

**INFLUENCE OF FIRM CHARACTERISTICS ON
CAPITAL STRUCTURE OF PRIVATE MANUFACTURING
FIRMS IN KENYA**

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**Influence of Firm Characteristics on Capital Structure of Private
Manufacturing Firms in Kenya**

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DECLARATION

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

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DEDICATION

This thesis is dedicated to my wife Agnes Vakhoya Sembeya for her love, support and encouragement during the entire duration of the preparation research and writing. Further dedication is to Simeon Brown and to my children Prince Emmanuel, Purity Euphemia, Prestiny Elsie and Pearson Elyon and their cousin Maxwell Odour; to my brother Patrick Ounza all of whom have been of great inspiration.

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ABBREVIATIONS AND ACRONYMS

AGOA	African Growth and Opportunities Act
ANOVA	Analysis of Variance
CAPM	Capital Asset Pricing Model
CEO	Chief Executive Officer
CFA	Component Factor Analysis
CFO	Chief Finance Officer
CLRM	Classical Linear Regression Model
DFCK	Development Finance Company of Kenya
DTMs	Deposit Taking Microfinance Institutions
FDI	Foreign Direct Investment
FGLS	Feasible Generalize Least Squares Model
ICDC	Industrial Commercial Development Corporation
KAM	Kenya Association of Manufacturers
KMO	Kaiser- Meyer Olkin test
Log	Logarithm

MM	Modigliani and Miller
NSE	Nairobi Securities Exchange
SPSS	Statistical Package for Social Sciences
SSMC s	Small Scale Cooperatives
UK	United Kingdom
USA	United States of America

DEFINITION OF TERMS

- Capital Structure:** A mix of the company's debt and equity, and it relates to the way a company finances its overall operations and growth by using different sources of finance (Rabiah, Sabri, & Khairuddin, 2012).
- Dividend Payout:** This is the portion of earnings that is paid to equity shareholders for their investment in the firm. (Pandey, 2004).
- Earnings:** Refers to profits made before interest expense and corporation taxes deducted (Pandey, 2004).
- Firm:** A business enterprise or organization and may take the form a corporation, a limited liability company or partnership selling and buying goods and services (Salawu, 2007).
- Firm Size:** This is the logarithm of total assets (Fisseha, 2010).
- Manufacturing Firm:** Manufacturing firm is a firm that is engaged in the production of merchandise for use or sale using labor and machines, tools, chemical and biological processing, or formulation (Salawu, 2007).
- Tax Shield:** Also called tax saving which is a cash inflow associated with tax effect on interest expense and depreciation (Mudida & Ngenye, 2010).
- Interest Cover:** The number of times interest is covered by earnings (Mudida & Ngenye, 2010).
- Firm Size:** This is the logarithm of total assets (Fisseha, 2010).

ABSTRACT

The main objective of the study was to ascertain how firm characteristics influence the capital structure of private manufacturing firms in Kenya. The specific objectives were to show the influence of earnings, tax shield, dividend payout, interest cover and firm size on capital structure of private manufacturing firms. Ascertaining and attaining an optimal capital structure for many firms is not an easy task. Many manufacturing firms are struggling to operate while others have been compelled to shut down. The study aimed to look at firm characteristics' influence on capital structure and employed capital structure theories. This study used descriptive research design on a population of 455 CFOs of 455 firms as per KAM members' directory of 2015. Using stratified sampling a sample of 208 CFOs of 208 private manufacturing firms were selected. The researcher collected primary data using self-administered questionnaires to obtain financial measures from the chief finance officers (CFOs) of these firms and secondary data was collected through a data survey sheet and document review form. The major limitation in this study was that some private manufacturing firms considered financial information as confidential and hence were not willing to give financial information. Nonetheless the researcher managed to obtain for 80 firms on the document review form for secondary data and 144 questionnaires for primary data. Data was analyzed using Statistical Package for Social Sciences (SPSS) version 22 and E - Views. Descriptive and inferential statistics were employed. Under descriptive statistics percentages of responses and means of items was computed. Karl Pearson's correlation, multiple linear regression and ANOVA was used. The study found that earnings, tax shield, dividend payout and firm size have a positive and significant influence on capital structure. However, the study found that interest coverage has a negative and significant relationship with capital structure. The study also found that firm size moderates the relationship between firm characteristics and capital structure of private manufacturing firms in Kenya. The study concluded that high earnings cause increase in debt. In addition, firms raise capital first from earnings then debt. Most firms also prefer internal finance first before considering external finance. In addition firms raise capital first from earnings then debt. Most firms also prefer internal finance first before considering external finance. The study recommends that chief Finance officers of manufacturing firms should take into account the industry norms when developing their financial policies. Capital structure of comparable companies in the industry should be considered because it might reflect the unique risks inherent in that industry.

CHAPTER ONE

INTRODUCTION

1.1 Background of the Study

Capital structure denotes the mode of financing, usually a blend of the loan and equity capital through which a firm is financed. The decision of how the firm is financed is subjected to both managers of the firm and fund suppliers. Financial decisions regarding capital structure is an important decision to managers regarding minimization of financial costs and maximization of shareholders value. Firms have their capital structure determined by marginal benefits associated with debt as also costs associated with debt. Capital structure refers to the way firms finance their assets through a combination of some financing sources. This combination can be use of earnings then debt and finally equity (Siddiki, Kabiraj & Joghee, 2017).

The first theory of capital structure was introduced by Modigliani and Miller in 1958. The value of the firm was taken to be irrelevant in relation to how the firm was financed, thus it did not matter how the capital structure was determined. But the reality is that capital structure is relevant as far as value of the firm is concerned. To support this assertion two theories were developed the trade off theory and the pecking order theory. The trade off theory considered the tax advantage of debt against the costs of debt. According to Myers and Majluf (1984) pecking order theory informs the type of capital structure adopted and that firms will first utilize internal funds then go for debt and finally to equity shares. Lately capital structure is pegged on market timing theory introduced by Baker and Wurgler in 2002. In this theory managers are able to identify certain periods when issuance of equity shares is less costly due to high valuation of companies stocks. Companies will issue shares when their market values are high and to repurchase shares when their market values are low (Hsiao, Hsu, & Hsu, 2009).

Market liberalization, widening and deepening financial markets has led to adjustment in the capital structure of firms. It has therefore given flexibility to Nigerian firms to adjust their capital structure (Salawu & Agboola, 2008). Bengtson and Wagner (2013) states that no specific capital structure should be favoured and recommends that the debt equity ratio should vary. Tifow and Sayilir (2015) adds that choosing an appropriate capital structure decision is one of the most important decisions of financial management as it is related to value of the firm, while Eriotis, Vasiliou and Ventura (2007) adds that a good decision of capital structure can affect the firms value while a bad decision may lead to financial distress and eventually bankruptcy.

Decisions about capital structure are important for every business firm. In the corporate world it is the task of Board of Directors and Management to make capital structure decisions in a manner that will maximize the value of the firm or company (Sheikh & Wang, 2011). However optimization of the firm's value is not an easy task since it involves the selection of debt and equity shares in a balanced percentage keeping in mind various costs and associated benefits. It is noted that a wrong decision or choice may cause a company financial distress that may eventually lead to bankruptcy. The move towards a free or liberal market from 1992 made the operating environment change thereby giving financial managers flexibility in choosing the firm's capital structure. Capital structure is a vital management decision variable because it greatly affects and influences risk and return which in turn affects the firm's market value. Whenever funds are supposed to be raised for various projects a capital structure decision has to be made (Salawu, 2007).

1.1.1 Firm Characteristics

Twenty years ago Rajan and Zingales (1995) noted that empirical work had been done on US firms alone and very little in firms outside USA. Their main objective was to establish whether choice of capital structure in other countries is based on firm characteristics similar to those influencing capital structures of US firms. In doing so

they did not attempt to produce the regularities found in the US and other countries, but to go deeper in understanding the rationale behind them. The use of international data provides an independent sample to test that received wisdom. After Rajan and Zingales (1995) analyzed financial statements of the G-7 countries of US, Japan, Germany, France, Italy, the UK, and Canada; they found that the extent of leverage to be similar across the group with only UK and Germany having low leverage.

Since the time of Modigliani and Miller's article (1958) theoretical framework has been emerging to model the firm's capital structure. These theories have given explanations to the choice of optimal capital structure of the firm (Bancel & Mitto, 2004). Ngugi and Afande (2015) indicated that financial literature has developed far away from MM theory and the previous approach to corporate finance is based on the assumptions of past behavior of CAPM and efficient markets. There are two opposite approaches the neoclassical theory and post Keynesian theory. The neoclassical theory has a stringent approach when deciding on the ideal investment decisions. The major purpose of the firm is to optimize shareholders wealth through maximization of the firm's shares and coming up with rational decisions including those of capital structure (Daskalaki& Vasiliou, 2006).

A number of studies across countries have been carried out (Psillaki & Daskalaki, 2009; Paudyal & Pescetto, 2004) in Asia Pacific region. A study by De Jong,Kabir and Nguyen (2008) indicate firm specific determinants of capital structure differ across countries and there is direct impact of country specific factors on capital structure of firms. The reason is that country specific factors also affect role of firm characteristics. It is on this premise that a study of one country and within a sector minimizes the potential differences of country specific and industry specific characteristics.

Private companies have a much restricted access to capital markets and this is due to excessive transaction costs that do not allow them to adjust their capital structure frequently (Brav, 2009). This lack of financing flexibility is often regarded as a major

disadvantage of private firms compared to public firms. However, most studies have focused on public firms due to data availability (Borgia & Newman, 2012). Consequently, this leaves a gap in the literature which focuses on the financing behavior of private firms.

Getzeman, Lang and Spreman (2010) reveal that capital structure decisions are ascertained by many factors. Further Bhabra, Lui, and Tirtiroglu (2008) did emphasize that important firm characteristics influencing capital structure are tangible assets, size, profitability, and growth opportunities. On the other hand, Frank and Goyal(2009) stated that the consistent firm characteristics for explaining capital structure are median industry leverage, market-to-book ratio, tangibility of assets, profits, log of assets and expected inflation. Lim (2012) emphasizes the position that capital structure closely relates to firm-level characteristics.

Credit expansion has been debated and found to be of great concern for the last five decades. It was shown that companies have struggled with strong capital structures over the period and failed to make enough and sufficient liquidity to survive in the unavoidable contractions during the credit expansion cycles (Jamal, Karim, Arokiadasan, Mohidin, & Lim, 2013). Accordingly, capital structure means the way firm's assets are being financed through a mix of equity, debt or hybrid securities. It is a firm's mix of debt, common and preferred stock or equity. In the modern business context capital is important and crucial in financial management of a firm, because it provides an insight into a firm's risk. A highly levered company is one that posses a high level of debt and in addition huge misjudgment in financing may cause financial distress, liquidation and bankruptcy, when companies are unable to service debt; firms also face costs of financial distress (Pandey, 2004).

Today's business organizations grow rapidly and this is very much related to how efficient the management finances their businesses and therefore decisions concerning their capital structures are important to every firm's management. Therefore the

management has to ensure that capital structure decisions maximize firm value and involves selection of debt securities with costs and benefits in a balanced proportion. It is also noted that mistakes in the selection process of securities may lead to the company to financial distress and eventually winding up. It is also contended that it is never an easy task to maximize the firm value (Jamal *et al.*, 2013).

1.1.2 Capital Structure

Capital structure as a mix of the company's long term, short term debts; common equity and preferred equity, and it relates to the way a company finances its overall operations and growth by using different sources of finance. Debt comes in from bonds; notes payable, while equity is classified as common stock, preferred stock and retained earnings. Short term debt such as working capital is also considered to be part of capital structure (Wahab, Amin, & Yusop, 2012).

According to Tse and Rodgers (2014) other elements of western oriented research posit that industry membership can explain industry variations of leverage for instance in relation to UK aggressive CEOs showed a tendency to use higher debt than their more conservative peers and overconfident managers tended to issue more debt and were less likely to adhere to the standard pecking order. Bertrand and Schoar (2003) assert that from a cultural perspective a nation's culture can affect corporate capital structure.

Highly levered firms have to allocate an efficient mixture of debt and equity for the firm's capital in order to reduce costs. Financial managers could have to maximize shareholders wealth by deciding the best debt equity ratio. This is to relieve potential pressures on the firm's long term financing. To decide the best level of borrowing, it would be essential to know whether changing the debt and equity ratio could increase the shareholders wealth (Mahmood,Affandi,Baharuddin,Mohamad & Shamsudin, 2011).

Capital structure is still regarded as a strategic finance topic and many scholars have concentrated on firm characteristics especially in developed countries although some

have done studies in countries such as Libya, Ghana, Saudi Arabia and Pakistan (Jamal *et al.*, 2013). According to AL-Ajmi, Hussain and Al-Saleh(2009) unique characteristics such as environment and regulation affect companies' activities and as a result studies on capital structure were mixed and inconsistent from various countries. Moreover many studies were conducted in the USA and there has been little understanding on influence of firm characteristics on capital structure outside the USA.

According to Deesomsak, Puadyal and Pescetto(2004) debt and equity capital choices depends on firm characteristics which vary in different countries and results from specific sectors cannot be used to generalize for other sectors and countries. There is still less understanding of the firm's financial mix determinants outside USA and other developed countries. Most of the studies were done on large and quoted companies and used secondary data. Several studies have been carried out in various sectors of the economy namely manufacturing, electric-utility firms, and agricultural firms, however firm characteristics' influence remain unclear (Ooi, 1999).

Research by Kabede (2011) revealed that size, age, tangibility, and growth factors are the most important determinants influencing capital structure of Small Scale Manufacturing Cooperatives and that the capital structure theories such as trade off theory, Pecking order theory and Agency theory appear indeed to be valid for these firms and in fact the trade off theory best explains Ethiopian firms capital structure.

A study by Basu and Rajeev (2013) on the capital structure found adverse impact on the use of Public debt and favors the use of equity capital. It was also found out that firm specific factors are more capable of explaining trade off theory rather than explaining the information asymmetry prevalent in Public domain. Public firms have access to capital markets whereas this access is limited for private firms and as a result these private firms face higher costs of debt and equity capital (Brav, 2009).

Companies that trade off the potential benefits of adjusting their capital structure include those on the securities exchange who frequently adjust their leverage (Kariuki & Kamau, 2014). According to Brav (2009) private firms however tend to have restricted access to capital markets which do not allow them to adjust their capital structure frequently.

There are conflicting theoretical predictions on the influence of earnings on the debt ratio of firms. Profitability or earnings is a strong point of dissent between pecking order theory and the static order theory (Nguyen & Ramachandran, 2006). For the static trade off theory the more profitable a firm is the more the debt is issued thereby reducing the tax burden. As opposed to this Pecking order theory assumes that larger earnings lead firms to finance their operations with retained earnings. Kariuki and Kamau(2014) posits that if past profitability is a good proxy for future profitability then profitable firms could borrow more since the likelihood of paying back the debt is greater. Myers and Majluf (1984) postulate a negative relationship between earnings and debt using the Pecking order theory.

