were found to be significant in explaining the capital structure of the firms investigated. The results of this research seem to agree with Ngugi (2008), in his research on listed firms in Kenya, but disagrees with Nyang’oro (2003), who observed listed non-financial firms in Kenya, who observed that growth is a significant variable of capital structure. This research provides evidence of insignificant relationship, probably because most of the firms in the insurance companies are not listed in the Nairobi security exchange.

Abor and Biekpe (2005) conducted a study on the determinants of capital structure of listed firms, large unlisted firms and small and medium enterprises (SME) in Ghana using panel data analysis for the period 1998-2003. They found that listed and large unlisted firms had higher debt ratios as compared to SMEs. The results further showed that total debt constituted more than 50% of the capital structure of the sampled firms. The study also found that growth was insignificant in influencing decisions on capital structure in Ghana. This research seems to agree with Abor and Biekpe (2005) who observed both listed and non-listed firms in Ghana. This could be attributed to the fact that both are developing countries and also the fact that both studies observed both listed and non-listed firms.

De jong et al. (2008) analyzed the direct and indirect impacts of firm-specific and macroeconomic factors on capital structure for a number of firms from 42 developed and developing countries. They found that tangibility and firm’s size in half of the countries had a positive effect on long-term debt ratios at market value, whereas growth
opportunities and profitability had a negative effect. This research happen to disagree with the results of De jong et al. (2008) because of the huge sample that was used to cover 42 countries while this research only studied Kenyan insurance companies.

Finally it important to observe that different environments, countries and sectors observed by different scholars filed contrasting results with majority of researchers studying developing countries filing similar results with the results of this research.

**H\textsubscript{03}. There is no significant influence of firm size on capital structure of insurance companies in Kenya.**

The results shown on table 4.22 indicate that the beta coefficient of firm size is significant at conventional level of significance: this is shown by the p-value of the t-statistic which is at 0.0084. It is also imperative to note that firm size has positive beta coefficient (0.017156), this suggests that large size firms are more likely to use leverage for financing their investments than small firms. This tends to favour the position taken by the proponents of the trade-off theory. The trade-off theory is generally interpreted as predicting that large firms will have more debt since larger firms are more diversified and have lower default risk. Larger firms are also typically more mature firms. These firms have a reputation in debt markets and consequently face lower agency costs of debt. Hence, the trade-off theory predicts that leverage and firm size should be positively related. The pecking order theory is usually interpreted as predicting an inverse relationship between leverage and firm size. The argument is that large firms have been around longer and are better known. Thus, large firms face lower adverse selection and can more easily issue equity compared to small firms where adverse selection problems are severe. Large firms also have more assets and thus the adverse selection may be more important if it impinges on a larger base.

Empirical studies done in both developed countries and developing countries also happen to agree with the results of this study that size is a significant factor in
determining capital structure decisions and also that size has a positive influence on capital structure i.e. Hung et al. (2002) investigated the inter-relationship between firm specific characteristics and capital structure. The study comprised all financial firms in Hong Kong. Regression analysis was applied on panel data to get the results. The results showed that capital structure is positively related with log of assets and have negative relationship with profitability. This particular observation was found to be consistent with the trade-off theory and pecking order theory. The study of Hung et al. (2002) was done in developed world (Hong Kong), while this study was done in a developing country. However, the two studies were done on financial firms and the objectives were almost similar firm specific variables and both used panel data in their methodologies. Both studies observed similar results despite having been done in different Environments. This simply means that Kenyan insurance companies and Hong Kong financial firms follow both the trade-off and the pecking order theory.

Raheman et al. (2007) found a significant capital structure relationship with firm size for non-financial firms listed on Islamabad Stock Exchange. The study population included all the listed non-financial firms, the study used multiple regression analysis and correlation analysis to measure the relationship between firm size and capital structure. The results obtained indicated a positive relationship between firm size and capital structure. These results are consistent with the proposition of the trade-off theory. The study of Raheman et al. (2007) was done in Pakistan and non-financial firms, while this study was done on Kenyan insurance companies. Both studies used correlation and regression analysis to analyse the influence of firm size on capital structure and their findings were found to be similar; a positive relationship between firm size and capital structure. This means both cases follow the trade-off and the pecking order.

Strebulaev (2005) studied Russian firms using panel data methodology and found out that Firm size is strongly positively related to capital structure. A number of intuitive explanations can be put forward to account for this stylized fact, but none have been considered theoretically. The analysis of dynamic economy demonstrates that in cross-
section, the relationship between leverage and size is positive and thus fixed costs of financing contribute to the explanation of the stylized size-leverage relationship. However, the relationship changes the sign when we control for the presence of unlevered firms. This study used the same methodology with Strebulaev (2005) study which was done on Russian firms and the findings were also similar.

Anila (2013) attempted to explore the impact of firm specific factors on capital structure decision for a sample of 65 non-listed firms, which operate in Albania over the period 2008-2011. In this paper are used three capital structure measures, short-term debt to total assets (STDA), long-term debt to total assets (LTDA) and total debt to total assets (TDTA) as dependent variables and four dependent variables: tangibility (TANG), liquidity (LIQ), profitability (ROA=return on assets) and size (SIZE). The investigation used panel data procedure and the data was taken from balance sheets and included only accounting measures on the firm’s leverage. This study found that size (natural logarithm of total assets) has a significant impact on leverage. Also empirical evidence revealed a significant positive relation of SIZE to leverage. Results revealed that long term debt to total assets and total debt to total assets ratios are significantly different across Albanian industries. The study by Anila (2013) was very similar to this study in many respects in that the same proxies were used for both independent and dependent variable and also used panel data procedure and panel regression. However, there were significant differences in the methodologies used: Anilla used a much larger sample and also used a shorter study period 4 years. The study was done in Eastern Europe in developing country and the results were similar to the results of this study meaning that Kenyan insurance companies and Albanian non-listed firms both follow trade-off and pecking order predictions.

Fareed (2014) study investigated the effect of firm specific factors on capital structure decision (leverage) for a sample of 19 firms of power and energy sector of Pakistan. The secondary data is extracted from the “Balance sheet analysis” for the period of 2001-2012 of the 19 firms which are listed on the Karachi stock exchange. Generalized least
square method, correlation analysis were employed on panel data and results revealed that Firm size and firm growth are both positively related with leverage and also significant. Our results also show that large firms do long term financing through debt as compared to small firms of power and energy sector. Though both this study and the study of Fareed (2014) filed similar results were done in different industries and different countries but are both developing. They both used panel data methodology and found similar findings on the relationship between firm size and capital structure. However there some significant differences in the methodology Fareed used a smaller sample restricted to the listed firms and his study period was 12 years.

However, some empirical studies disagreed with the findings of this study, the observed a negative relationship between firm size and capital structure. For instance Ramalho and Silva (2009), using regression analysis, established the empirical evidence based on large firms and found that conditional on having debt, firm size is negatively related to the proportion of long-term debt in capital structure of Portuguese SMEs. They divided the sample into micro, small, medium and large firms and found that the relationship between leverage and firm size is statistically significant and negative for small and medium non-zero leverage firms. The study by Silva (2009) was done in a different sector the SMEs while this study focused on insurance companies. Silva also conducted his study in a developed world. SMEs world over operate in a less regulated environment and therefore it could remain unpredictable and therefore this fact could be responsible for the different results.

Strebulaev and Kurshev (2006) argued that the results of a positive relationship between leverage and firm size may be contaminated by the presence of zero-leverage firms, which are also the smallest in terms of size. They find that, controlling for unlevered firms, the relationship between firm size and leverage becomes slightly but significantly negative. This study was done in Russia. Strebulaev and Kurshev (2006) provided a theoretical clarification for the opposite effects of firm size on leverage. Due to fixed costs of external financing, smaller firms choose to refinance less frequently than larger
firms because they are more affected by these fixed costs in relative terms. Hence, small firms choose to operate at a higher leverage level at a refinancing moment to compensate for less frequent rebalancing. This argument explains why smaller firms, if they have some debt, are more levered than larger firms. In addition, as the time period between restructurings is longer for small firms, on average, they have lower leverage ratios. This Serrasqueiro and Marcia (2009) using panel data methodology, conducted a study to analyze the company capital structure. In the study the result of Portuguese companies is examined which shows a negative and statistically significant relationship between the firm size of listed Portuguese companies and their level of debt. The results of the study further show that there is great influence of tangibility of assets and profitability on the structure of Portuguese companies. Findings of the study suggest that most firms rely on internal source of financing or bank debt to fulfil their financing needs in less developed capital markets. Serrasqueiro and Marcia (2009) used the same methodology as this study panel data methodology but Serrasqueiro and Marcia conducted the study in Portugal which is a developed country and therefore differences in the environments where the two studies were conducted could be the reason behind the contrasting results.

Gleason et al. (2000), using panel data from retailers in 14 European countries, which are grouped into 4 cultural clusters, it is shown that capital structures for retailers vary by cultural clusters. This result holds in the presence of control variables. Using logarithms of total assets as an absolute measure of firm size, it is shown that capital structure influences firm size, although not exclusively. A negative relationship between capital structure and firm size suggests that large firms tend to borrow less. This is inconsistent with the position held by the trade-off theory that suggests high leverage for large firms. Gleason et al. (2000) study also returned contrasting to this study this could be attributed to the fact that Gleason conducted his study in the developed world Europe while this study was done in Kenyan insurance companies. However the two studies used similar methodology for instance they used logarithms of total assets.
Finally, observation is made that all the studies done on the relationship between capital structure and size happen to use a common methodology (panel data), and there is a consensus that the main proxies used to measure size are logarithms of total assets, size of equity, and total sales. To measure size, sales are considered a sound measure (Muema, 2013). So the natural logarithm of sales is taken to measure the size as used in some previous studies. Myers and Majluf (1984), Turere (2012) and Muema (2013) used the same measure.

$H_{04}$: There is no significant influence of firm risk on capital structure of insurance companies in Kenya.

The regression results shown on table 4.22 indicate that the beta coefficient of firm risk is significant at conventional (0.05) level of significance: this is shown by the p-value of the t-statistic which is at 0.0344; this means that firm risk does have significant influence on capital structure. It is also imperative to note that firm growth has positive beta coefficient though very small (0.13355), this suggests that highly risky firms are more likely to use leverage to finance their investments than firms with small firms. From these results the study concluded that firm risk is a significant variable that influences capital structure decisions of the insurance companies in Kenya and therefore. The results of this study were found to contradict the predictions of both the trade-off and the pecking order theories.

According to pecking order theory and the trade-off theory, earnings volatility is considered to be either the inherent business risk in the operations of a firm or a result of inefficient management practices. In either case, earnings volatility is proxy for the probability of financial distress and the firm will have to pay risk premium to outside fund providers. To reduce the cost of capital, a firm will first use internally generated funds and then outsider funds. This suggests that earnings volatility is negatively related with leverage. This is the combined prediction of the trade-off theory and pecking order theory. According to pecking order theory and the trade-off theory, income variability is
a measure of business risk. Since higher variability in earnings indicates that the probability of bankruptcy increases, we can expect that firms with higher income variability have lower leverage. Therefore, the trade-off model allows the same prediction, but the reasoning is slightly different. More volatile cash flows increase the probability of default, implying a negative relationship between leverage and volatility of cash flows. As expected, the relationship between leverage and volatility is negative. This supports both the trade-off theory (more volatile cash flows increase the probability of default) and the pecking order theory (issuing equity is more costly for firms with volatile cash flows).

The findings of this study were supported by other empirical studies who observed a positive relationship firm risk and capital structure. For instance, Jacques and Nigro (1997) studied the relationship between changes in capital and changes in risk taking in the US subsequent to the adoption of Basel Committee’s minimum capital regulation in 1991. They found increases in book capital ratios and decreases in risk exposure consistent with the findings of Shrieveres and Dahl, Bichsel and Blum (2002) conducted a similar analysis of non-US banks. Using panel data methodology and regression analysis, their study of Swiss banks provides strong evidence in favor of a positive relationship during the period of 1990-2002. It is imperative to note that the studies were made in the developed world on American firms and Swiss banks they both returned similar results. They used panel data methodology and twelve year period.

Halov (2009) using panel data methodology, established that the volatility of risk is an important factor in explaining capital structure choices of firms. This effect is over and above the traditional determinants of capital structure such as the current level of risk, size, market-to-book ratio, tangibility of assets and profitability. The study shows that both (1) the fraction of debt in total new external financing raised by the firm, and (2) the long term debt as a fraction of the assets of the firm, are decreasing in the volatility of risk of the firm. Moreover, this negative relationship is significantly stronger for firms that do not have a credit rating. These results are consistent with the theoretical reasons

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that we provide to explain the negative relationship between leverage and volatility of earnings. Halov (2009) study used similar methodology with this study but had slightly different objectives. However, the Halov conducted his study in Eastern Europe while this study was conducted in Kenya. It is this researcher’s opinion that the differences in the research findings is due to the fact the two studies were done in different environments.