Tax shield is believed to be as important as it affects the amount of debt held (Barclay & Smith, 1999). To avoid paying more tax firms prefer to take more debt. Interest multiplied by the corporation tax rate yields tax shield which is a benefit to the firms. This benefit is promoted by static trade off theory which predicts that the more tax amounts that a firm has to pay the greater the debt it will have in its capital structure Firms with higher non debt tax shields are likely to use less debt (Fisseha, 2010).

Dividend is the amount of profits paid to the owners of the firm. When dividend payout ratio is maintained at low levels it means that most earnings are retained and ploughed back into the firms operations. The pecking order postulates a positive relationship between the debt level and dividend payout. A lower dividend payout ratio implies lower debt level (Ashamu, Abiola & Badmus, 2012). Key firm characteristics in the Agricultural segment were found to be profitability and liquidity in the commercial services sector. Size of the firm was the only key determinant of capital structure, while

profitability in the manufacturing sector found to be significantly correlated with debt ratio and in the construction and allied sector profitability, tangibility and non-debt tax shields were found to be the key firm characteristics that influence choice of capital structure (Muema, 2013).

Kariuki and Kamau(2014) indicate that the general theories of capital structure are applicable across the private firms as well. This may not be the case as public and private firms are inherently faced with different costs of financing and therefore this leads to different financing choices. Questions arise as to whether the predictions offered by the theories of capital structure are also applicable to private firms and what drives the capital structure of private firms and are they any different from those that drive the capital structure of public firms. A study by Kaijage and Elly(2014) found that size and growth positively influence in a significant way the capital structure of Deposit Taking Microfinance institutions (DTMs) in Kenya. Furthermore they also found that liquidity, profitability and tangibility of assets have been found to be negatively influencing capital structure of these institutions. However the sample size of the study was too small, whereby only seven DTMs out of nine licensed were considered for the period 2008-2012. One of the main insights of the existing literature is that companies trade-off the potential benefits of adjusting their capital structure and the vast majority of the available empirical evidence on this issue involves securities exchange quoted companies, that appear to frequently adjust their capital structure (Kariuki & Kamau, 2014).

This study therefore seeks to find the influence of firm characteristics earnings, tax shield, dividend, interest cover and moderating effect of firm size on the capital structure of private manufacturing firms registered by the Kenya Association of Manufacturers as per the firms' directory (KAM, 2015). Manufacturing firms engage in the production of tangible physical goods. In Kenya import substitution, market liberalization and export promotion greatly influenced Kenya's industrialization since independence in 1963.

Kenyan industry relied on high-value addition and as Kenya approached independence there were racial inequalities, unemployment and landlessness among Africans. Adjustment to the Agricultural policy was made by publishing Swynnerton Plan of 1954. The plan supported agro-industries and overall industrial development (Chege, Ngui & Kimuyu, 2014). At independence in 1963, the government realized the limited local capacity to create industrial activity and employment and government enacted laws to retain and attract foreign investment. Examples included the Foreign Investment Protection Act in 1964 that allowed investors to repatriate their profits and interest on loans (Chege *et al.*, 2014).

Industrial Commercial Development Corporation (ICDC) and the Development Finance Company of Kenya (DFCK) offered concessionary credit to all investors including indigenous investors. Foreign direct investment (FDI) during the first decade of Kenya's independence resulted in the establishment of Rivertex, Kicomi and United Cotton Mills. Textile industry continued to dominate in the Kenyan manufacturing sector until mid-1980s when trade liberalization witnessed import of cheap textile goods and secondhand clothes. This downturn was somewhat salvaged in 2001, when the US government passed the African Growth and Opportunities Act (AGOA) that boosted export of textile and garments. Food processing had already begun to dominate manufacturing accounting for a 331/3% of total manufacturing output in 2010 (Chege, *et al.*, 2014).

Kenya's industrial future is likely to be tilted by discoveries of iron ore in the eastern part of the country and the discovery of oil in northern parts of the country coupled with devolution and creation of county governments (Ministry of Industrialization and Enterprise Development, 2011).

1.2 Statement of the Problem

Many commercial entities including private manufacturing firms have a deficit in their funding. This constrains their capital structure where the mix of debt and capital is not sufficient to meet all their viable investment needs. These firms therefore employ prudent measures to enable optimal use of financial resources. Firms may therefore face the challenges of capital structure by taking more loans, arranging for loan restructuring; negotiating longer repayment periods and increasing equity base (Turere, 2012). Companies have struggled with strong capital structures over the period and failed to make enough and sufficient liquidity to survive in the unavoidable contractions during the credit expansion cycles (Jamal *et al.*, 2013).

In Kenya many private manufacturing firms are struggling to operate while others have been compelled to shutdown. Others are operating at breakeven point. If this trend continues the hope of rising to a middle level economy is dashed. Manufacturing sector employees about 20% of total workers in the economy and with optimal capital structure this proportion can be improved further (Kung'u, 2015). Optimization of the firm's value is not an easy task since it involves the selection of debt and equity shares in a balanced percentage keeping in mind various costs and associated benefits. It is noted that a wrong capital structure decision or choice may cause a company financial distress that may eventually lead to bankruptcy (Owolabi, Inyang & Uduakobong, 2012).

Firms with free cash flows are faced with the problem of managers wasting them on empire building. An optimal capital structure cannot allow this because at the optimal capital level firms will utilize every available cash flow efficiently and optimally. The manufacturing firms therefore need to have a capital structure that regulates the cash holding levels. Debt therefore acts as a disciplinary device to force management to payout profits or free cash flows so that it is not wasted on perquisites and other benefits that may be available to management (Kariuki, Namusonge & Orwa, 2015). To maximize the firm's value, firms must have effective strategies and ways of ascertaining

appropriate amounts of capital, that is, the capital structure (Wahome, Memba & Muturi, 2015).

Firms choose alternative capital structures such as a large amount of debt or very little debt, can arrange lease financing, use warrants, issue convertible bonds and sign forward contracts and swaps in setting a capital structure that maximizes overall market value of firms (Ngugi & Afande, 2015). Despite their important role of development and employment creation in Kenya manufacturing firms often face difficulties to benefit from different sources of funds raised. Sources of funds are generally the same but some firms do better than others and that some companies fail to achieve success even with ample funds and the right business ideas. This clearly implies that there is something beyond success; capital structure is one such a factor for success (Wachilonga, 2013).

Studies done in this area have not touched on private manufacturing firms(Kiogora, 2000; Chode, 2003; Kinyua, 2005; Kuria, 2010; Turere, 2012; Muema, 2013; Kiajage & Elly, 2014; Kariuki & Kamau, 2014; Ngugi & Afande, 2015; Wahome, Memba & Muturi, 2015; Kung'u, 2015). It is for this reason that this study sought to determine the influence of firm characteristics on capital structure of private manufacturing firms in Kenya using both secondary data and primary data and establishing the moderating effect of firm size. These include earnings, tax shield, dividend payout, interest cover, and firm size.

1.3 Research Objectives

1.3.1 General Objective

The main objective of the study was to ascertain how firm characteristics influence the capital structure of private manufacturing firms in Kenya.

1.3.2 Specific Objectives

- i. To establish the influence of earnings on the capital structure of private manufacturing firms in Kenya.
- ii. To determine the influence of tax shield on the capital structure of private manufacturing firms in Kenya.
- iii. To establish the influence of dividend payout on the capital structure of private manufacturing firms in Kenya.
- iv. To determine the influence of interest cover on the capital structure of private manufacturing firms in Kenya.
- v. To determine the moderating effect of firm size on the relationship between firm characteristics and capital structure of private manufacturing firms in Kenya.

1.4 Research Hypotheses

H₀₁ Earnings have no significant influence on capital structure of private manufacturing firms in Kenya.

H₀₂ Tax Shield has no significant influence on capital structure of private manufacturing firms in Kenya.

H₀₃ Dividend payout has no significant influence on capital structure of private manufacturing firms in Kenya.

H₀₄ Interest cover has no significant influence on capital structure of private manufacturing firms in Kenya.

H₀₅ Firm size has no moderating effect on the relationship between firm characteristics and capital structure of private manufacturing firms in Kenya.

1.5 Significance of the Study

The main reason why study manufacturing firms is that manufacturing sector is the most important sector in Kenya after agriculture in contributing to Gross Domestic Product, Employment and Foreign Exchange. In the year 2012 it was recorded that the manufacturing sector accounted for 34% of total foreign exchange earnings, employed 20% of workers in the economy and contributed to 10% of the GDP (KAM, 2013).

1.5.1 Government and other Stakeholders

Manufacturing firms are vital in Kenya's economy in terms of contribution to Gross Domestic Product (GDP) and employment creation as seen above. This study will alert the government on financial infrastructure and policies that will support private manufacturing firms. The government will formulate monetary and fiscal policies to enable private manufacturing firms to optimize their capital structure decisions. Business advisors and financial analysts will be interested in knowing critical factors that are considered in designing capital structure in manufacturing firms.

1.5.2 Private Manufacturing Firms

Management of private manufacturing firms will be able to make guided choices of capital structure to remain competitive. The shareholders will be able to make the right decisions for growth and profitability of their firms. The findings of this study will establish if the influence between a firm's capital structure and the firm characteristics in the private manufacturing industry are any different.

1.5.3 Chief Finance Officers (CFOs)

The findings of the study will help chief finance officers of manufacturing firms to design a capital structure that is optimal to their firm, a copy of the findings will be availed to the chief finance officers who will respond.

1.5.4 Kenya Association of Manufacturers (KAM)

The study results will enable firms registered by KAM to appreciate and realize the importance of optimal capital structure and a copy of the research findings will be supplied to the KAM offices in Nairobi, Kenya.

1.5.5 Researchers and Scholars

The study results will also assist scholars and researchers in theory advancement and thereby contribute to the body of knowledge while showing how manufacturing firms attain their optimal capital structure. The study may also help to modify theories.

1.6 Scope of the Study

This study was carried out on private manufacturing firms listed by Kenya Manufacturers Association as at 2015, in the members' directory of 2015 between 2015 and 2016. The study focused on private manufacturing firms since manufacturing is mainly carried out by the private sectors whose goods meet both local and export demand more so in the face of expanded regional bloc of East African community. Apart from meeting the effective demand in this country they will create employment. The private manufacturing firms studied were those listed in the Kenya Association of Manufactures directory 2015 excluding members who were engaged in consultancy and service sectors. Earnings, tax shield, dividend payout, interest cover will be the independent variables and firm size as a control variable while capital structure as the dependent variable.

1.7 Limitation of the Study

The major limitation in this study was that some private manufacturing firms considered financial information as confidential and hence were not willing to give financial information. Nonetheless the researcher managed to obtain data for 80 firms on the

document review form for secondary data and 144 questionnaires for primary data. The respondents were assured that no individual's information and firm responses from CFOs would be disclosed and the identity of persons and firms involved would be treated with utmost confidentiality.

The study did not focus on public manufacturing firms and thus the findings may not represent the entire manufacturing industry. In addition, the study did not focus on private manufacturing firms and thus the results may not represent the case in all manufacturing firms in Kenya.

The theories that guided this study are trade off theory, signaling theory, pecking order theory, agency theory and market timing theory. However the researcher did not find any theory that links the entire independent, dependent and moderating variable.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

The chapter presented review of relevant literature on firm characteristics of capital structure of manufacturing firms. It reviewed relevant theories and information on these characteristics from other researchers who have conducted studies in this field. Literature review helps in generating the conceptual framework for the study by identifying the important issues in capital structure. The chapter also reviewed related empirical literature and linked the study variable to theories.

2.2 Theoretical Review

A theory is a statement which provides a general explanation to an issue and researchers should be conversant with theories that are applicable to their area of study. A theoretical framework guides the researcher on variables to be measured. The theories that will guide this study are trade off theory, signaling theory, pecking order theory, agency theory and market timing theory (Ngumi, 2014).

2.2.1 Trade off Theory

The trade off theory was developed by Myers and Majluf in 1984 and considered the tax advantage and costs of debt. The trade-off theory of capital structure states that value-maximizing firms obtain an optimal capital structure by balancing the personal tax, bankruptcy, or agency costs against tax shield (Myers 1984). In this theory value maximizing firms obtain optimal capital structure by balancing costs of debt and the benefits of debt such as tax shields. In this study firm size is linked the trade off theory in the sense that large firms are more diversified taking up debt that will increase tax shield. The benefits accruing from tax shield will be traded off against bankruptcy and

financial distress costs. The findings of Rajan and Zingales (1995) are in line with the static trade off theory where tangible assets are appropriate for purposes of raising debt. The static trade off theory predicts that each firm adjusts gradually towards an optimal debt.

This theory is linked to the variables of interest coverage because a high coverage ratio implies a lower debt and with less debt firms will have low potential bankruptcy costs. The static trade off theory is related to dividend payout in the sense that there is an adverse selection between dividend payout and debt level of a firm. Low dividend payout ratio implies increase in the equity base for debt capital giving a low chance of firm going into liquidation (Roerink, 2014).

Cost of finance is an allowable deduction for tax purposes and this encourages a firm to take more debt in its capital structure while enjoying tax shield advantage. Tax shield is thus a cash inflow for the firm. Under trade off theory a firm can borrow to a point whereby interest tax shield is offset by the cost of financial distress (Modigliani & Miller 1963). We can obtain optimal capital structure by balancing the tax advantage of debt use and leverage related costs. Myers (1984) mentioned that firms adopting the trade off theory always set a target debt ratio and gradually moves towards achieving it. This theory was identified by Myers (1984) as the static trade off theory. The static trade off theory suggests that firms with higher profitability have higher debt ratio and the firms will not risk financial distress due the presence of tax shields. Profitable firms necessitate a higher target debt ratio to ensure higher tax saving from debt, lower probability of bankruptcy and higher over investment. This theory contradicts the pecking order theory which suggests that profitable firms have less debt.

Possibility of default on debt increases with increase in level of debt beyond the optimal point. Should the firm default on payment of the loan then the control of the firm will be shifted from shareholders to bondholders who try to repossess their investment through the process of bankruptcy. This therefore implies that the potential benefits from

employing leverage are overshadowed by the potential costs of bankruptcy (Muema, 2013). Doubts were raised over the fact that there was off setting cost of debt in Modigliani and Miller theory. Therefore a discussion ensued saying that optimal leverage should be found (Shyam-Sunder & Myers, 1999). Debt enables the possibility to deduct interest charges raising incentive for higher leverage in order to maximize the tax shield (Fisseha, 2010).

2.2.2 Signaling Theory.

Signaling theory was introduced by Ross (1977). In this theory capital structure decisions signals outsiders on insiders' decisions. This theory postulates a positive relationship between earnings and leverage hence this theory supports the explanatory variable earnings. The main idea of the theory is that the capital structure decisions signals outside investors about insiders' information. In other words only managers know the true distribution of the firm's returns. The term signal refers to the action taken by management in providing an indication to the investor about how the management examines the firm's prospects (Brigham, Houston, Chiang, Lee & Ariffin, 2010).