Floquet and Biekpe (2009) study was an attempt to identify the nature of the relationship between capital structure and risk-taking in emerging market financial firms. A three-stage least squares (3SLS) method of estimation was applied to a modified version of the capital model developed by Shriever and Dahl and a modified version of Kwan and Eisenbeis’ efficiency model. The relationship between changes in capital structure and risk and absolute levels of capital and risk are examined for 2940 financial firms across 44 emerging market countries for the period of 1995 to 2003. Results show that no significant relationship exists between changes in capital and changes in risk, contrary to the positive relationship presented by developed market empirical evidence. A positive relationship between the absolute levels of capital and risk is, however, identified amongst emerging market financial firms. The evidence suggests that emerging market financial firms do not align capital and risk positively in the short term, but are able to make this alignment in the longer term. Floquet and Biekpe (2009) study used very big sample and also covered 44 emerging market countries in a period of 8 years. However both studies looked at financial firms. The results concurred with the findings of this study that risk had a positive relationship with capital structure, it is imperative to note that the studies were done in developing world in and other emerging markets and hence the similar findings.

Calem and Rob (1996) developed a dynamic model of a banking firm subject to moral hazard, using US bank empirical data for the years 1984 to 1993 and found a ‘U-shaped’ relationship between changes in capital and changes in risk-taking. This is explained by the fact that well-capitalized financial firms invest in high-risk assets; less well-
capitalized financial firms pursue a more conservative risk approach, while poorly capitalized financial firms attempt to maximize risk-taking. Iwatsubo (2003) supports this view with evidence of a significant non-linear relationship between capital ratio and risk for Japanese financial firms. Both studies Calem and Rob (1996) and Iwatsubo (2003) done in developed countries found a non-linear relationship between risk and capital structure. This position is different from the results observed in the Kenyan insurance companies and also in other developing countries but happen to Agree with the results of studies done in other developed countries like the case of Halov (2009).

However, some empirical studies disagreed with the findings of this study and observed negative relationship between firm risk and capital structure. For instance, Raiyani (2011) in his study of the impact of financial risk on capital structure decisions in selected Indian industries, used definition of capital structure in scope of book value to market value and measures were assumed for financial performance. The research applied panel data of 59 companies listed on Stock Exchange of India in a 10-year time horizon (1997-2007). The data was collected from secondary sources. Industries of the study were selected based on ten years' data availability and if the total assets value of the company were more than Rs. 100 crores, the statistical tools used for analyzing them vary from general descriptive analysis such as Mean, Standard Deviation, Coefficient of Variation, Compound Growth Rate to Linear Growth Rate. Also, parametric t-test for ascertaining the level of significance of both compound and linear growth rates and one way analysis of variance, simply called F-test across selected industry sectors were also used. Results of the study demonstrated that finance risk variables, particularly risk followed by volatility in ROE have significant effect on determining the additional variation in use of debt financing in business through long-term sources among firms. The study by Raiyani (2011) used applied a similar methodology with this study (panel data methodology) the period of the study was 11 years. However, Raiyani used a larger sample of 59 firms that was restricted to listed companies in India. Similar proxies were used to measure both risk and capital structure but the findings were different. This
study attributes the differences in the findings to the fact that India has more developed capital markets and hence information asymmetry is a lot reduced.

Kumars (2009) studied the impact of risk on capital structure of listed firms in Iran stock exchange. The study was an attempt to establish whether the firm risk impacts capital structure decisions. The research used 2 definitions, solvency ratio and operating income standard deviation, as measures of firm risk. The study applied panel data of 117 corporates in Tehran Stock Exchange (TSE) in a 5-year time horizon (2002-2007). Results of the study demonstrated that firm risk influences firm’s capital structure. The results indicated a negative relationship between firm risk and capital structure. The study by Kumars (2009) had significant similarities and also differences in the methodologies used for instance both used similar proxies for firm risk and capital structure and panel data was used. However, Kumar used a large sample of 117 firms listed in the Tehran Stock Exchange (TSE). The findings were different in the study’s opinion because of the differences in the area of study and also the differences in the methodologies used.

Moral hazard bank behavior is indicative of a negative relationship between capital ratio and risk, as high risk-taking is combined with high leverage. Demirgüç-Kunt and Detragiache (2000) also found that moral hazard to be prevalent in countries where banking regulation and supervision are substandard, indicating the possible presence of these conditions in emerging markets. A study conducted by Godlewski (2005) is one of the few that address the relationship between the changes in capital and risk in an emerging market context. Although Godlewski identifies weak evidence of a negative relationship between the changes under specific conditions, the results suggest that no significant relationship exists amongst emerging market financial firms. A limited investigation into the relationship between the absolute levels of capital and risk was carried out by Altunbas et al. (2001) that examined the influence of bank efficiency on the capital and risk system. They provided evidence of a strong positive relationship amongst European financial firms.
The overall model with moderation had three independent variables firm profitability, firm size, and firm risk. Firm management control was included as the moderating factor on the influence of firm specific factors on capital structure.

\[
Y_{it} = \beta_0 + \beta_1(X1*X5)_{it} + \beta_2(X2*X5)_{it} + \beta_3(X3*X5)_{it} + \beta_4(X4*X5)_{it} + e_{it}
\]

X1-Represents profitability, X2-represents firm growth, X3- Represents firm size, X3- Represents firm risk and X5-represents management control.

### Table 4.23: ANOVA test with moderation

<table>
<thead>
<tr>
<th>Statistic</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>R – Squared</td>
<td>0.659519</td>
</tr>
<tr>
<td>Adjusted R- squared</td>
<td>0.562536</td>
</tr>
<tr>
<td>S.E. of regression</td>
<td>0.133654</td>
</tr>
<tr>
<td>Sum squared residual</td>
<td>3.765254</td>
</tr>
<tr>
<td>F – Statistic</td>
<td>8.989146</td>
</tr>
<tr>
<td>Prob. (F – statistic)</td>
<td>0.000000</td>
</tr>
</tbody>
</table>

On table 4.23 the study presents regression results of the moderating effect of the firm management control on influence of firm specific factors on capital structure of insurance companies in Kenya. The results indicate that the moderated factors combined have 0.659519 or 66% explanatory power on capital structure of insurance firms this is
clearly shown by the coefficient of determination \( R^2 \). The analysis of variance (ANOVA) results further indicate that the regression model is significant at (0.01) level; this is clearly indicated by probability of the F-statistic (0.000000). These two results indicate the model’s fitness as good estimator of the moderating effect of firm management control on the influence firm specific factors on the capital structure of insurance firms in Kenya.

**Table 4.24: Beta coefficient of moderating effect of management control on the factors**

<table>
<thead>
<tr>
<th>Variable</th>
<th>Coefficient</th>
<th>Std. Error</th>
<th>t-Statistic</th>
<th>Prob.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Constant</td>
<td>-0.142705</td>
<td>0.065042</td>
<td>-2.194039</td>
<td>0.0290</td>
</tr>
<tr>
<td>Profitability*MC</td>
<td>-0.210680</td>
<td>0.065802</td>
<td>-3.201717</td>
<td>0.0015</td>
</tr>
<tr>
<td>Growth*MC</td>
<td>-1.18E-08</td>
<td>1.59E-08</td>
<td>-0.741262</td>
<td>0.4591</td>
</tr>
<tr>
<td>Firm Size*MC</td>
<td>-0.012610</td>
<td>0.004384</td>
<td>-2.876259</td>
<td>0.0043</td>
</tr>
<tr>
<td>Firm risk*MC</td>
<td>-5.51E-05</td>
<td>2.78E-05</td>
<td>-1.982568</td>
<td>0.0483</td>
</tr>
</tbody>
</table>

The results on table 4.24 indicate that the beta coefficients of moderated firm profitability, firm size and firm risk are significant at conventional level of significance: this is shown by the p-values of the t-statistics of the three variables which are at 0.0015 for profitability, 0.0043 for size and 0.0483 for firm risk. It is imperative to note that with moderation, all the variable coefficients change from positive to negative which is another very significant indicator of effectiveness of moderation by the firm management control. However, firm growth remained insignificant even with moderation as indicated by it p-value 0.4591 which is higher than 0.05 and was therefore, dropped from the optimal model.

From the change statistics computed and displayed on table 4.25 moderation has improved the models explanatory power by 8% from (0.579371 - 0.659519) or 58% to 66% which shows that the moderating influence of the management control is
significant, this position rejects the null hypothesis of no significant moderating effect on the influence of firm specific factors on capital structure of insurance companies in Kenya.

Table 4.25: Model with moderation, without moderation and change statistics

<table>
<thead>
<tr>
<th></th>
<th>With moderation</th>
<th>without moderation</th>
<th>change statistic</th>
</tr>
</thead>
<tbody>
<tr>
<td>R – Squared</td>
<td>0.659519</td>
<td>0.579371</td>
<td>0.080148</td>
</tr>
<tr>
<td>Adjusted R- squared</td>
<td>0.562536</td>
<td>0.495492</td>
<td>0.067044</td>
</tr>
<tr>
<td>S.E. of regression</td>
<td>0.133654</td>
<td>0.118138</td>
<td>0.015516</td>
</tr>
<tr>
<td>Sum squared residual</td>
<td>3.765254</td>
<td>3.705054</td>
<td>0.060200</td>
</tr>
<tr>
<td>F – Statistic</td>
<td>8.989146</td>
<td>7.787152</td>
<td>1.201994</td>
</tr>
<tr>
<td>Prob. (F – statistic)</td>
<td>0.000000</td>
<td>0.000000</td>
<td>0.000000</td>
</tr>
</tbody>
</table>

H₀₅: There is no significant moderating effect of firm management control on capital structure of insurance companies in Kenya.

Researchers in corporate finance have focused considerable attention on the ways in which managerial self-interest affects managerial decisions. Jensen and Meckling (1976) pointed out that managers sometimes set debt below the level which is optimal for unaffiliated outside shareholders. This deviation from the optimal capital structure is primarily due to two important types of non-diversifiable risk in a firm. First, as discussed by Fama (1980), managers have substantial human capital investment in their firms. Second, managers typically have a large equity investment in their firms. Models
of managers’ (controlling shareholders’) behavior frequently account for their exposure to idiosyncratic firm risk.

Majority of past empirical studies agree with the findings of this research that managers exert significant influence on the capital structure decisions of their firms. Carvey and Hanka (1999) in the study ‘capital structure and corporate control: The effect of antitakeover statute on firm leverage’ it was found that firms protected by "second generation" state antitakeover laws substantially reduce their use of debt, and that unprotected firms do the reverse. This result supports recent models in which the threat of hostile takeover motivates managers to take on debt they would otherwise avoid. An implication is that legal barriers to takeovers may increase corporate slack. Carvey and Hanka (1999) findings are similar to the findings of this research that the managers exert significant control on capital structure decisions of their firms. But are significantly different in the direction of influence; this study predicts a negative influence while Carvey and Hanka (1999) predicts a positive relationship. This is mainly to ensure security of their jobs that may be threatened by chances of bankruptcy and this selfish motivation seems to be evident in the management control of insurance firms in Kenya hence the negative relationship between moderated firm specific factors and capital structure.

Hamid (1992) argued that the agency theory recognizes that the interests of managers and share-holders may conflict and that, left on their own, managers may make major financial policy decisions, such as the choice of a capital structure, that are suboptimal from the shareholders' standpoint. The theory also suggests, however, that compensation contracts, managerial equity investment, and monitoring by the board of directors and major shareholders can reduce conflicts of interest between managers and shareholders. This research investigated the relationship between the firm's capital structure and 1) executive incentive plans, 2) managerial equity investment, and 3) monitoring by the board of directors and major shareholders. This paper found a positive relationship between the firm's leverage ratio and 1) percentage of executives' total compensation in
incentive plans, 2) percentage of equity owned by managers, 3) percentage of investment bankers on the board of directors, and 4) percentage of equity owned by large individual investors. These findings are consistent with the predictions of agency theory, suggesting, in turn, that capital structure models that ignore agency costs are incomplete. Hamid (1992) in his study predicted a positive relationship between while this study predicted a negative relationship. The possible reason is insurance firms fear possibility of bankruptcy more than hostile takeovers and mergers it is worth noting that majority of insurance firms are not listed in the security exchange and therefore information asymmetry may be a major limitation to the power of shareholders. On the others banks and other creditors may enjoy considerable power in the capital markets.