Managers are more relaxed with equity financing than debt financing because if firms go bankrupt managers may lose their jobs. When managers keep on increasing debt it signals higher future cash flows and the confidence that managers have towards the firm. Consequently investors would interpret the high level of debt as a sign of high quality and profitability (Brigham *et al.*, 2010).

2.2.3 Pecking Order Theory

This theory was developed by Myers in 1984 and postulated that firms first used earnings before going for debt and lastly equity. The pecking order theory in this study is linked to the independent variable earnings in the sense that when earnings are high or when firms are more profitable they tend to use retained earnings first in their investments and their transaction needs. Once the earnings are exhausted the firms will

look out to outside suppliers of debt and when this is exhausted firms look up to equity issue hence pecking order of financing operations.

According to Muema (2013) the pecking order asserts that firms prefer internal finance and hence firms with liquid assets will finance their investment with less debt. The pecking order theory also supports the variable tax shield in the sense that profitable firms with high tangible assets will prefer to use less debt that will occasion increased non debt tax shields computed on depreciation. The influence of earnings on debt is better explained by pecking order theory where there is an ordered preference of financing starting with retained earnings as the main source of finance followed by debt and last resort would be equity financing. According to pecking order theory there is a positive relationship between dividend payout and debt ratio and instead of distributing more dividend and meeting the financial needs of the firm through debt firms retain profits and earnings.

Muema (2013) posits that the pecking order theory is based on costs derived from asymmetric information between managers and the market. Myers and Majluf (1984) posits that firms should be following a hierarchical order of financing decisions when it comes to choice of capital structure by considering their benefits. This theory was designed to limit the inadequacies of information asymmetry. Any issuance of debt or equity is assumed to be generating a signaling effect to the investors where the firms are presumed to be doing well when firms are buying back their shares and vice versa. Therefore the pecking order theory supports the fact that firms will use internal funds first. However if internal funds are exhausted the firms will be financed using external funds and issue of shares will be the last resort when choosing capital structure (Jamal *et al.*, 2013). Internal financing preferred to external financing and that the firms will only consider equity shares when their debt capacity is optimal (Leary & Roberts, 2008).

Abor (2008) posits that existence of information asymmetries between firms and likely debt providers or finance providers causes relative costs of finance to vary among

different sources of finance. An internal source of finance where the funds provider is the firm will have more information about the new equity holders, thus this new equity holders will expect a higher rate of return on their investments. This means it will cost the firm funds. Similarly this arrangement could be provided between internal finance and new debt holders.

According to Graham and Harvey (2001) the main contender to the trade off theory is the pecking order theory which suggests that actual corporate leverage ratios do not reflect capital structure target but rather the widely observed corporate structure practice of financing new investment with internal funds when possible and issuing debt rather than equity if external funds are required. According to pecking order model management is reluctant to issue underpriced equity. Profitable firms finance their investment following the pecking order theory but using retained earnings first and then followed by debt and finally by equity shares(Graham & Harvey, 2001).This theory is therefore relevant to my study as profitable firms are expected to use less debt in line with the pecking order theory

2.2.4 Agency Cost Theory

This theory was introduced by Jensen and Mecklen in 1976 and asserted that agency costs arise due to conflict between equity holders and managers as also between debt holders. In this study the agency cost theory is linked to and affects the independent variable firm size. Accordingly large firms will take up more debt which will attract more interest payments that have a positive effect on the agency problem. The management of various firms will have to scale down on those activities that create conflict between them and owners. The managers of these firms will therefore utilize the assets and resources efficiently thereby enabling them to service the debt obligations. The agency cost can be reduced when firms have a sufficient tangible asset that enables them to access sufficient debt which is easily serviceable. Managers are able to control

tangible assets in favour of shareholders but against the expectations of debt holders; they may therefore invest in profitable ventures.

Jensen and Mecklen (1976) introduced the agency cost theory. An agency cost arises when there is conflict of interest between equity holders and debt holders. Myers (1977) found that firms with large assets and growth opportunities had agency problems. Agency theory takes debt as an important factor that reduces conflict between managers and shareholders. Management and shareholders will both tend to act in their own selfish interests; management might make financing decisions which are not in line with aim of maximizing of shareholders wealth. Therefore it is important to ascertain the level of debt in the capital structure of firms so as to reduce conflict within firms. Debt coupled with interest costs and principal repayments will be able to reduce the agency costs (Burferna, Bangassa & Hodgkinson, 2005). This is because managers should be concerned about losing their employment and are forced to manage the firm as efficiently.

2.2.5 Market Timing Theory

This is a recent theory developed by Baker and Wurgler in 2002 and accordingly the current capital structure is the cumulative outcome of past attempts to time the equity market. In this theory firms issue new shares when they perceive these to be overvalued (Luigi & Sorin (2009)). Market timing implies that firm's issues new shares when they perceive they are overvalued and that firms repurchase own shares when they perceive these to be undervalued. Also the influence of market timing on capital structure is highly persistent. The equity market timing theory challenges both the trade off theory and the pecking order theory. The theory shows that firms issues more shares when the market value of shares are high, there after firms repurchase these shares when the market value of shares is low. The theory therefore shows that there is negative relationship between market value of shares and capital structure and that the leverage changes are strongly and positively related to their market timing. Thus the capital

structure of a firm is the cumulative outcome of past attempts to time the equity market (Cheng, 2014). Existing windows of opportunities allows firms to reduce cost of capital by issuing equity when market conditions are favorable (Baker & Wurgler, 2002).

2.3 Conceptual Framework

A concept is an abstract of general ideas deduced from given instances and needs not to be discussed and understood like the case of a theory (Kombo & Tromp, 2009). It is a set of principles and ideas from a relevant field of study acting as a research tool to aid the researcher to develop and understand the situation under study (Ngumi, 2013). When the frame work is properly articulated it assists researchers derive meanings of their findings and that it forms the basis of negotiations to be tested and scrutinised (Symth, 2004). My conceptual frame work is arrived at after reviewing various variables used in a number of studies hence derived from literature review.

Fig 2.1 conceptualizes the firm characteristics namely earnings , tax shield, dividend , interest cover and firm size influence on capital structure of private manufacturing firms in Kenya registered with Kenya Association of Manufacturers (KAM) .

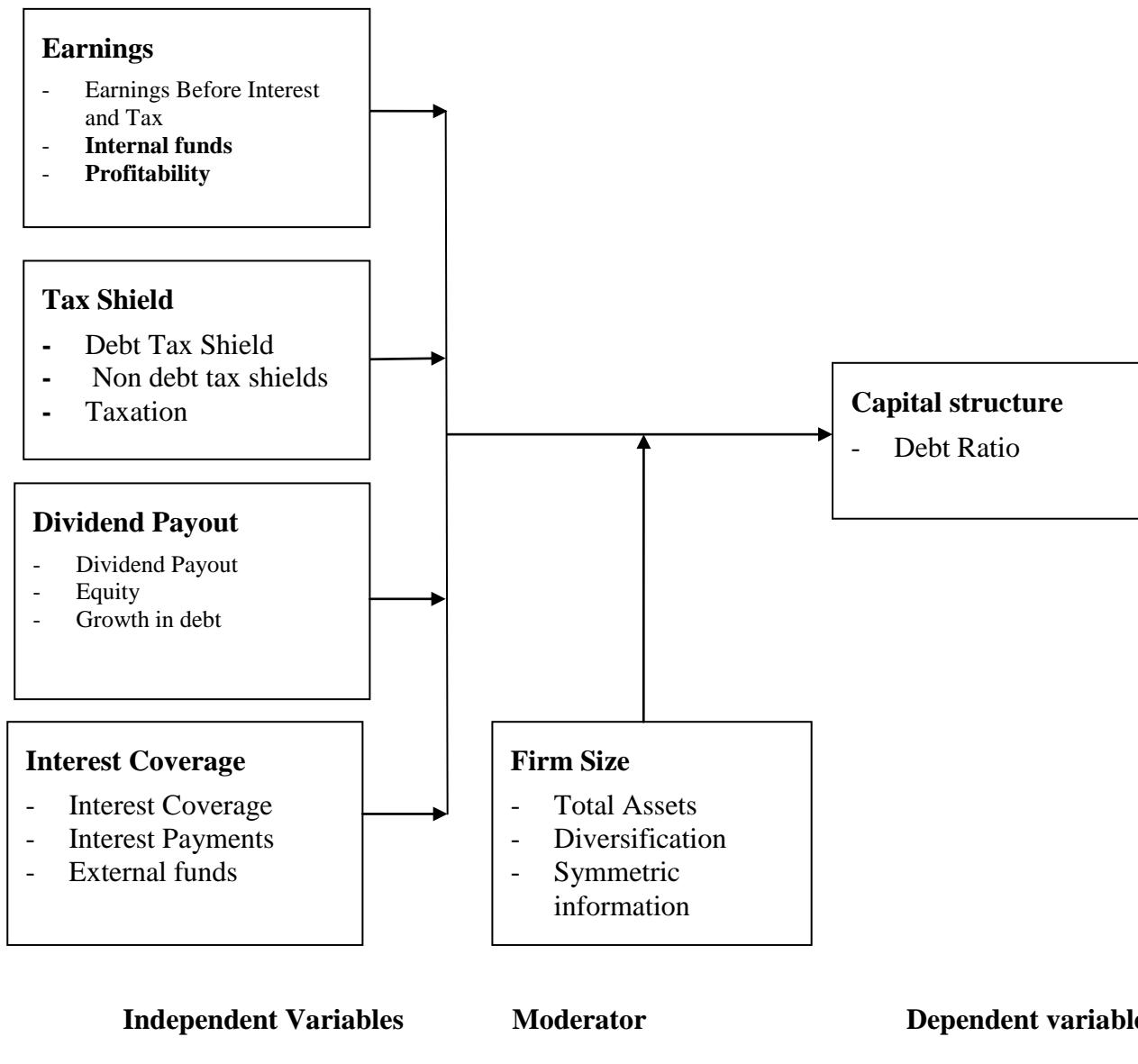


Fig. 2.1 Conceptual Framework

2.3.1 Earnings

According to Köksal, Orman and Oduncu (2013) trade off theory predicts a positive relationship between earnings and leverage. Reasons being lower default risk and interest tax shields of debts are more valuable to firms. However Frank and Goyal (2008) argue that trade off theory can also be viewed as predicting an inverse relationship between leverage and earnings. This would be true if earnings are a better proxy for growth opportunities than market to book value ratios. Moreover dynamic trade off theory models generally predicts a negative relationship between debt and earnings (Köksal *et al.*, 2013). Thus the trade off prediction of profitability or earnings is ambiguous. Pecking order on the other hand predicts a negative relation between debt and profitability as profitable firms can use earnings to fund investments and hence less need for an external debt.

Firms prefer raising capital from retained earnings then from debt and lastly equity. If pecking order applies then higher earnings will correspond to lower debt ratio. As per trade off theory, agency costs, taxes and bankruptcy cost push more profitable firm towards debt. In trade off theory profitable firms prefer debt to benefit from tax shields if past profitability and earnings is a good proxy for future profitability and earnings. Profitable firms can borrow more as the likelihood of paying back loans is greater. Accordingly trade off theory predicts a negative relationship between profitability and debt ratio (Muema, 2013).

Kabede (2011) asserts that firms prefer internal finance first, and then they will issue safest security first after which hybrid securities such as convertible bonds. Accordingly firms that are profitable and therefore generate high earnings are expected to use less debt. One of the main theoretical controversies is the relationship between leverage and profitability of a firm. Profitability is a measure of power of a firm which is the basic concern of its shareholders. The influence of earnings on debts is well explained by pecking order theory.

According to pecking order theory there is an ordered preference of financing starting with retained earnings as the main source then followed by debt and last resort would be equity financing. When a firm is profitable and seem to have more earnings will choose to have a lower debt, hence a negative relationship between earnings and debt ratio. However according to trade off theory, high earnings give high level of borrowing capacity, promoting tax shields. Agency cost theory also predicts that profitable firms will make more debt in their structure to control the activities of managers. Thus trade off theory hypothesizes a positive influence of earnings in debt level (Fisseha, 2010).

This conflicting influence is also noted by Nguyen and Ramachadran (2006) who notes that cash flow rich firms may suffer from agency problems of free cash flows. Leverage may therefore be increased to discipline managers, hence predicting a negative influence between capital structures and earnings (Kariuki & Kamau, 2014).

The empirical result of a study conducted by Afza and Hussain (2011) in Pakistan revealed that firms with high earnings used retained earnings, followed by debt financing and that equity financing was considered as the last resort. This evidence supports that pecking order theory. According to extant literature therefore we have strong empirical evidence on the negative influence of earnings on capital structure (Kariuki & Kamau, 2014). However some studies present a positive correlation and this may be due to lenders being more willing to lend to profitable firms. Hence more profitable firms have access to debt markets and would more likely benefit from greater tax shields (Feidakis & Rovolis, 2007).

In a study of UK property firms Ooi (1999) presents empirical evidence showing that corporate profitability is not an important determinant of capital structure. Similarly a study by De Jong *et al.* (2008) found insignificant inverse relationship between debt ratio and profitability across 42 countries. Jamal *et al.* (2013) contends with pecking order theory and argues that firms choose internal funds generated from earnings because internal funds are cheaper and not subjected to outside influence. However

earnings are expected to be negatively correlated with leverage (Titman & Wessels, 1988; Rajan & Zingales, 1995). As seen in earlier studies, the negative relationship conflict the trade off theory showing that more earnings pushes a firm to rely more on debt because of its ability to service it. Hence earnings can be both negatively and positively related to capital structure (Shyam-Sunder & Myers, 1999).

2.3.2 Tax Shield

Numerous empirical studies have looked at the influence of debt tax shield on corporate financing decisions in major industrialized countries and there are other tax shields on depreciations, research and development expenses and investments allowances that could substitute for debt tax shield. A firm with high non debt tax shield is less likely to finance with debt because tax shields lowers the effective marginal tax rate on interest deduction (Fisseha, 2010).

According to Graham (1999) taxation does affect capital structure but the magnitude of the effect is mostly not large enough. Static trade off theory predicts a positive relationship between corporate tax and capital structure or leverage. This is because interest on debt is allowable deduction for tax purposes as opposed to dividend payments which do not provide a tax advantage for debt (Köksal *et al.*, 2013). The influence of taxes on debt ratios has been difficult to clearly identify and available evidence is rather mixed (Frank & Goyal, 2008; Antoniou *et al.*; 2008). This could be explained by the uncertainty about what would constitute a good proxy for tax shield and also transaction costs makes it difficult to identify tax effects.

According to Köksal *et al.* (2013) firms with high amounts of no- debts tax shields will choose to have a lower debt, the same is true where high debt tax shield will make firms chose higher debts. Thus the static trade off theory predicts a negative relationship between capital structure and non-debt tax shield. Taxation and its relation to capital structure are explicitly linked to the applicable tax regime, and under the Japanese

classical tax system tax deductibility of interest is expected to induce preference for debt who formalized a framework in which tax deductions that are not associated with debt act as substitute for interest deduction. These non debt tax shields compete with interest as tax deductions. Firms with higher non debt tax shields are expected to have lower debt ratio. Thus non debt tax shields are negatively related with capital structure (Akhtar & Oliver, 2005).