Ellul (2010) investigated the use of leverage as one channel through which control-motivated block-holders can defend their corporate control. Such block-holders face a trade-off between raising external finance and losing their control over the firm. Debt has an advantage over equity in solving this trade-off because it does not dilute the block holder’s voting power. The study used a sample of 5,975 firms from 38 countries over the period 1992-2006 and identified the presence of family block holders and long-term institutional investors which are the type of owners that should value corporate control most. It was found that firms that are owned by these block holders have high leverage, after controlling for other capital structure determinants. This result cannot be explained by the use of debt to discipline firms owned by block-holders that may have higher managerial agency conflicts, overinvestment problems or empire-building concerns. Most importantly, it was found that leverage in these firms is used strategically and not indiscriminately given the higher risk of bankruptcy it poses: debt is mostly used when control is contestable and less when block-holders already have control enhancing mechanisms in place. The evidence is reinforced when analyzing the behavior of leverage around hostile takeovers and withdrawn takeover bids. Ellul (2010) study predicted a positive sign between leverage and block-holder control. This position is taken by most private firms that are owned by close family members or friends who may not want to raise funds through selling equity for fear of losing their control of the firms
to the new equity holders and therefore, may opt for debt finance as opposed to equity. The Kenyan insurance companies which is also dominated by many private firms, still borrows less of debt because of fear of bankruptcy this is mainly occasioned by interest rates volatility.

Anecdotal evidence has shown the importance of control motivations to block-holders. An example is a survey of 891 Italian firms sampled from the Mediocredito database. A major problem facing Italian firms is the lack of adequate financing. Bagella et al. (2001) reported that to the question on their availability for any equity dilution, more than 80% of CEOs answered that they are ready for “No Equity Dilution”. When they were asked whether they see any advantage from higher financial stability resulting from external finance, almost 52% saw no advantages. The firm management clearly seems to fear loss of corporate control of their respective firms in Italy and therefore, use leverage more as a source of funds rather than equity to keep their firm control intact. But Kenya situation is different because the greatest threat to firms is possibility of bankruptcy and loss of control is not major problem.

A recent example of such control motivations was provided by Bertelsmann, the German media company, a family-owned company since 1835. In 2001 the Bertelsmann family sold 25.1% of its company to Groupe Bruxelles Lambert (GBL) in exchange for 29.9% share (and complete control) of RTL, a media company. The deal gave the right to GBL to list its stake in Bertelsmann publicly after five years. In 2006, to avoid such a public listing, the Bertelsmann family bought back the stake of GBL for some $5.75 billion through an issue of debt, and “for this luxury, Bertelsmann has more than doubled its existing debt...the media company is probably overpaying by around Euro 500 million. However, it avoids the scrutiny of stock analysts and the activism of hedge funds” (The Economist, 2006). Majority of firms in Germany just as in other environments in the developed world seem to exhibit a common desire to raise funds through debt mainly to preserve their control of the firms, it is imperative to note that in majority of the private companies the managers are also the main shareholders. It is also
worth noting that in the developed markets interest rates are very low and predictable and this makes debt the cheaper option compared to equity which involves a heavy floatation costs.

Institutional block-holding around the world and in the U.S, Stulz (2005) argues that controlling shareholders may pursue their own interests and their objectives are likely to have important repercussions on firms they invest in. Leverage is one such important firm decision that they can influence. The only two directly related empirical papers are those of Berger, Ofek and Yermack (1997) who looked at entrenched managers, and Litov and John (2006) who looked at corporate governance and managers’ investment policies. Notably, Berger et al. (1997) found that, contrary to the control hypothesis, entrenched managers decrease firm’s leverage.

The results that family block-holders increase leverage strategically can also be consistent with alternative explanations. For example, Harvey et al. (2004) find that debt is mostly used by firms where managerial agency costs are highest. Firms owned by control-motivated block-holders are potential examples. The results in this paper show that control motivated block-holders are associated with higher leverage even in firms that do not suffer from overinvestment problems. This also means that the results are robust to the argument that such firms may have larger leverage to restrict empire building (Zwiebel, 1996)). Debt and dividends can be substitutes when dealing with agency conflicts (Jensen, 1986)). If dividends, instead of debt, are used to discipline managers’ empire building, then internal finance will be depleted with a consequent higher reliance on external funding. In the case where equity is more expensive than debt, then higher leverage results, but in this case, it is not because of any control motivations. The study found no support for this hypothesis. From this evidence it was concluded that the control motivation hypothesis proves robust to different tests.

Existing theoretical literature argues that control motives can influence the mix of equity and debt. Harris and Raviv (1988), Israel (1991) and Stulz (1988) investigated the
actions of entrenched managers and found that they can use the capital structure to gain voting power. Stulz (1988) concluded that “whether management controls too few or too many votes, the firm’s capital structure decision is relevant because of its effect on the distribution of voting rights” (page 27). This prediction is very evident in the developed countries where the management particularly of private companies is also the main shareholder and hence the desire for retaining firm control is priority.

Control motivations should be tested against other hypotheses. Managers with high control motivations often hold undiversified portfolios with significant firm-specific risks. Applying the Fama (1980) and Masulis (1988) frameworks to the case of leverage in firms owned by undiversified control-motivated managers, we can hypothesize that lower leverage can be used to reduce firm-specific risk. Debt in firms with concentrated ownership can also be used as a disciplining device to solve agency conflicts, especially where legal protection is ineffective. Harvey et al. (2004) showed that debt serves as a governance mechanism in emerging markets because it either reins in the overinvestment problem or signals management’s unwillingness to engage in overinvestment. Their evidence is consistent with Jensen (1986, 1993), Flannery (1986), Stulz (1990), Diamond (1991), Hart and Moore (1995), and Zweibel (1996).

Cheng, Nagar and Rajan (2004) stated that in the context of firms with an owner-manager, most financiers insist on some form of protection, so that the final compromise reached in most financial contracts for small firms is one resembling a debt contract (or a venture capital contract), which protects the founder-manager’s control as long as the firm is performing adequately. This study made some interesting findings where firm management would negotiate some provisions in the debt contract in order to maintain control of the firm.

Holmen (2007) used direct estimates of the portfolio diversification of the largest shareholder in a firm to study the impact of shareholder diversification on the firm. For firms where the controlling shareholder is an individual, tests indicated that the owner-
managers use debt, dual class shares and corporate control transactions (merger activity) to strategically trade-off corporate control and the drawback of poor portfolio diversification. However, for firms where the controlling shareholder is an institution, the results indicate that control, but not diversification, is important.

The management of the individual firm will be expected to influence the capital structure decisions through the financial decisions that they make as they guide the operations of the firms. The management will always act in the interest of self-preservation, this may in some cases be against the interest of other stakeholders like the shareholders and the bondholders. This particular finding is upheld by this research and other studies held in many other countries. However, from the discussion above, the motivation of the managers is common and that is self-preservation and control, but the threats they face differ from one environment to another for instance in the developed countries the main fear is hostile takeover and dilution of firm control and hence managers there prefer debt to equity while. In Kenya the main threat is fear of bankruptcy and hence insurance managers borrow less of debt. This clearly demonstrated by the fact that in the last 20 years there has been only one major case of merger between ICEA and LION group, but there has been eight cases of bankruptcy.

4.7. Summary

According to numerous researchers, capital structure decisions are determined by a complex set of factors (Chen, 2004; Mazur, 2007; Bhabra, Liu & Tirtiroglu, 2008; Frank & Goyal, 2009; Getzmann, Lang & Spremann, 2010). Bhabra, Lui and Tirtiroglu (2008) indicated that significant factors influencing the capital structure decision are a proportion of tangible assets, size, profitability, and growth opportunities. Furthermore, Frank and Goyal (2009) suggested that the reliable factors for explaining market leverage are median industry leverage, market-to-book assets ratio, the tangibility of assets, profits, log of assets and expected inflation. The significant determinants of capital structure have been disagreed over decades of empirical studies. Specifically,
what are the influential factors in determining how firms select the types of security to be issued are considered to be questionable.

Base on the findings of this study, the study concludes the following: firm profitability, firm size and firm risk are significant variables that influence capital structure of insurance companies in Kenya; firm growth has no significant influence on capital structure, this research further provides evidence that management control exerts significant effect on the influence of firm specific factors on capital structure of insurance companies.
CHAPTER FIVE

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

5.1. Introduction

This chapter presents the summary of major findings of the study, conclusions and the necessary recommendations respectively. The summary is done in line with the objectives of the study. Each recommendation traces directly to each conclusion in line with practice and policy. Based on the results analysis on each objective, overall, conclusions are as follows:

5.2. Summary

This study examined the influence of the firm specific factors on capital structure of insurance companies in Kenya. Four firm variables (profitability, growth, size and risk) were identified, studied and the results analyzed. Both primary and secondary data were used in the analysis. The data was confined to a panel data analysis with 41 cross sections and 10 periods over 2003-2012 period. The study contributed to the existing literature by empirically evaluating the influence of firm specific factors on capital structure of insurance firms in Kenya.

The summary of the findings was based on the earlier findings in chapter four and the empirical literature as contained in the literature review in chapter two. The summary and discussions of the study followed the research objectives in chapter one. These research objectives guided the arrangement of the discussions.

The results of panel regression model on the influence of firm profitability on capital structure indicate that there is a significant influence of firm profitability on capital structure and therefore the null hypothesis on the influence of profitability on capital structure is rejected and the alternative hypothesis of a significant influence is upheld.
Profitability has a positive and significant influence on capital structure. This suggests that high profitability firms are more likely to use leverage for financing their investments than firms with low profitability. The results of correlation analysis also supported positive relationship between profitability and capital structure. It also is imperative to note that the industry realized the highest level of profits in the years of 2010, 2011 and 2012 and during the same period, the industry had the highest debt ratios.

Size has a positive and a significant regression coefficient on leverage according to the analyzed regression results in chapter four. The regression results were also collaborated by correlation results. It is also imperative to note that the industry experienced the highest level of expansion between 2009 and 2012 and at the same period the industry had the highest debt ratio implying that this expansion was funded with debt finance. The results of this research mean that the null hypothesis is rejected and the alternative hypothesis of significant influence of firm size on capital structure is upheld. This suggests that large size firms in the insurance sector of Kenya are more likely to use leverage for financing their investments than small firms. Finally, it is imperative to note that Kenyan insurance companies tends to conform to other sectors the world over as studies by majority of other scholars done in different environments have shown that firm size has positive influence on capital structure.

Risk has a positive significant regression coefficient on leverage according to regression results in chapter four. It is also imperative to note that the industry had the highest level of risk (indicated by the lowest solvency ratios) between 2008 and 2012, the same period the industry had the highest debt ratios. The results clearly reject the null hypothesis of no significant influence and uphold the alternative hypothesis of significant influence. These results suggest that highly risky firms in the insurance sector of Kenya are more likely to use leverage to financing their investments than low risk firms. This position tends to go contrary to the position taken by the proponents of the trade-off theory which holds that the higher the debt, the higher the probability of default. Our positive result
supported the agency theory that the problem of underinvestment decreased when the volatility of the firm’s returns increased, hence, firms use more leverage. This suggests that highly risky firms resort to more borrowing because of investors’ reluctance to buy equity from such firms for fear of losing their wealth. The positive influence of firm risk on insurance firm’s capital structure goes contrary to both the trade-off theory and the pecking order theory which predict a negative relationship because highly risky firms are not likely to be attractive to financiers because of the possibility of default.

Management control has a significant regression coefficient on its effects on the influence of three firm specific factors (firm profitability, firm size and firm risk) on capital structure of the insurance companies in Kenya according to the regression results presented and discussed in chapter four. This means that the management control exerts significant moderating effect on influence of firm specific factors on insurance capital structure decisions. This position completely rejects the null hypothesis that management control does not have significant effect on the influence of firm specific factors on capital structure. It is also imperative to note that the interaction between firm size, firm risk and profitability with management control is very significant. The change statistics also reflect the same position: the $R^2$ value changes significantly with the moderation.

These results indicate that the firm management considers the three variables, profitability, size and risk, as the main firm level factors in making capital structure decisions. The negative beta coefficients for moderated profitability, size and firm risk do not support the position taken by proponents of the trade-off theory.

The study’s characterization of the management point of view is that managers maximize job tenure, which is threatened by two possible events: bankruptcy and takeovers. The occurrence of both these events is affected by the capital structure in place. In the study’s view, though, the management realizes that the use of debt may crowd out the effectiveness of takeovers and uses this crowding-out effect in a way that
maximizes the entrenchment of the management. This creates a distortion in the influence of firm specific factors on capital structure choice.

The management’s capital structure choices differ, depending on a company’s relative performance and on the pressure from the corporate control market. The management may under-lever or over-lever the company with respect to the ex-ante optimal shareholders’ choice. More importantly, the two choices differ not only in their levels, but also in their sensitivities to the cost of financial distress and taxes. For instance, while the efficiency approach has standard predictions on the effects of taxes, the entrenchment approach predicts an asymmetric and variable sensitivity of capital structure choice to tax incentives. Finally, this research found out that the management has firm control on the company’s capital structure decisions.