Tesfaye and Minga (2013) asserts that relationship between non –debt tax shield and capital structure depends on which debt type, while it negatively influence short term debt and total leverage ratios it positively influence long term debt ratio. This finding partially supports the argument that the higher non debt tax shields the lower tax advantage that arises from interest deduction. According to Mbulawa (2014) firms with a high tax shield and marginal tax rate use practically less debt in the financing structure. In other studies tax was found to have statistically significant positive relationship with short term debts ratio for small firms suggesting that high tax rate signifies more short term debts. According to trade off theory a firm with high tax rate should use more debt and hence have more income to shield from tax.

2.3.3 Dividend Payout

In the static trade off theory there is an adverse relation between dividend payout and debt level of a company (Abate, 2012). The low dividend payout ratio implies increase in the equity base for debt capital and low chance of going into liquidation; whereas the pecking order theory shows a positive relation between dividend payout and debt ratio. Instead of distributing high dividend and meeting the financial needs from debt capital, management retains the earnings. Bancel and Mittoo (2004) found a negative relationship between dividend payout and long term debt thereby supporting the trade off theory. But Baral (2004) found that dividend policy for a firm does not have influence on capital structure. Dividend is the amount of net income that is paid out to shareholders. The bankruptcy theory maintains an inverse relationship between dividend

payout ratio and debt ratio. Dividend has a negative influence on debt ratio (Juca, Ferreira de Sousa & Fishlow, 2012). Dividend payout negatively influences longterm debt ratio which supports agency theory, that sees dividend payments and debt issues as substitutes in mitigating agency problems (Deesomsak *et al.*, 2004).

2.3.4 Interest Cover

Another variable to be considered is the interest coverage ratio expressed as net income before taxes, divided by interest payments. Interest cover has been examined as a determinant of capital structure increase in debt results in a higher default probability, thus a higher interest coverage ratio implies lower debt (Eriots, 2007). Basu and Rajeev (2013) also assert that interest coverage ratio has a negative correlation with leverage. And he states that a lower interest coverage ratio indicates a higher debt ratio.

2.3.5 Firm Size

Large firms are typically more diversified and less prone to bankruptcy (Rajan & Zingales, 1995). Kouki and Said (2012) state that according to the static trade off theory large firms have greater level of diversification to reduce cash flow volatility and hence bankruptcy risk is lower. Large firms have lower information asymmetry and are able to issue more equity shares compared to small firms. In this context debt ratio and small firm size have significant negative correlation Jamal *et al.*, 2013; Deesomsak *et al.*, 2004 & Al-Ajmi, 2009).

Large firms have been found to accommodate more debt on their capital structure as opposed to small firms (Mbulawa, 2014). The larger the firm is the more the probability that it will be able to repay and hence lenders may advance more to it than to smaller firms but this need to be considered with caution because not every firm can pay back. Empirical evidence suggests that relationship between size and capital structure is positive and significant for small firms. According to the trade off theory large firms are more diversified, less risky and not prone to bankruptcy (Basu & Rajeev, 2013). Jamal *et*

al. (2013) concurs that firms acquire large size due to debt financing. Ngugi and Afande (2015) reported that an increase in debt ratio is related to the firm size and holds that large firms are well diversified and not susceptible to bankruptcy.

Research on determinants on capital structures was initially focused on US firms. Classical research was carried out by Titman and Wessels (1988) where they studied determinants of capital structures. Attributes namely asset structure, non-debt tax shields, growth, uniqueness, industry classification, firm size, earnings volatility and profitability were tested to see how they affected the firms debt equity choice. The result showed consistencies with capital structure theories. One of the interesting conclusions drawn includes the negative relationship of debt to the uniqueness of a firm's line of business. The short term debt ratio was negatively related to firm size. Besides this a strong negative relationship was observed between debt ratios and past profitability. The study of Titman and Wessels (1988) did not provide strong empirical support on variables such as non-debt tax shields, volatility, collateral value and future growth (Fisseha, 2010). He also noted that there were many studies written by research scholars on capital structure choices in the US only.

To increase understanding of capital structure models Rajan and Zingales (1995) attempted to find out whether capital structure choices in other countries were the same, using the same variables; accounting data and monthly stock prices for five years 1987 to1991 were collected for all the G-7 countries namely US, Japan, Germany, France, the UK, Italy and Canada; banks were eliminated as their leverages are affected by government regulations. Rajan and Zingales (1995) noted that across the countries asset tangibility was positively correlated with leverage. The market to book value ratio was negatively correlated with leverage except for Italy. Having high valued stocks on the market would make firms issue more stock and not seeking debt. Size of the firm was positively correlated while profitability was negatively correlated with leverage in all except in Germany. Therefore the paper found that debt level was fairly similar across

the G-7 countries. This study also pointed out that some avenue for further research especially on unbiased sample collection, the actual determinants and institutional influences (Fisseha, 2010).

Bas, Gulgur and Kate (2009) examined determinants of capital structures decision of firms in developing countries collecting secondary data for 11,125 firms from World Bank for 25 developing countries. They concluded the importance of firm level variables such as tangibility and profitability. According to the results private, small, medium and large firms follow the pecking order theory in their debt financing decisions but listed firms prefer equity financing to long term debt financing. Internal funds do not have an influence on the debt financing decisions (Fisseha, 2010). As firms grew larger, they become more diversified thereby reducing risk of failure and as a result they have a higher leverage. Due to information asymmetries small firms have limited access to finance, they therefore face higher interest rates costs.

Tesfaye and Minga (2013) looked at industry characteristics with a view to establish variations in capital structure of sampled firms. Results indicated that debt ratios of firms in regulated industries are higher than the manufacturing industry. Thus industry specific characteristics such as technologies and assets employed as well as regulations to which industries are subjected influence capital structure of firms (Frank & Goyal, 2009). Firms in durable industries also tend to have higher debt ratios than those in manufacturing. In contrast those in service and other industries have a lower debt ratio than those in manufacturing industry.

A study by Nadeem and Zongjun (2011) found that profitability, liquidity, earnings volatility, tangibility related negatively related to the debt ratio whereas firm size positively influenced debt ratio but non debt tax shields and growth opportunities did not appear to be significantly related to the debt ratio in the manufacturing industry of Pakistan. The findings of this study were consistent with the trade off theory, pecking order and the agency theory, which showed that capital structure models from

developed countries provide some help in understanding financing behaviour of firms in Pakistan.

Looking at insurance industry in Ethiopia, Abate (2012) found that size, growth business, non debt tax shield to have significant positive influence on capital structure choice of insurance companies. However, profitability, liquidity, dividend payout and age had no significant influence on the capital structure choice. In a study of capital structure of Ethiopian small manufacturing cooperatives Kabede (2011) found that size, age, tangibility and growth variables are the most vital variables determining capital structure of these firms.

Size was statistically significant with a positive coefficient which is consistent with trade off theory that suggests leverage increases with firm's size as being consistent with agency theory where large firms have a reputation in debt markets and consequently face lower agency costs of debt (Frank & Goyal, 2009), but digress from the pecking order theory that suggests that firms that are large and better known face lower adverse selection and can easily issue equity shares.

2.3.6 Capital Structure

According to Mohammedamin (2014) capital structure represents a mixture of debt and equity to finance its operations. It is a composition of retained earnings as well as debts and equity shares. Capital structure decision as financing decision is one of the three major decisions made by managers in corporate in the corporate world. The others are capital budgeting and working capital management decisions. According to corporate finance literature, we have a number of proxies that measures capital structure and these may include market value debt ratio, book value debt ratio, and interest coverage ratios. Book value debt ratio is used repeatedly in many studies of empirical studies pertaining to capital structure firm characteristics. However, majority of researchers including Najjar and Petrov (2011), Solomon (2012), Jones, Woldemikael, Fisher, Hobbs, Prud'homme and Bal (2012), Mohamed and Mahmoud (2013) and Tornyeva (2013) employed total debt ratio calculated as total debt divided by total assets to measure leverage of firms. Some other researchers like Bayeh (2012), incorporate long term debt and debt to equity ratios, Lim (2012) incorporate long term debt ratio whereas Amanuel (2011) incorporate short term and long term debt ratios besides total debt ratio as a measure of leverage.

As one used by majority of previous researchers; including Najjar and Petrov (2011), Solomon (2012), Jones *et al.* (2012) Mohamed and Mahmoud (2013), and Tornyeva (2013) the researcher of this study employed total debt ratio (also known as total leverage) to measure debt ratio of private manufacturing firms which in turn represent their capital structure. The dependent variable capital structure is measured by debt ratio.

2.4 Empirical Review

Research by Ngugi and Afande (2015) showed that finance literature has developed far away from Modigliani and Miller's efficient market theory and the traditional approach to corporate finance based on the assumptions of traditional behavior, the capital asset

pricing model (CAPM) and efficient markets. There are two opposite approaches in the field of corporate finance more specifically the neoclassical theory and post Keynesian theory. Daskalaki and Vasiliou (2006) stated that the neoclassical theory had a strict approach regarding investment decisions and that the major goal of the firm was to maximize shareholders wealth which was also achieved through capital structure decisions

A study by Mouamer (2011) tested the explanatory power of capital structure models in Palestine using a total of 15 firms with variables being leverage, profitability, liquidity, age of firm, asset structure, firm size, for panel data methodology which involves pooling of observation of a cross section of units over several times. In this research relationship between tangibility and total debt were positive but insignificant. Liquidity was found to be significantly negative with short term debt indicating that firms with higher liquidity pay off short term debt using liquid assets. Growth opportunities were found to be negatively related with long term debt with the ability of firms to roll over short term debt. Fixed assets and long term debt were positively related while short term debt was negatively related. The results explained that large firms have the capacity and opportunity to borrow whereas small firms remain using short term financing.

Research by Afza and Hussain (2011) on the industry specific attributes of automobile sector affecting capital decisions for 22 firms in the automobile sector in Pakistan found that tangibility was positively influencing leverage but insignificant. Thus firms with large capital structure favour debt financing to benefit from tax shields supporting the static trade off theory. In these results the relationship between profitability and leverage was significantly negative. It was then analysed and concluded that that profitable firms financed their investment following the pecking order theory but using retained earnings first and then followed by debt and finally by equity shares. Leverage and taxes were found to be positively related while leverage and non debt tax shield had an insignificant and negative relationship. Liquid firms prefer internal funds which was in line with the

pecking order theory. The relationship between cost of debt and leverage was insignificantly negative indicating that firms with high cost of debt avoid debt financing which was consistent with trade off theory. Size was positively related to leverage signifying that large firms opt for debt financing since bankruptcy costs were only a small part of the firms value and therefore less prone to financial distress.

According to Qiu and La (2010) on large firms showed that firm size and debt ratio were insignificantly related and debt ratio increased with tangibility but decreased with profitability, growth and firm risk. A negative relationship between debt ratio and profitability showed that pecking order theory is more relevant in the Australian case than the trade off theory. The negative influence of profitability growth prospects and firm risk were significant and in line with bankruptcy costs, signalling effect and agency theories. These results contradicted Deesomsak *et al.* (2004) who argued that risk, profitability and growth do not significantly influence capital structure in Australia. This research signified that more profitable firms are more concerned about agency costs while unprofitable firms are more concerned about bankruptcy costs in making their capital structure decisions. This research also noted that the bankruptcy costs, agency costs, signalling effects and issuance of equity shares were the main concerns of Australian firms capital structure decisions.

A study by Al- Ajmi *et al.* (2009) on capital structure decisions in a zakat environment with riba prohibition in Saudi Arabia identified that majority of the Saudi firms depended more on short debt than long term debt. The negative correlation between profitability and debt ratio was consistent with the pecking order theory implying that firms prefer to use internally generated profits for investments. Size of the firm was found to be a significant determinant of the debt ratios because large firms face lower bankruptcy risks and it is easy for them to get loans from financiers and banks. Following the pecking order theory growth was positively related to debt ratio. Tangibility was significantly negative for debt ratio, longterm debt ratio and but

insgnificant for short term debt ratio. It was explained that firms don't finance longterm investment with longterm debt.

A Study by Abor and Biekpe (2009) demonstrated that firm age was positively related to longterm debt ratio and negatively related to short term debt ratio. From the findings older firms have a better credit historyand hence easy to acess debt compared to new ones. Firm size was positively related to longterm debt ratio implying that older firms are more diversified than new firms and are perceived to have lower risk. Asset structure and longterm debt ratio were found to be positively ralated implying that small firms were found to be risky ventures and that small enterprises need more collateral to access longterm debt. Conversely asset structure and short term debt ratio have an inverse relationship.

Profitability and both longterm debt ratio and short term debt ratio have a relationship that is consistent with the poecking order theory, showing that less profitable businesses require more external debt thanmore profitable firms. Growth and longtrem debt ratio are posively related while growth and short term debt are negatively related. They also found out that relationship between risk and the debt ratios was negative but statistically insignificant. Accordingly short term debt was found relevant as a financing source for small and medium enterprise in Ghana, although these firms needed longterm debt to finance growth (Abor & Biekpe, 2009).

A study conducted by De Jong, Kabir and Nguyen (2008) around the world analysed the importance of firm specific variables and country specific variables.The variables were tangibility, business risk,firm size,tax rate, growth, profitability and liquidity; the country specific variables were legal enforcement,shareholder or creditor rights protection, market based or bank based financial system, stock or bond marketdevelopment. The specific leverage determinantsdiffer acrosscountries but previous researches assume equal influence of these factors. Secondly researchers point out that although there was direct influence of country specific variables on the firms

capital structure there was also indirect influence because country specific factors also influence the roles of firm specific leverage characteristics.

Jamal *et al.* (2013) investigated the relationship between capital structure and ownership structure in an emerging market of non financial Jordanian firms. The dependent variable was debt ratio, while the independent variables were dividend per earning ratio, profitability, firm size, business risk, tangibility, liquidity, and growth rate. Dividend per earnings had no significant influence on total debt ratio confirming that investors consider dividend per earning ratio when making capital structure decisions. There was limited support that investors would consider profitability when making capital structure decisions. Business risk and debt ratio were negatively related implying that firms with volatile earnings are liable to use less debt and supports the bankruptcy costs theory. Tangibility showed positive relationship with total debt ratio which supports the agency cost theory. The negative relationship between tangibility and institutional ownership showed that investors consider tangible assets an indication of debt capacity and since investors would prefer to invest in less debt firms. Liquidity was found to be positively related with total debt ratio as also with institutional ownership implying investors consider high liquidity firms who are capable of meeting their obligation and this firms also face lower risk.