5.3. Conclusion

Based on the summary of the findings of this research, the following conclusions are drawn:

As regards the influence of profitability on capital structure, this research has provided evidence of a positive influence of profitability on capital structure. The insurance companies is clearly performing well and is on an upward trend in terms of profitability and as the profits continue to rise, the managers’ desire for debt is on the rise mainly to shield away the profits from taxation because debt has tax shield advantage which is not there in equity. However, the heavy reliance on debt capital is pushing the industry risk upwards and there is need for managers and other stakeholders to exercise control, to avoid pushing the industry to bankruptcy. It is also imperative to note that the industry was adversely affected by the global financial crisis and the post-election violence that rocked the country in 2008. During that year, the industry posted the lowest profits. The industry was also vulnerable in 2011 due the poor performance of the economy which
resulted to high interest rates as the government tried to battle inflation and stabilize the economy.

On the influence of firm size on capital structure, the research provides evidence of a positive influence of firm size on capital structure. The Kenyan insurance companies has been expanding during the study period and reached its peak size in 2012 with a total asset value of slightly above sh. 300 billion up from sh. 87 billion in 2003. During the same period, debt ratio has also been rising, indicating a positive influence. The trend points to an industry with a bright future. However, the industry also had its fair share of challenges: the industry was adversely affected by the global financial crisis and the post-election violence - both happened in 2008. Also, small firms often suffer the problems associated with asymmetric information, such as adverse selection, and they have to face higher bankruptcy costs, greater agency costs and bigger costs to resolve the higher informational asymmetries. However, in Kenya’s insurance companies, this problem of information is being addressed by the regulator and such organizations like the Capital Market Authority by enforcing certain disclosure requirements on the firms to ensure certain critical information is available to the investors. Most of the empirical researchers have argued that there is less asymmetrical information about the larger firms. The fact that the influence of size on leverage was consistent with the trade-off theory implies that larger firms would take the tax shield benefit.

Regarding the influence of firm risk on capital structure, this research provides evidence of a positive influence. The level of risk of the insurance companies has been rising over the 2003 - 2012 period. This increase is seemingly being caused by the increase in firms’ preference for debt finance as opposed to equity finance which is considered more expensive.

The results of panel regression indicate very significant moderating effect of firm management control on the influence of firm specific factors on capital structure decisions. The results appear consistent with the Kenyan situation although the financial
sector is heavily regulated here in Kenya just like elsewhere in the world where managers still exert significant control on the capital structure decisions. The Kenyan insurance managers consider three of the firm level factors critical in their capital structure decisions. These factors are profitability, firm size and firm risk. Although several scholars have identified the four factors that have been studied among others as important factors, the results have clearly indicated that only three of those four are important factors of firms’ capital structure decisions.

5.4. Recommendations

In light of the major findings observed from the results and the conclusions drawn, the following recommendations were made. Although several factors have been listed by other researchers as key to determining capital structure decision, this research has indicated that profitability, size and firm risk are the most influential in guiding the choice of leverage in the insurance companies. Therefore, insurance firm managers should pay greater attention to these significant variables in determining their capital structure.

High Profitability firms in the insurance sector have low risk and therefore may prefer to use more debt finance because the firms are usually very attractive to creditors because of low possibility of default. From the results of chapter four, most of the highly profitable firms in Kenya are using high percentage of debt capital compared to equity. This shows that local insurance firm managers are fully taking advantage of tax shield that is accorded to firms that use debt finance. However, this research encourages the firm managers to consider balancing borrowing debt finance and equity in order to avoid pushing firms to higher risks of bankruptcy.

Results showed that large insurance firms are more likely to use leverage to finance their activities in Kenya compared to small firms. Small firms often suffer the problems associated with asymmetric information, such as adverse selection, and they have to face
higher bankruptcy costs, greater agency costs and bigger costs to resolve the higher informational asymmetries. To solve this problem of information asymmetry, this study encourages the Kenya Association of Insurers and the regulator to enforce disclosure requirements among the firms in order to encourage investors to invest their capital in the small firms. This research also notes that large insurance firms may be enjoying undue advantage in the money and capital markets because of their perceived low risk and therefore this study encourages the capital market authority to even out the environment of competition in order to encourage the small firms.

The results of the research indicate that the industry risk is on the rise as the industry leverage continues to increase. If this trend is left unchecked or uncontrolled, it could easily sink the industry to bankruptcy. On this, the research recommends the following: that part of the debt, particularly the long-term debt should be converted to common equity to shield the industry from high interest rate exposure. This research also recommends that proper due diligence should be conducted particularly by the investors to ensure that they do not endanger their wealth. The capital market authority should also ensure that the financial soundness of the firm is determined before the firm can access finance.

The results indicate a very significant moderating effect of management control on the influence of firm specific factors on capital structure decisions of insurance firms. The results appear consistent with the Kenya situation, although the financial sector is heavily regulated here in Kenya just like elsewhere in the world. The managers still exert control of the capital structure decisions of their firms. In light of these findings and the knowledge generated by this study, the investors are encouraged to control the managers’ discretion in setting the retention ratio, which they effectively use to manipulate the debt ratio. The regulator and the security exchange authority should ensure that the management of these insurance companies does not put the wealth of the investors at risk with their activities. The regulator should hold the management of these
companies to account for any acts of omission or commission that may jeopardize the company.

5.5. Suggestions for further research

Based on the findings and limitations of the research, the following recommendations can be made for further research:

This study examined only four firm specific factors of capital structure of insurance companies in Kenya and out of the four, three were significant. The four factors have a combined explanatory power of capital structure of firms of about 57.9% which leaves a gap of 42.1% unaccounted for. Thus, future researchers may address these deficiencies by including the other firm specific variables like asset tangibility and liquidity and also external variables like inflation, GDP, interest rates, taxation, regulation, competition and ownership structure, in order to demonstrate the impact of both internal and external variables on the choice of capital structure.

This research heavily relied on data that was obtained from the companies’ websites and the websites of the regulator (IRA), the Kenya Insurance Association and the Nairobi Security Exchange. Future researchers should try to incorporate the views of the managers of the insurance firms and of those in-charge of the Insurance Regulatory Authority, the Kenya Association of Insurers and the Nairobi Security Exchange.

There exists other limitations to this paper as well that should be addressed by future researchers. In particular, the data is based on book values and not market figures, which may be a major drawback in some cases, for instance when estimating the effect of expected growth opportunities on leverage, since stock markets usually capitalize the present value of growth opportunities.
The research also did not collect data on the 10 insurance firms that did not have continuous data for the 10 years from 2003 to 2012. These firms that were left out constitute about 20% of the number of firms in the insurance companies which the study appreciates may constitute a significant number whose inclusion could have altered the results of this research.
REFERENCES


APPENDICES

Appendix A: List of Registered Insurance Companies – 2012

<table>
<thead>
<tr>
<th>No.</th>
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<th>Line of Business</th>
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</thead>
<tbody>
<tr>
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</tr>
<tr>
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<tr>
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<tr>
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<tr>
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<td>AIG Kenya Insurance Company Limited</td>
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<td>British-American Insurance Company Limited</td>
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<td>Cannon Assurance Limited</td>
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<td>Capex Life Assurance Company Limited</td>
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<td>CFC Life Assurance Limited</td>
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<td>Madison Insurance Company Kenya Limited</td>
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<td>Tausi Assurance Company Limited</td>
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<td>The Heritage Insurance Company Limited</td>
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<td>45</td>
<td>The Jubilee Insurance Company of Kenya Limited</td>
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<td>The Kenyan Alliance Insurance Company Limited</td>
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<td>The Monarch Insurance Company Limited</td>
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<td>49</td>
<td>UAP Insurance Company Limited</td>
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<td>51</td>
<td>Xplico Insurance Company Limited</td>
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Source: insurance regulatory authority
ARGUMENTED DICK-FULLER TEST

test for stationarity

Augmented Dickey-Fuller Test Equation
Dependent Variable: D(RESID)
Method: Least Squares
Date: 06/28/15  Time: 10:51
Sample: 2003-2012
Included observations: 410 after adjustments

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R-squared = 0.509987  Mean dependent var = 0.002515
Adjusted R-squared = 0.505744  S.D. dependent var = 0.125271
S.E. of regression = 0.088070  Akaike info criterion = -2.008640
Sum squared resid = 1.791696  Schwarz criterion = -1.964341
Log likelihood = 238.0109  Hannan-Quinn criterion = -1.990779
Durbin-Watson stat = 1.911453
Appendix B: Model 1 with moderation

Independent variable – profitability

Period fixed effects test equation:
Dependent Variable: LT_TA
Method: Panel Least Squares
Date: 06/28/15   Time: 11:07
Sample: 2003 2012
Periods included: 10
Cross-sections included: 41
Total panel (unbalanced) observations: 378

<table>
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Effects Specification

Cross-section fixed (dummy variables)

Period effects  (dummy variables)

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**Independent variable – Growth**

Period fixed effects test equation:
Dependent Variable: Capital structure
Method: Panel Least Squares
Date: 06/28/15   Time: 11:09
Sample: 2003 2012
Periods included: 10
Cross-sections included: 41
Total panel (unbalanced) observations: 376

<table>
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**Effects Specification**

Cross-section fixed (dummy variables)

Period effects (dummy variables)

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| Adjusted R-squared | 0.223685 | S.D. dependent var | 0.102804 |
| S.E. of regression | 0.089994 | Akaike info criterion | -1.863950 |
| Sum squared resid | 2.705054 | Schwarz criterion | -1.404104 |
| Log likelihood | 394.4225 | Hannan-Quinn criter. | -1.681407 |
| F-statistic | 3.789146 | Durbin-Watson stat | 1.719162 |
| Prob(F-statistic) | 0.000000 |                      |         |
Independent variable – Firm size

Dependent Variable: Capital structure
Method: Panel Least Squares
Date: 06/28/15  Time: 11:12
Sample: 2003 2012
Periods included: 10
Cross-sections included: 41
Total panel (unbalanced) observations: 378

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Effects Specification

Cross-section fixed (dummy variables)
Period fixed (dummy variables)

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**Independent variable – firm risk**

Dependent Variable: capital structure

Method: Panel Least Squares

Date: 06/28/15  Time: 11:14

Sample: 2003 2012

Periods included: 10

Cross-sections included: 41

Total panel (unbalanced) observations: 372

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**Effects Specification**

Cross-section fixed (dummy variables)

Period fixed (dummy variables)

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Full model without moderation

Dependent Variable: Capital structure
Method: Panel Least Squares
Date: 06/28/15   Time: 11:19
Sample: 2003 2012
Periods included: 10
Cross-sections included: 41
Total panel (unbalanced) observations: 370

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Effects Specification

Cross-section fixed (dummy variables)
Period fixed (dummy variables)

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| Adjusted R-squared | 0.495492 | S.D. dependent var | 0.103548 |
| S.E. of regression | 0.098138 | Akaike info criterion | -1.874625 |
| Sum squared resid | 2.705054 | Schwarz criterion | -1.250580 |
| Log likelihood | 405.8056 | Hannan-Quinn criter. | -1.626749 |
| F-statistic | 7.789146 | Durbin-Watson stat | 1.842221 |
| Prob(F-statistic) | 0.000000 |              |          |
**Full model with moderation**

Dependent Variable: LT_TA  
Method: Panel Least Squares  
Date: 06/28/15  Time: 11:19  
Sample: 2003 2012  
Periods included: 10  
Cross-sections included: 41  
Total panel (unbalanced) observations: 370

<table>
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<tr>
<th>Variable</th>
<th>Coefficient</th>
<th>Std. Error</th>
<th>t-Statistic</th>
<th>Prob.</th>
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<td>-0.142705</td>
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<td>1.59E-08</td>
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<td>Firm risk*MC</td>
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**Effects Specification**

Cross-section fixed (dummy variables)  
Period fixed (dummy variables)

<p>| | | | |</p>
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<td>R-squared</td>
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<td>Mean dependent var</td>
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<tr>
<td>Adjusted R-squared</td>
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<td>Akaike info criterion</td>
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<td>Sum squared resid</td>
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<td>Hannan-Quinn criter.</td>
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<td>F-statistic</td>
<td>8.989146</td>
<td>Durbin-Watson stat</td>
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<tr>
<td>Prob(F-statistic)</td>
<td>0.000000</td>
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</tbody>
</table>
Appendix C: Introduction Letter

TO WHOM IT MAY CONCERN

Dear Sir/Madam,


This is to confirm that the above named is a student pursuing PhD in Business Administration Programme at Jomo Kenyatta University of Agriculture and Technology, NCBD Campus.

He has completed his coursework and is now working on his research thesis titled “The Influence of Firm Specific Factors on Optimal Capital Structure of Insurance Industry in Kenya” as partial fulfilment of the requirements of the Programme. As such, he will be contacting you for data collection for his research study.

Any assistance accorded to him will be highly appreciated. Please do not hesitate to contact the undersigned for any more information.

Your sincerely,

Gladys Rotich (PhD)
Associate Chair –CES