Growth rate was found to be significantly positively related with total debt contradicting the agency cost theory (Al-Najjar & Taylor, 2008). Jordanian firms with high growth rate financed investments using debt. Firm size was found to be positively related with total debt ratio meaning large Jordanian firms are less susceptible to bankruptcy. Therefore the Jordanian firms adopted the same variables as developed countries(Kansil & Singh, 2017).

. A study by Eldomiaty (2007) on capital structure of an emerging economy aimed at examining the extend to which capital structure decisions are affected by trade off theory, pecking order theory and free cash theory. The dependent variable being debt

ratio. As postulated in the trade off theory longterm debt ratio and ratio of debt to equity are positive and significant implying that corporate debt ratio adjust positively according to the long term debt changes.

Firms may increase debt in order to benefit from tax savings since the effective corporation rate of tax was found to be significantly positive. The negative coefficient of the bankruptcy risk meant that firms reduce debt ratio to pass up higher degrees of bankruptcy risk (Eldomiaty, 2007). As per the pecking order theory longterm debt was positive and significant indicating that debt ratio adjust in a positive way as per the longterm debt changes.

The negative and significant coefficient of growth,operating income and return on investments agreed with the pecking order theory and in contrast sales growth was positive and significantand therefore not in line with the pecking order theory. And also the significant positive coefficient of price earning ratio was observed and that when the price earning ratio was increasing companies increased debt instead of issuing equity shares. As for free cash flow theory shortterm debt was significant and positive indicating that debt ratio adjusts positively in accordance with short term debt changes. Also to note was significant negative coefficient of interest rates which indicated that firms borrow when interest rates are low (Eldomiaty, 2007).

In the regression equation results indicated that independent variables were significantly high hence the construction of the model was quite indicative and finally the study concluded that the trade off theory and pecking order theory had a greater influence on the capital structure decisions showing that achieving target capital structure is multifaceted and that the theories donot provide a complete explanation of the capital structure decisions.

In their study Jamal *et al.* (2013) regarding large capitalized companies in Malaysia showed that profitability, tangibilty and liquidity had sginificant negative relationship

with leverage while firm size positively influenced debt ratio and that profitability was most influential variable of the capital structure in Malaysia. These results were consistent with several studies as also the capital structure theories. The firms opted for internal financing as opposed to external borrowing thus in line with the pecking order theory. Wiwattanakantang (1999) established that firm size was found to have a positive relationship with debt ratio showing large firms face lower bankruptcy costs and tend to attain more debt. Large well known firms obtain loans without providing collaterals. Large firms were more profitable and require higher target debt ratio to guarantee higher tax savings from debt.

Fisseha (2010) established that profitability, size, age and tax shield were significant determinants of capital structure in Ethiopian commercial banks. Profitability and growth established negative relationship and the remaining four variables tangibility, size, age and tax shield showed positive relationship with capital structure. There is consistency between profitability and pecking order theory, tangibility and static trade off theory. Profitability was negatively related with debt ratio implying that profitable firms maintain low debt, consistent with pecking order theory. Tangibility was positive but statistically significant coinciding with static trade off theory, pecking order and agency cost.

According to Muema (2013) profitability was significantly and positively related to leverage while tangibility was positively but insignificantly related to debt ratio. Size also had a positive relation with debt showing that larger firms have higher leverage. It was also found that growth was negatively related with debt ratio although at insignificant level. Liquidity was also found to be negatively related to debt ratio meaning that as liquidity rises less debt is used. But the non-debt tax shield had a positive but insignificant influence on debt ratio.

It was observed by Tesfaye and Minga (2013) that firm size had a positive influence on capital structure which was consistent with information asymmetry argument that large firms being more visible have lesser information asymmetry problems thereby affording

large firms to borrow more which is consistent with what other researchers established (Abor, 2008). The relationship between tangibility and debt ratio was mixed whereby in relation to longterm debt ratio it was positive and significant but for short term debt ratio it was negative and significant meaning that firms with more tangible assets use them as collateral to access longterm debt. This is in line with bankruptcy and agency theory which contend that firms having more tangible assets have lower bankruptcy and agency costs of debt (Frank & Goyal, 2009). While non- debt tax shield negatively influenced debt ratio and total debt ratio had positive influence on longterm debt ratio thus the higher the non-debt tax shields the lower the tax advantage that arise from interest deduction (Deesomsak *et al.*, 2004). As concerns dividend pay out it negatively influence longterm debt ratio which supports agency theory that sees dividend payments and debt issues as substitutes in mitigating agency problems.

Tesfaye and Minga (2013) looked at industry characteristics with a view to establish variations in capital structure of sampled firms. Results indicated that debt ratios of firms in regulated industries are higher than the manufacturing industry. Thus industry specific characteristics such as technologies and assets employed as well as regulations to which industries are subjected influence capital structure of firms (Frank & Goyal, 2009). Firms in durable industries also tend to have higher debt ratios than those in manufacturing. In contrast those in service and other industries have a lower debt ratio than those in manufacturing industry.

A study by Nadeem and Zongjun (2011) found that profitability, liquidity, earnings volatility, tangibility related negatively to debt ratio whereas firm size positively influenced debt ratio but non debt tax shields and growth opportunities did not appear to be significantly related to the debt ratio in the manufacturing industry of Pakistan. The findings of this study were consistent with the trade off theory, pecking order and the agency theory, which showed that capital structure models from developed countries provide some help in understanding financing behaviour of firms in Pakistan.

Abate (2012) while studying the insurance industry in Ethiopia found that size, growth business, non debt tax shield to have significant positive influence on on capital structure choice of insurance companies. However, profitabilty, liquidity,dividend payout and age had no significant influence on the capital structure choice. In a study of capital structure of Ethiopian small manufacturing cooperatives Kabede (2011) found that size, age, tangibilty and growth variables are the most vital variables determining capital structure of these firms.

Size was statistically significant and positivelyrelated which is consistent with trade off theory that suggests leverage inceases with firm's size as being consistent with agency theory where large firms have a reputation in debt markets and consequently face lower agency costs of debt but digress from the pecking order theory that suggests that firms that are large and better known face lower adverse selection and can easily issue equity shares (Frank & Goyal, 2009).

2.5 Critique of Existing Literature

Frank and Goyal (2009) researched on capital structure decision firm characteristics that are reliably important using publicly traded American firms from 1950 to2003.Six firm characteristics; industry median average, market to book value ratio, tangibility, profits, size, and inflation were significant. However, the period under study was sufficient to have included more variables, but this was not done. Kabede (2011) researched on the determinants of capital structure in Ethiopian Small Scale Cooperatives (SSMCs) using structured record review to collect panel data for 13 SSMCs of 5 years over the period 1998 to 2002. Though the results supported the capital structure theories the sample size used was too small and could not be generalized for all the SSMCs. The period of five years was also short, an extended period would be better.

Tse and Rodgers (2014) researched on firm characteristics of Chinese listed manufacturing and non manufacturing firms using pooled regression model. Though manufacturing sector was not any special the results could not be generalized to represent all firms. Fisseha (2010) carried a study on capital structure of seven commercial banks in Ethiopia using secondary data for the period 2000 to 2009. Research was exploratory with use of regression model. The results were in consistent and in support of the capital structure theories. However, the sample was too inadequate and could not be used to generalize the results to the whole banking sector.

Abate (2012) studied firm characteristics and capital structure of Ethiopian Insurance firms for the period 2003 to 2010 using panel data for nine insurance companies. Though the period was sufficient the sample size was too small to be representative of the entire insurance sector. Though secondary data was used it was not adequate.

Nadeem and Wang (2011) looked at the firm characteristics of manufacturing industry of Pakistan using panel data for a sample of 160 firms on the Karachi stock Exchange for the period 2003 to 2007. The findings were profitability liquidity, earnings volatility, tangibility size were significant. Non debt tax shield was not significant which is consistent with trade off theory, pecking order theory and agency cost theory. Although the sample size was adequate the period 2003 to 2007 was too short.

Kariuki and Kamau (2014) undertook a research on firm characteristics of corporate capital structure in food and beverage manufacturing firms in Nairobi and surrounding areas. They used descriptive research survey design collecting primary data from a sample of 36 firms and the key determinants were growth opportunities and size. The methodology is appropriate for the study save for the small sample which could not be generalized to all the firms.

Apart from Kariuki and Kamau (2014) who used primary data most of the studies have used secondary data and further they have concentrated on listed firms on various

securities exchanges, thereby using pooled panel data and employing either fixed or random effects regression models(Chode 2003; Kinyua 2005; Kuria 2010; Turere 2012; Ngugi & Afande ,2015).

Apart from this reason most have not used large samples and it is doubtful to use the small samples as representative of the thousands of companies across the divide. Majority of the methodologies used have not addressed the descriptive survey design. Looking at studies carried out in Kenya, Kariuki and Kamau (2014) concentrated mainly on one sector the food and beverages private manufacturing firms in Nairobi and its environs. Wahome *et al.* (2015) studied insurance firms using secondary data.

2. 6 Research Gaps

From the foregoing literature and above critique it is imperative to appreciate the work done by the distinguished researchers who only concentrated on listed firms on various securities exchanges where the sampled firms were inadequate and not representative. Kiogora (2000) established that firms follow pecking order theory in setting their capital structure and that profitability was the key firm characteristic in determining the capital structure of firms at Nairobi Securities Exchange (NSE). Chode (2003) researched on determinants of capital structures of public sector enterprises in kenya. Kinyua (2005) reveals that profitability, asset structure, management attitude towards risk and lenders attitude to the firm are key firm characteristics determining optimal structure of small and medium enterprises in Kenya. Kuria (2010) carried out a study on determinants of capital structure of firms listed on NSE and established that profitability and asset structure are the only determinants of capital structure.

Turere (2012) looked at firm characteristics in the energy and petroleum sector and revealed that firm size, age of firm, growth rate, and ownership structure are the key determinants of capital structure. Muema (2013) looks at looked at firm characteristics of firms under various segments of NSE; the agricultural segment had profitability and

liquidity being significant, commercial services segment had size being significant, manufacturing had profitability, while construction and allied had profitability tangibility of assets and non debt tax shields being significant. The energy and petroleum segment had profitability, tangibility, and size growth rate being key factors. Telecommunication, automobile and investment segments did not have factors that were significant and for all segments combined tangibility and non debt tax shield were the key determinants of capital structure.

Firm size was significant on capital structure of hotel and lodging SMEs in Eldoret town (Wachilonga, 2013). Kiajage and Elly (2014) established that size and growth opportunities positively influenced capital structure of licensed deposit taking microfinance institutions (DTMs) while liquidity profitability and tangibility had a negative influence. Kariuki and Kamau (2014) carried out the study using primary data established that growth opportunities and firm size to be the key determinants of capital structure in the food and beverages manufacturing firms in Kenya.

Ngugi and Afande (2015) established that asset structure , growth rate of firm, operating risk, profitability, age, industry type, size of firm and ownership control had had significant influence on capital structure of real estate firms in Kenya but they found taxation had least effect. The latest study so far recorded is that of Wahome, Memba and Muturi (2015) who established that profitability was found to be the key firm characteristic of insurance companies that are registered by Insurance Regulatory Authority (IRA).

Most studies done in this area have used secondary data only (Kiogora 2000; Chode 2003; Kinyua 2005; Kuria 2010; Turere 2012; Muema 2013; Kiajage & Elly, 2014; Kariuki & Kamau 2014; Ngugi & Afande 2015; Wahome,Memba &Muturi 2015; Kung'u, 2015). However, this study has also used primary data as also focusing on private manufacturing firms in Kenya.This study deviates from this looking at private manufacturing firms listed by the Kenya association of manufacturers (KAM) according

to their directory of 2015 with a total of 455 firms. Previous studies used mainly secondary data apart from Kariuki and Kamau (2015) who used primary data which this study is focused on using in addition to secondary data to be collected through survey data sheet and document review form.

This study focuses on the influence of firm characteristics; earnings, tax shield, dividend payout, interest cover and firm size on capital structure, firm size being a control variable. This study is distinct as it addresses the firm characteristics from target population of 455 CFOs from 455 private manufacturing firms listed with Kenya Association of Manufacturers (KAM, 2015).

2.7 Summary

The chapter has looked at theoretical review where a number of theories relevant to the study have been discussed. These theories include static trade off theory, signaling theory, pecking order theory, agency cost theory and market timing theory. The chapter has also addressed the conceptual framework on which the study is anchored and the variables have been reviewed backed with literature. Finally, various studies with their results, methodology and critique have been reviewed and research gaps shown. Despite extensive studies from the time of Modigliani and Miller vital issues remain unresolved about choice of capital structures for firms in many sectors including private manufacturing firms. Previous studies focused on listed firms or a particular sector only

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

This chapter looked at data collection, data processing and analysis. Data collection instruments and procedures are also discussed as well as the target population and the sample. Research methodology explains technical procedures in a manner appropriate for the study. It achieves this by addressing the research and sample designs used for the study, data collection and fieldwork conducted for the study and the type of data analysis done (Ngumi, 2014).

3.2 Research Design

This study used descriptive survey research design as it entails finding out what, who, where when and how of the firm characteristics (Kariuki *et al.*, 2015). Lavrakas (2008) describes a descriptive survey research design as a systematic research method for collecting data from a representative sample of respondents. Kariuki, Namusonge and Orwa (2015) stated that a good design is guided by an overarching consideration of whether the design answers the research questions and hypotheses.

A research design guides the choice of population, sampling procedure methods of measurement and plan for data collection processing and analysis (Sekaran & Bougie, 2010). A research design is a structure, or the blueprint, of research that guides the process of research from the formulation of the research questions and hypotheses to reporting of the research findings (Ngumi, 2014). In designing any research study, the researcher should be familiar with the basic steps of the research process that guide all types of research designs.

Qualitative research does not need to replace traditional empirical framework and can boost current research in finance as an invaluable prelude as was the case in the Lintner 1956 paper (Kaczynski, Salmona & Smith, 2014). Lintner's study of 1956 regarding dividend policy began as qualitative research study and it still holds true today after many years since he published his work. Lintner approached his work inductively to find out what directors, controllers, treasurers, and presidents at selected industrial companies had to say concerning dividend policies. Kariuki and Kamau (2014) in their study on food and beverage firms administered questionnaires to a sample of 36 CFOs out of which 30 were returned. Kariuki, Namusonge and Orwa (2015) used 156 self administered questionnaires to gather financial information from the CFOs of private manufacturing firms regarding optimal cash holdings. My study therefore hinges on the gains made by the above researchers to establish the influence of firm characteristics on the capital structure of private manufacturing firms in Kenya.

Qualitative research allows the researcher to explore and better understand issues at deeper level since it is made of different framework. What approach is best depends on the question at hand. In Lintner's case this was qualitative approach which produced results that are credible 50 years on (Kaczynski *et al.*, 2014).

3.2.1 Research Philosophy

The philosophy guiding this study is positivism, where the phenomena being observed leads to production of credible data, where the researcher used quantitative tools and methods in measuring and counting. Existing theories have been used to develop hypothesis which will be tested and confirmed in whole or part or refuted. Positivism adopts a clear quantitative approach to investigating phenomena, as opposed to post-positivist approaches, which aim to describe and explore in-depth phenomena from a qualitative perspective. Philosophy is concerned with views on how the world works and, focuses, on reality, knowledge and existence. Our individual understanding of reality has an effect of how we gain knowledge of the world meaning that our perception

of reality, and how we gain knowledge, will affect the conduct of the research (Leitch, Hill & Harrison, 2010)..

There are numerous reasons why an understanding of philosophical issues is important such as what is it about philosophy that gives it this seemingly vital role in human intellectual affairs? Is this simply a contingent fact of our intellectual history, or is there something distinctive about philosophy itself which gives it this authoritative place?' In answer to this question it could be argued that it is the nature of philosophical questions that best demonstrates the value of understanding philosophy (Crossan, 2003).

What could be described as the traditional scientific approach to research has its underpinnings in positivist philosophy. From the literature it is clear that positivism can be defined in various ways. Cohen, Manion and Morrison (2013) provide a useful insight into positivist thinking within social sciences with this description: 'Positivist approaches to the social sciences assume things can be studied as hard facts and the relationship between these facts can be established as scientific laws. For positivists, such laws have the status of truth and social objects can be studied in much the same way as natural objects'.

3.3 Population of the Study

Lavrakas (2008) defines a population as any finite or infinite collection of individual items. According to Zikmund, Babin, Carr and Griffin (2010) a population refers to all items in any field of inquiry and is also known as the 'universe'. Polit and Beck (2003) refers to population as the aggregate or totality of those conforming to a set of specifications. The population for this study was 455 CFOs of 455 registered private manufacturing firms as per KAM members' directory (KAM, 2015).

3.3.1 Target Population

The target population which forms the sampling frame for this study consists of all the 455 chief finance officers of 455 registered private manufacturing firms studied were those listed in the Kenya Association of Manufactures directory 2015. This excluded members who were engaged in consultancy and service sectors. The concentration of this study is on 455 manufacturing firms whose Chief Finance Officers (CFOs) are well versed in finance and capital structure decisions. Lavrakas (2008) defines a target population as a list from which the sample is selected and that for descriptive survey designs a target population usually consists of a finite population. In this study the target population consists of 455 CFOs of firms registered with KAM. Gill and Johnson (2002) on the other hand describe a target population as a list of members of the research population. Mugenda and Mugenda (2003) define the term target as a list that contains the names of all the elements in a universe. Polit and Beck (2003) refers to a target population as the technical name for the list of the elements from which the required sample is chosen from.

Table 3.1 population and sample size

Sectors	Population	Sample
1. Building, Mining & Construction	19	9
2. Chemical & Allied Sector	65	29
3. Energy, Electrical & Electronics	31	14
4. Fresh Produce	8	4
5. Food & Beverages	95	43
6. Leather & Footwear	8	4
7. Metal & Allied Sector	50	23
8. Paper & Board Sector	61	28
9. Pharmaceutical & Medical Equipment	32	14
10. Plastics & Rubber	53	24
11. Textile & Apparels	20	10
12. Timber, Wood & Furniture	13	6
Total	455	208

Source KAM, 2015

3.4 Sample and Sampling Technique

A sample is a part of the population to be studied. Lavrakas (2008) describes a sample in a survey research context as a subset of elements drawn from a larger population. Kombo and Tromp (2009) also describe a sample as a collection of units chosen from the universe to represent it. A study that collects excessive data is also wasteful. Therefore, before collecting data, it is imperative to determine the sample size

requirements of a study (Ngumi, 2014). Polit and Beck (2003) strongly recommend that it is more practical and less costly to collect data from a sample than from an entire population. The risk, however, is that the sample might not adequately represent the population. Stratified sampling was employed where each stratum was subjected to simple random sampling to obtain a sample from each stratum.

Using Krejcie and Morgan (1970) formula sample size determination was given as:

$$s = X^2 NP(1-P)/d^2 (N-1) + X^2 P(1-P)$$

s = required sample size

X^2 = the table value of Chi-square for one degree of freedom at desired confidence level

N = Target population being chief finance of 455 manufacturing firms P = the population proportion (assumed to be 0.5)

d = degree of accuracy expressed as a proportion (0.05)

$$s = (1.96)^2(455) (0.5) (0.5) / [(0.05)^2(455-1) + (1.96)^2(0.5) (0.5)] = 208$$

The calculated sample size of 208 CFOs of 208 firms represents 46 % which is considered adequate according to Olive and Abel's (2003) threshold of 10%. It is also acceptable in the light of research specialists' such as Gall and Borg (2007).

The sampling technique used was stratified sampling where each strata was subject to simple random sampling. In this every member in each stratum was given an equal chance of being selected. A number of methods of obtaining samples are available and these methods vary in cost, effort, and skills required, but their adequacy is assessed by the same criterion of the representative sample. In their study Kariuki, Namusonge and Orwa (2015) selected 156 firms and successfully administered questionnaires to Chief Finance Officers.

3.5 Data Collection Instruments

The study used questionnaires to obtain information from the CFOs on the variables. Questionnaires evoke spontaneous responses when arranged in a logical systematic manner. Ngumi(2014) defines questionnaire as a measuring tool that asks individuals to answer a set of questions or respondent to a set of statements. Data survey sheet was used to collect secondary data from these firms.

According to Sekaran and Bougie (2016) three are types of questionnaires the first is closed ended questionnaire, open-ended questionnaire or a combination of both. Closed-ended are used to generate numerical values in quantitative research. When they follow a set format, greater numbers can be produced. Open-ended questionnaires are applied in qualitative research, and researchers will quantify the answers at the analysis stage. The questionnaire has no boxes to tick, but instead leaves a section for the respondent to fill in the answer.

3.6 Data Collection Procedure

Data collection refers to the process of gathering raw and unprocessed information that can be processed into meaningful information, following the scientific process of data analysis (Gall, Gall & Borg, 2007). Primary data was collected through the administration of questionnaires to respondents. Research assistants were engaged to follow-up on the administered questionnaires.

Secondary data was collected through a data survey sheet. Websites of 80 different manufacturing firms, firms' offices and registrar of companies were used to provide secondary data to be entered on the survey sheet. The data covered a period of 5 years from 2011 to 2015 a period where latest data was available.

3.6.1 Measurement of Variables

Table 3.2 Measurement of variables

Variable	Measure	Output/Remark
	<u>Total Debt</u>	Debt Ratio
Capital structure	Total Assets	
Earnings	Earnings Before Interest and Tax (EBT)	
Tax Shield	Corporation rate of tax x Interest	Debt Tax Shield
Dividend payout	<u>Dividend</u> Earnings After Tax	Dividend Payout Ratio
Interest cover	Earnings Before Interest and Tax Interest	Coverage ratio
Firm size	Logarithm of Total assets.	Log of Total Assets

3.7 Pilot Test

The study carried out a pilot test to test the validity and reliability of the instrument in gathering the data required for purposes of the study. Kombo and Tromp (2009) describe

a pilot test as a replica and rehearsal of the main survey. Dawson (2002) states that pilot testing helps researchers to see if the questionnaire will obtain the expected results. According to Polit and Beck (2003), a pilot test is a small scale version, or trial run, done in preparation for a main study. He states that the purpose of a pilot test is not so much to test research questions and hypothesis, but rather to test protocols, data collection instruments, sample, recruitment strategies and other aspects of a study in preparation for a larger study.

Reliability was based on the use of 20 questionnaires which were piloted with randomly selected 20 CFOs who were not included in the final sample. This was meant to avoid response bias in case they happened to complete the same questionnaire in the main study. The rule of the thumb suggests that 5% to 10% of the target sample should constitute the pilot test (Cooper & Schindler, 2011).

3.7.1 Reliability of the Instrument

Cronbach (1971) posits that reliability is the extent to which an experiment or any measuring procedure yields the same results on repeated trials. It is a tendency towards consistency found in repeated measurement of the same issue. An instrument must be more reliable for it to provide an accurate representation and that any measure is considered valid if it is able to measure what it is intended to measure. Reliability can be said to be repeatability, stability or internal consistency of a questionnaire (Schumacher & Macmillan, 2010; Cooper & Schindler, 2011).

In this study a cronbach alpha of 0.7 and above was considered acceptable. Bryman (2008) suggests that cronbach alpha values of items included in the study should not be lower than 0.8. Nunnally (1978) posits that it should not be lower than 0.7 while Gliem and Gliem (2003) recommend a cronbach alpha that exceeds 0.7. The questionnaires in the pilot study were coded and input in Statistical Package for Social Sciences [SPSS] version 22 for running the Cronbach reliability test. The reliability of the questionnaire

was tested using the Cronbach's alpha correlation coefficient. The closer Cronbach's alpha coefficient is to 1, the higher the internal consistency and reliability.

3.7.2 Validity of the Instrument

According to Macmillan and Schumacher (2010) validity is the degree of congruence between explanation of phenomena and reality. Saunders *et al.* (2007) states that construct validity is the extent to which the measurement questions actually measure the presence of those constructs one intended to measure. In this study and for purposes of construct validity the questionnaire has been divided into several sections to ensure that each assessed information for a specific objective and also ensuring that the same is closely tied to the conceptual framework. Kung'u (2015) asserts content validity is the extent to which the measurement device provides adequate coverage of the investigative questions. Creswell (2003) suggests that a colleague, financial analyst or an expert will be requested to evaluate the statements in the questionnaire for relevance and whether they were meaningful and clear. The questionnaire was validated by discussing it with ten randomly selected Chief Finance Officers of ten firms. Their views were evaluated and incorporated to enhance content and construct validity of the questionnaire.

3.8 Data Processing and Analysis

The amount of data collected in a study is rather extensive and research questions and hypotheses cannot be answered by a simple perusal of numeric information and therefore data needs to be processed and analyzed in an orderly and coherent fashion. Quantitative information is usually analyzed through statistical procedures. Statistical analyses cover a broad range of techniques, from simple procedures that we all use regularly like computing an average to complex and sophisticated methods. The data was first cleaned, sorted, coded using numerical numbers, entered into SPSS software version 22 and analysis was done in line with objectives of the study. A number of

studies have used SPSS program to analyze their data with related theme on manufacturing firms (Kariuki & Kamau, 2014; Kariuki *et al.*, 2015; Kung'u, 2015).

Descriptive analysis was the first step; it shows percentages and means of different items in the study. Before quantitative analysis component factor analysis (CFA) was done as data reduction method to manageable levels. All factors loading of less than 0.4 were eliminated (Kung'u, 2015). To ascertain whether factor analysis will be necessary two tests were carried out Kaiser- Meyer Olkin (KMO) and Bartlett's test of sphericity. The Kaiser Meyer Oklin test is used to measure appropriateness of factor analysis. A high value (0.5 to 1) indicates that factor analysis is appropriate. If KMO was more than 0.5 and Bartlett's value is less than 0.05 then factor analysis is considered necessary.

Pearson's correlation, regression analysis and analysis of variance (ANOVA) was used. Karl Pearson's correlation coefficient shows the relationship between variables while regression analysis estimates the causal relationship between the variables. Tests of significance of coefficients of multiple regression were ascertained by the use F- test or F- statistic. Karl Pearson's correlation coefficient shows the relationship between variables while regression analysis estimated the causal relationship between the variables. Tests of significance of coefficients of multiple regressions will be ascertained by the use F- test or F- statistic. This test checks the significance of the entire model with the prediction that independent variables have no influence on dependent variable.

3.9 Diagnostic Tests

It was essential to ensure non-violations of the assumptions of the classical linear regression model (CLRM) before attempting to estimate a regression equation. Estimating these equations when the assumptions of the linear regression are violated runs the risk of obtaining biased, inefficient, and inconsistent parameter estimates (Kathuku, 2017). Consequently, the multicollinearity, autocorrelation,

heteroscedasticity, and panel unit root tests were conducted to ensure proper specification of equations

3.9.1 Normality Tests

The normality assumption ($u_t \sim N(0, \sigma^2)$) is required in order to conduct single or joint hypothesis tests about the model parameters (Kathuku, 2017). In order to check if the data is normally distributed two different methods were used. Firstly, normal probability plots were used and if there was a systematic deviation of the plots from a straight line this means that the data is non-normal distributed. However, if the plots are reasonably close to the line the data can be seen as normally distributed (Rupert, 2004). Secondly, in some cases it was hard to establish if the data is normally distributed by just looking at the scatter plot and hence Bera and Jarque (1981) tests of normality were performed. The study tested the null hypothesis that the disturbances are not normally distributed. If the p-value was less than 0.05, the null of normality at the 5% level was rejected. If the data is not normally distributed a nonparametric test is most appropriate (Mukherjee, White, & Wuyts, 2013).

3.9.2 Multicollinearity

Multicollinearity was tested in the study using correlation matrix whereby the cut-off point for severe multicollinearity is 0.8 (Cooper & Schindler, 2008). Failure to account for perfect multicollinearity results into indeterminate regression coefficients and infinite standard errors while existence of imperfect multicollinearity results into large standard errors. Large standard errors affect the precision and accuracy of rejection or failure to reject the null hypothesis. During estimation, the problem is not the presence of multicollinearity but rather its severity. A correlation coefficient greater than 0.8, thus, indicates the presence of multicollinearity.

3.9.3 Autocorrelation

Since the data involves both cross section and time-series, it raised the suspicion of the existence of serial correlation. The presence of serial correlation indicates that the variables in the model violate the assumptions of the regression (Vincent, 2013). To cater for serial correlation, the Woodridge test for autocorrelation was employed. Serial correlation is a common problem experienced in panel data analysis and has to be accounted for in order to achieve the correct model specification. According to Wooldridge (2003), failure to identify and account for serial correlation in the idiosyncratic error term in a panel model would result into biased standard errors and inefficient parameter estimates. The null hypothesis of this test is that the data has no serial correlation. If the serial correlation is detected in the panel data, then the Feasible Generalized Least Squares (FGLS) estimation will be adopted.

3.9.4 Heteroscedasticity

Since the data for this research is a cross-section of firms, this raises concerns about the existence of heteroscedasticity. The CLRM assumes that the error term is homoskedastic, that is, it has constant variance or same variance. If the error variance is not constant, then there is heteroscedasticity in the data. Running a regression model without accounting for heteroscedasticity would lead to unbiased parameter estimates. To test for heteroscedasticity, the Breusch-Pagan/Godfrey test was used. The null hypothesis of this study was that the error variance is homoskedastic. If the null hypothesis is rejected and a conclusion made that heteroscedasticity is present in the panel data, then this would be accounted for by running a Feasible Generalized Least Squares (FGLS) model.

3.9.5 Panel Unit Root Test

In view of the fact that panel data have both cross-sections and time series dimensions, there is need to test for stationarity of the time series because the estimation of the times series is based on the assumption that the variables are stationary. Estimating models without taking into account the non-stationary nature of the data would lead to unauthentic results (Breitung, & Pesaran, 2008). In this study, the researcher employed Fisher-type test of unit root in panel data. The advantages of this test is that it allows for unbalanced panels with gaps, performs either Dickey-Fuller or Philip-Perron test for each panel, and reports four different tests. The null hypothesis of this test is that all panels had unit root. The alternative hypothesis is that at least one panel did not have unit roots or some panels did not have unit root (Choi, 2006). If any of the variables has unit root, the researcher would difference it and run the equations using the differenced variables.

In order to analyze the firm characteristics influence the capital structure of private manufacturing firms in Kenya, the study modified the dynamic panel data model used by Ban~os-Caballero, Garcia-Teruel, and Martnez-Solano (2010). The study employed a dynamic panel data regression model. Panel data contain observations of multiple phenomena obtained over multiple time periods for the same firms or individuals (Hsiao, 2003). The data is preferred because it reveals changes at the individual firms' level, establishes time order of variables and shows how relationships emerge (Frees, 2004).

Panel data regression has been chosen for a number of reasons. Firstly, panel data allows for the control of individual heterogeneity, making it possible to exclude biases deriving from the existence of individual effects (Hsiao *et al.*, 2003). Secondly, panel data yields more informative data, more variability and less collinearity among variables than is characteristic of cross-section or time-series data, more degrees of freedom and more efficiency (Baltagi *et al.*, 2005). Thirdly, panel data can be used to obtain consistent estimators in the presence of omitted variables (Wooldridge, 2003). Panel data sets are

also able to recognize and estimate the effects that cannot be merely detected in pure cross-sections or pure time-series data (Baltagi *et al*, 2005). Since the study for secondary data focused on 80 registered manufacturing firms using cross-section data alone would give a small sample but incorporating the time series of 5 years, the sample will expand to 400 observations. The resultant large sample made it possible for the study to satisfy asymptotic requirements (Vincent, 2003).

Panel data model before moderator;

Where:

X₁ =Earnings

X₂ = Tax Shield

X₃ = Dividend

X₄= Interest cover

ε = Error term

β_0 = Intercept

$\beta_1 - \beta_4$ = Slope coefficients indicating the influence of the independent variable on the dependent variable. The moderating effect of firm size was tested in the model.

Panel data model after moderator:

Where:

X₁ =Earnings

X₂ = Tax Shield

X₃ = Dividend

X₄= Interest cover

M= Firm Size as Moderator

3.9.6 Test for Fixed or Random Effects

When performing panel data analysis, one has to determine whether to run a fixed effects model or a random effects model. Whereas the fixed effect model assumes firm specific intercepts and captures effects of those variables which are specific to each firm and constant over time, the random effect model assumes that there is a single common intercept and it varies from firm to firm in a random manner (Baltagi, Bratberg & Holmås, 2005). Thus, for estimating the models, first it is important to determine whether there exists a correlation between the independent variables. If the correlation exists then a fixed effect model will give consistent results otherwise random effect model will be an efficient estimator and it is estimated by generalized least square (Teruel & Solano, 2007). To determine which of these two models is appropriate, coefficients are estimated by both fixed and random effects. Hausman's specification test (1978) will be used to determine whether fixed or random effect should be used. If the null hypothesis that is $E(\mu_i / x_{it}) = 0$ is accepted, then random effect will be an efficient estimator otherwise in case of rejection of null hypothesis, fixed effect estimation will give better or efficient estimation of betas. If Hausman test rejects the null hypothesis, therefore decision is taken to use fixed effects model. STATA was used to estimate the above models.

In the event that the Hausman test identifies the fixed effects model as appropriate, then the researcher will test for inclusion of time-fixed effects in the study estimation. The time fixed effects tests if the dummies for all years are equal to zero and if they are, then there is no need for time fixed effects in the specification of the model to be estimated. To test whether the dummies for all years are equal to zero, F-test will be used as proposed by Greene (2008). On the other hand, if the Hausman test selects the random effects model as the more suitable one then there would be need to test whether the panel effects so as to determine whether to run a simple Ordinary Least Square (OLS) regression or the random effects model. Breusch-Pagan multiplier test proposed by Breusch and Pagan (1980) will be used to choose between the simple Ordinary Least Square (OLS) regression and the random effects model. The null hypothesis of this test is that variance across the entities is zero, that is, there are no panel effects.

CHAPTER FOUR

RESULTS AND DISCUSSIONS

4.1 Introduction

This chapter comprised of data analysis, interpretation, discussion and summary of findings the results were presented in tables and charts. The analyzed data was arranged under themes that reflected on the research objectives.

4.2 Response Rate

The number of questionnaires that were administered was 208 and a total of 144 questionnaires were properly filled and returned whereas some of the respondents returned the questionnaires half-filled others refused to return them completely despite a lot of follow up. The response rate result is shown in Table 4.1.

Table 4.1: Response Rate

Response	Frequency	Percent
Returned	144	69.23%
Unreturned	64	30.77%
Total	208	100%

The response rate was 69.23% as shown on Table 4.1. This represented an overall success according to Olive and Abel (2003) and also Kothari (2004) a response rate of above 50% is adequate for a descriptive study. Cooper and Schindler (2003) also argues that a response rate exceeding 30% of the total sample size provides enough data that can be used to generalize the characteristics of a study problem as expressed by the

opinions of few respondents in the target population. Based on these assertions the response rate of , 69.23% was adequate for the study.

4.3 Test for Reliability

The reliability of an instrument refers to its ability to produce consistent and stable measurements. According to Cooper and Schindler (2011) reliability tests the stability, equivalence and internal consistency of an instrument. The reliability of an instrument refers to its ability to produce consistent and stable measurements. Njine, Nzulwa, Kamara and Ombui (2017) explain that reliability can be seen from two sides: reliability (the extent of accuracy) and unreliability (the extent of inaccuracy). The most common reliability coefficient is Cronbach's alpha which estimates internal consistency by determining how all items on a test relate to all other items and to the total test- internal coherence of data. The reliability is expressed as a coefficient between 0.00 and 1.00. The higher the coefficient, the more reliable is the test.

In this study, data collection instrument which is a questionnaire was tested on 9.6% of the sample of the questionnaires to ensure that it is relevant and effective. Reliability was tested using questionnaire duly completed by 20 randomly selected respondents. These respondents were not included in the final study sample in order to control for response biasness. The questionnaire responses were input into statistical package for social sciences (SPSS) and Cronbach's alpha coefficient generated to assess reliability. The Cronbach alpha was calculated in a bid to measure the reliability of the questionnaire. Results are presented in Table 4.2. Table 4.2 shows the reliability results. All the statements were reliable since the Cronbach alpha was above 0.7 which was used as a cut-off of reliability for the study. Therefore the internal consistency reliability of the measure was excellent. This indicates that the data was reliable since an alpha coefficient higher than 0.70 signifies that the gathered data has a relatively high internal consistency and could be generalized to reflect the respondent's opinions on the study problem.

Table 4.2: Reliability Coefficient

Variable	Cronbach's Alpha	Comment
Earnings	0.853	Accepted
Tax Shield	0.859	Accepted
Dividend Payout	0.871	Accepted
Interest Cover	0.791	Accepted
Firm Size	0.867	Accepted
Capital Structure	0.795	Accepted
Average Cronbach Alpha for all the variables	0.839	Accepted

The Cronbach Alpha is a value widely used to verify reliability. The findings in table 4.2 indicated that Earnings had a coefficient of 0.853, Tax Shield had a coefficient of 0.859, Dividend Payout had a coefficient of 0.871, Interest Cover had a coefficient of 0.791, Firm Size had a coefficient of 0.867, while Capital Structure had a coefficient of 0.795. The average Cronbach alpha for all the variables was 0.839 which is above the recommended threshold. All variables depicted that the value of Cronbach's Alpha is above value of 0.7 thus the data collection instrument was reliable (Castillio& Rojas, 2009).

4.4 Test for Validity

Kaiser-Meyer-Olkin (KMO) test was performed to test for validity. Interpretive adjectives for the KMO Measure of Sampling Adequacy are: in the 0.90 as marvelous, in the 0.80's as meritorious, in the 0.70's as middling, in the 0.60's as mediocre, in the 0.50's as miserable, and below 0.50 as unacceptable. The value of the KMO Measure of Sampling Adequacy for this set of variables was 0.771, which would be labeled as 'middling'. Since the KMO Measure of Sampling Adequacy met the minimum criteria, and therefore there was no problem that requires the study to examine the Anti-Image Correlation Matrix.

Bartlett's test of sphericity tests the hypothesis that the correlation matrix is an identity matrix; that is all diagonal elements are 1 and all off-diagonal elements are 0, implying that all of the variables are uncorrelated. If the Sig value for this test is less than our alpha level, we reject the null hypothesis that the population matrix is an identity matrix. The Sig. value for this analysis led to rejection of the null hypothesis and concluded that there were correlations in the data set that are appropriate for factor analysis. This analysis met this requirement.

Table 4.3: Kaiser-Meyer-Olkin Measure of Sampling Adequacy

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		0.771
Bartlett's Test of Sphericity	Approx. Chi-Square	107.242
	df	15
	Sig.	0.000

4.5 Demographic Characteristics

This section consists of information that describes basic characteristics such as date the company commenced operations, the duration of time it has been under KAM, classification , form of business and number of workers employed.

4.5.1 Commencement Date

The respondents were asked to indicate when the company commenced its operations. Table 4.4 shows the results

Table 4.4: Commencement Date

	Frequency	Percent
One to Ten Years	13	9
Eleven to Twenty Years	46	32
Twenty One to Thirty Years	41	29
Thirty One to Forty Years	19	13
Forty One to Fifty Years	12	8
Over Fifty Years	13	9
Total	144	100

Results in figure 4.1 show that 32% of respondents' indicated that companies commenced operations eleven to twenty years ago. The results further indicated that 29% of the respondents started operating twenty one to thirty years ago, 13% have been operating for between thirty one to forty years, 8% have operated for between forty one to fifty years and 9% commenced operations over fifty years ago while 9% have operated for between one to ten years.

4.5.2 Duration of Time under KAM

The respondents were asked to indicate the number of years the firm has been under KAM. Table 4.5 shows the results.

Table 4.5: Duration of Time under KAM

	Frequency	Percent
One to Five Years	11	7.6
Six to Ten Years	27	18.8
Eleven to Fifteen Years	38	26.4
Sixteen to Twenty Years	31	21.5
Twenty One to Twenty Five Years	14	9.7
Over Twenty Five Years	23	16
Total	144	100

Results in Table 4.5 show that 26.4% of respondents' companies have been under KAM for between eleven to fifteen years. The results also indicated that 21.5% of the respondents' companies have been under KAM between sixteen to twenty years. The results further revealed that 18% of the companies have been members of KAM for six to ten years. Results also revealed that 16% of the companies where the respondents worked have been members of KAM for over twenty five years. Results also showed that 9.7% of the companies have been members of KAM for between twenty one to twenty five years. In addition the results revealed that 7.6% of the companies have been members of KAM for one to five years.

4.5.3 Classification

The respondents were asked to indicate the classification under which the companies have been placed. Table 4.6 shows the results.

Table 4.6: Classification

	Percent	Frequency
Building, Mining and Construction	6.9	10
Chemical and Allied Sector	23.6	34
Energy, Electricals And Electronics	4.2	6
Fresh Products	0.7	1
Food and Beverages	22.2	32
Leather and Footwear	2.8	4
Metal and Allied Sector	7.6	11
Paper and Board Sector	6.9	10
Pharmaceuticals and Medical Equipment	2.1	3
Plastics and Rubber	18.8	27
Textile and Apparels	4.2	6
Total	100	144

Results in Table 4.6 show that 23.6% of respondents' companies are placed under chemical and allied sector. The results also indicated that 22.2% of the respondents' companies have been placed under food and beverages. The results further revealed that 18.8% of the companies have been classified under plastics and rubber. Results also

revealed that 7.6% of the companies are placed under metal and allied sector. Results also showed that 6.9% of the companies have been placed under building, mining and construction. Also the results revealed that 6.9% of the companies have been classified under paper and board sector. Results further indicated that 4.2% of the companies are under energy, electrical and electronics. The result further revealed that 4.2% of the companies are placed under textile and apparels. The results also indicated that 2.8% of the companies are under leather and footwear. The results further indicated that 2.1% of the companies are placed under pharmaceuticals and medical. The results finally indicated that 0.7% of the companies have been classified under fresh products.

4.5.4 Form of Business Organization

The respondents were asked to indicate the form of business organization companies has been placed. Table 4.6 shows the results

Table 4.7: Form of Business Organization

	Percent	Frequency
Quoted Company	1.4	2
Other Limited Company	89.6	129
Partnership	2.1	3
Sole Proprietorship	2.1	3
Others	4.9	7
Total	100	144

Results in Table 4.7 show that majority of the respondents who were 90% indicated that companies are in other limited companies. The results also indicated that 5% of the respondents' companies are in other not specified form of businesses. The results further indicated that 2% of the companies are sole proprietorship form of business organizations. Results further indicated 2% are partnerships. The results also revealed that 1% of the companies are quoted form of business organizations.

4.5.5 Number of Workers

The respondents were asked to indicate the number of workers employed by the company. Table 4.8 shows the results

Table 4.8: Number of Workers

	Percent	Frequency
Between Eleven and Fifty Workers	13.9	20
Between Fifty One and Hundred Workers	36.8	53
Between One Hundred and One and Two Hundred and Fifty Workers	25	36
Between Two Hundred and Fifty One and Five Hundred Workers	14.6	21
Over Five Hundred Workers	9.7	14
Total	100	144

Results in Table 4.8 show that 36.8% of respondents' indicated that companies had employed between fifty one and one hundred workers. The results also indicated that 25% of the respondents' companies had employed between one hundred and one and two hundred and fifty workers. The results further indicated that 14.6% of the companies had employed between one hundred and fifty one and five hundred workers. Results further indicated 13.9% had employed between eleven and fifty workers. The results also revealed that 9.7% of the companies had employed over five hundred workers.

4.6 Descriptive Statistics

This section contains descriptive analysis for both the dependent and independent variables. A Likert scale with options of strongly disagree, disagree, neutral, agree and strongly agree were presented for answering by respondents. The results were presented in form of percentages, mean and standard deviations

4.6.1 Earnings on the Capital Structure of Private Manufacturing Firms

Respondents were requested to indicate their level of agreement on statements on earnings. Results were presented in Table 4.9.

Table 4.9: Earnings

Statements	strongly disagree	disagree	neither nor disagree	agree	strongly agree	Mean	Std. Dev
firm use earnings to fund investments	1.00%	5.20%	2.80%	52.10%	38.90%	4.24	0.78
With high earnings means less debt	3.40%	1.50%	2.80%	55.60%	36.80%	4.24	0.73
increased earnings support high debt	1.40%	27.1%	21.50%	39.60%	10.40%	3.31	1.03
Internal funds are cheaper	2.00%	2.10%	9.10%	61.10%	25.70%	4.1	0.67
Earnings are considered then debt	1.30%	3.50%	14.00%	53.50%	27.80%	4.06	0.76
profitability ensures repayment	9.00%	2.80%	10.40%	45.10%	32.60%	4.08	0.79
Debt controls managers	2.30%	3.30%	21.50%	42.40%	30.60%	3.98	0.87
Internal finance is considered first	2.10%	2.10%	13.90%	49.30%	32.60%	4.08	0.86
Average						3.96	0.80

Results in Table 4.9 revealed that majority of the respondents who were 59.70% agreed that the firm's high earnings cause an increase in debt. These results were inconsistent with that of Köksal *et al.* (2013) who found a negative relationship between debt and earnings. The results also revealed that 91.00% agreed that the firm can use earnings to fund investments. These findings agree with that of Köksal, Orman and Oduncu (2013) who argued that profitable firms can use earnings to fund investments and hence less need for an external debt. The results further revealed that 92.40% agreed that with high earnings the firm will consider taking less debt. These findings agree with that of Jamal *et al.* (2013) who asserts that firms with volatile earnings are liable to use less debt. Results also revealed that 50.00% agreed that increased earnings support high debt. Further the results revealed that 86.80% agreed that the firm considers internal funds cheaper. These findings agree with that of Jamal *et al.* (2013) who contends with pecking order theory and argues that firms choose internal funds generated from earnings because internal funds are cheaper and not subjected to outside influence. The results also revealed that 81.30% agreed that the firm raises capital first from earnings then debt. These findings agree with that of Muema (2013) who observes that firms prefer raising capital from retained earnings then from debt and then equity.

Also, the results revealed that 87.50% agreed the firm's profitability lead to use of less debt. This study agreed with that of Köksal *et al.* (2013) who found a negative relation between debt and profitability as profitable firms can use earnings to fund investments and hence less need for an external debt. The results further revealed that 77.70% agreed that with high profitability the firm usually repay loans. These findings agreed with that of Mbulawa (2014) who found that the larger the firm is the more the probability that it will be able to repay and hence lenders may advance more to it than to smaller firms but this need to be considered with caution because not every firm can pay back. The results further revealed that 73.00% agreed that by taking more debt the activities of managers are controlled. These findings agree with that of Fisseha (2010) who predicts that profitable firms will make more debt in their structure to control the activities of

managers. Further the results revealed that 81.90% agreed that the firm prefers internal finance first before considering external finance. These findings agreed with that of Kabede (2011) who asserts that firms prefer internal finance first, and then they will issue safest security first after which hybrid securities such as convertible bonds.

Results in table 4.9 revealed that 40.2% of the respondents disagreed with the statement that the firms' high earnings cause an increase in debt and that 50% of the respondents disagreed that earnings support high debt.

4.6.2 Tax Shield on Capital Structure of Private Manufacturing Firms

The second objective of the study was to establish the influence of tax shield on capital structure of Private Manufacturing Firms in Kenya. The respondents were requested to indicate their level of agreement on the statements on tax shield. Results are presented in Table 4.10.

Table 4.10: Tax Shield

Statements	strongly disagree	disagree	neither agree nor disagree	agree	strongly agree	Mean	Std. Dev
The firm will take more debt when debt tax shields are high	1.40%	13.90%	17.40%	44.40%	22.90%	3.74	1.01
The firm prefers debt to gain from debt tax shields	2.10%	19.40%	13.90%	42.40%	22.20%	3.63	1.10
The firm's debt tax shields guarantees high debt	4.00%	20.30%	25.70%	30.60%	19.40%	3.55	1.06
Increase in debt tax shields will make the firm increase in use of debt	3.60%	20.60%	25.00%	37.50%	13.90%	3.42	1.00
The higher debt tax shield the higher tax advantage from debt interest to the firm	0.00%	13.20%	32.60%	43.80%	10.40%	3.51	0.85
With high tax rate, more debt is used	1.40%	18.10%	2.80%	36.10%	40.70%	3.91	0.82
Average						3.63	0.97

Results in table 4.10 revealed that majority of the respondents who were 67.30% agreed that the firm will take more debt when debt tax shields are high. These findings agree with that of Köksal *et al.* (2013) who found that firms with high amounts of no- debts tax shields will choose to have a lower debt, the same is true where true high debt tax shield will make firms chose higher debts. The results also revealed that 64.60% agreed that the firm prefers debt to gain from debt tax shields. These findings agree with that of Muema (2013) who found that profitable firms prefer debt to benefit from tax shields if past profitability and earnings is a good proxy for future profitability and earnings. Results also revealed that 50.00% agreed that the firm's debt tax shields guarantees high debt.

Further the results revealed that 51.40% agreed that Increase in debt tax shields will make the firm increase in use of debt. These findings agree with that of Mbulawa (2014) who found that a firm with high tax rate should use more debt rate therefore should have more income to shield from tax. The results also revealed that 54.20% agreed that the higher debt tax shield the higher tax advantage from debt interest to the firm. In addition, the results revealed that 76.80% agreed that with high tax rate, the firm uses more debt and has more income to shield from tax. These findings agree with that of Mbulawa (2014) who found that a firm with high tax rate should use more debt rate therefore should have more income to shield from tax. Results in table 4.10 revealed that 32.7% of the respondents disagreed with the assertion that firms will take more debt when debt tax shields are high and that 45.8% disagreed with the statement that the higher the debt tax shield the higher the tax advantage the debt interest from the firm.

4.6.3 Dividend Payout on Capital Structure of Private Manufacturing Firms

The third objective of the study was to establish the influence of dividend payout on capital structure of Private Manufacturing Firms in Kenya. The respondents were requested to indicate their level of agreement on the statements on dividend payout. Results were presented in Table 4.11

Table 4.11: Dividend Payout

Statements	strongly disagre e	disagre e	neither agree nor disagre e	agree	strongly agree	Mea n	Std. Dev
With high dividend payout debt is high	5.60%	20.10%	9.70%	45.80%	18.80%	3.54	1.08
Low dividend payout leads to low debt	0.70%	4.20%	10.40%	50.00%	34.70%	4.14	0.82
Low dividend causes increase in equity and hence low debt	5.00%	2.60%	22.90%	43.10%	26.40%	3.88	0.89
The firm's high dividend indicates internal stability	0.70%	12.50%	15.30%	30.60%	41.00%	3.47	0.92
The firm's high dividend signals future growth	2.80%	16.00%	6.20%	30.60%	44.40%	3.92	0.89
Average						3.79	0.92

Results in table 4.11 revealed that majority of the respondents who were 64.60% agreed with the statement that with high dividend payout debt is high. These findings agree with that of Abate (2012) who found a positive relation between dividend payout and debt ratio. The results also revealed that 84.70% agreed that low dividend payout leads to low debt. These findings agree with that of Abate (2012) who found a positive relation between dividend payout and debt ratio. Results also revealed that 69.50% of the respondents agreed with the statement that low dividend causes increase in equity and hence low debt. These findings agree with that of (Abate, 2012) who found that the low dividend payout ratio implies increase in the equity base for debt capital and low chance of going into liquidation. Further the results revealed that 71.60% of the respondents agreed with the statement that the firm's high dividend indicates internal stability and ability to secure more debt in the future. The results also revealed that 71.00% agreed that the firm's high dividend signals future growth in debt as well as equity.

Results in table 4.11 revealed that 35.4% of the respondents were not in agreement with the statement that with high dividend payout means that debt is high and further results indicated that 28.5% of the respondents disagreed with the assertion that the firm's high dividend indicated internal stability and ability to secure more debt in the future. These results were consistent with Bancel and Mittoo (2004) found a negative relationship between dividend payout and long term debt thereby supporting the trade off theory. But Baral (2004) found that dividend policy for a firm does not have influence on capital structure. This is also in agreement with Juca, Ferreira de Sousa and Fishlow (2012) who found that dividend has a negative influence on debt ratio.

4.6.4 Interest Cover on Capital Structure of Private Manufacturing Firms

The fourth objective of the study was to determine the influence of interest cover on the capital structure of private manufacturing firms in Kenya. The respondents were requested to indicate their level of agreement on the statements on interest cover. Results are presented in Table 4.12.

Table 4.12: Interest Cover

Statement	strongly disagree	disagree	neither agree nor disagree	agree	strongly agree	Mea n	Std. Dev
High interest cover indicates less debt	0.70%	6.90%	18.10%	33.30%	41.00%	4.07	0.97
Increase in interest cover shows reduction in debt	0.70%	11.10%	12.50%	37.50%	38.20%	4.01	1.01
High interest coverage ratio implies the high debt in future	6.90%	39.60%	1.40%	11.10%	41.00%	3.60	0.83
High interest payments means there is high debt	13.90%	2.10%	30.60%	10.40%	43.10%	3.61	0.93
Low interest cover indicates high debt.	0.70%	16.70%	24.30%	34.00%	24.30%	3.65	1.05
Average						3.79	0.96

Results in table 4.11 revealed that majority of the respondents who were 74.30% agreed that high interest cover indicates less debt. These findings agree with that of Eriotis (2007) who concluded that higher interest coverage ratio implies lower debt.

The results also revealed that 75.70% agreed that increase in interest cover shows reduction in debt. These findings agree with that of Eriotis (2007) who concluded that higher interest coverage ratio implies lower debt. Results also revealed that 52.10% agreed that high interest implies the high debt in future. Further the results revealed that 53.50% agreed that high interest payments means there is high debt. The results also revealed that 58.30% agreed that low interest cover indicates high debt. These findings agree with that of Basu and Rajeev (2013) who asserts that interest coverage ratio has a negative correlation with leverage. And he states that a lower interest coverage ratio indicates a higher debt ratio.

Results in table 4.11 reveal that 24.3% of the respondents disagreed that increase in interest cover shows reduction in debt. Also shown is that 47.9% of the respondents disagreed that high interest coverage ratio implied high debt in future. Further the results in this table revealed that 46.6% of the respondents disagreed that high interest payments means there is high debt and 41.7% of the respondents disagreed that lower interest indicated lower debt.

4.6.5 Firm Size on Capital Structure of Private Manufacturing Firms

The fifth objective of the study was to establish the influence of firm size on the relationship between firm characteristics and capital structure of Private Manufacturing Firms in Kenya. The respondents were requested to indicate their level of agreement on the statements on firm size. Results are presented in Table 4.13.

Table 4.13: Firm Size

Statements	strongly disagree	disagree	neither agree nor disagree	agree	strongly agree	Mea n	Std. Dev
Large firm accommodates more debt	2.80%	26.40%	13.20%	31.20%	26.40%	3.46	1.08
Large firms' cash flow support debt	2.80%	22.20%	15.30%	36.80%	22.90%	3.48	1.08
large firm handles more debt	4.20%	18.80%	9.00%	40.30%	27.80%	3.61	1.01
Large firms have symmetric information	2.10%	16.00%	5.60%	47.20%	29.20%	3.89	0.89
Large firm repays debts	2.80%	21.50%	5.60%	29.90%	40.30%	3.73	0.91
Firms growth through debt	0.70%	19.40%	18.10%	29.90%	31.90%	3.55	1.02
Average						3.62	1.00

Results in table 4.13 revealed that majority of the respondents who were 57.60% agreed with the statement that large diversified firm accommodates more debt. These findings agree with that of Rajan and Zingales (1995) who found that large firms are typically more diversified and less prone to bankruptcy. The results also revealed that 59.70%

agreed that large firms have cash flow to support more debt. These findings agree with the statement that of Kouki and Said (2012) who found that large firms have greater level of diversification to reduce cash flow volatility and hence bankruptcy risk is lower. Results also revealed that 68.10% agreed with the statement that the firm is able to accommodate more debt its size. These findings agree with that of Mbulawa (2014) who found that large firms have been found to accommodate more debt on their capital structure as opposed to small firms. Further the results revealed that 76.40% agreed that large firms provide symmetric information which supports more debt. These findings agree with that of Jamal *et al.*, 2013; Deesomsak *et al.*, 2004 and Al-Ajmi, (2009) who found that large firms have lower information asymmetry and are able to issue more equity compared to small firms.

The results also revealed that 70.20% of the respondents agreed with the statement that the firm repays its debts due to its large size. These findings agree with that of Ngugi and Afande (2015) who reported that an increase in debt ratio is related to the firm size and holds that large firms are well diversified and not susceptible to bankruptcy. In addition the results revealed that 61.80% of the respondents agreed that the firm achieves growth through debt. Results in table 4.13 showed that 42.4% of the respondents disagreed that large diversified firms accommodates more debt. Further that 40.3% of the respondents disagreed that large firms have cash flow to support more debt. Results also reveal that 38.1% of the respondents disagreed that the firm achieves growth through debt.

4.6.6 Capital structure

Table 4.14: Capital structure

Statements	strongly disagree	disagree	neither agree nor disagree	agree	strongly agree	Mean	Std. Dev
Costs of acquisition of debt in the firm are low	13.90%	3.50%	27.10%	15.30%	40.30%	2.54	1.02
The Board of Directors prefers use of debt in financing.	6.20%	33.30%	16.70%	34.70%	9.00%	3.07	1.14
The organization is accessible to financial institutions willing to advance debt	1.40%	2.80%	9.70%	49.30%	36.80%	4.17	0.82
The firm's use of debt capital lowers cost of capital	0.70%	16.00%	37.50%	38.20%	7.60%	3.36	0.87
High interest obligation makes the management fear use of debt	1.40%	7.60%	16.00%	52.10%	22.90%	3.88	0.90
Average						3.40	0.95

4.7 Primary data Correlation Analysis

Correlation analysis was conducted between earnings (independent variable) and capital structure (dependent variable). Results are presented in Table 4.15.

Table 4.15: Correlation Analysis for Primary Data

		Capital Structure	Earnings	Dividends Payout	Interest	Tax shield	Firm size
Capital Structure	Pearson Correlation		1				
	Sig. (2-tailed)						
Earnings	Pearson Correlation	.196**	1				
	Sig. (2-tailed)	0.000					
Dividends Payout	Pearson Correlation	.118*	.731**	1			
	Sig. (2-tailed)	0.019	0				
Interest	Pearson Correlation	-.729**	.572**	.418**	1		
	Sig. (2-tailed)	0.000	0	0			
Tax shield	Pearson Correlation	.729**	.572**	.418**	1.000**	1	
	Sig. (2-tailed)	0.000	0	0	0		
Firm size	Pearson Correlation	.278**	.730**	.578**	.751**	.751**	1
	Sig. (2-tailed)	0.000	0	0	0	0	

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

* Correlation is significant at the 0.05 level (2-tailed).

The results in table 4.15 revealed that earnings and capital structure has a weak positive and significant relationship ($r=0.196$, $p=0.000$). These findings agree with that of Muema (2013) who observes that higher earnings will correspond to lower debt ratio. These findings also agree with that of Jamal *et al.* (2013) who asserts that firms with volatile earnings are liable to use less debt. The results also revealed that dividend payout and capital structure has a weak positive and significant association($r=0.118$, $p=0.019$). These findings agree with that of Abate (2012) who found a positive relation between dividend payout and debt ratio. The results also revealed that interest coverage and capital structure has a strong positive and significant relationship ($r=0.729$, $p=0.000$).In addition, the results revealed that tax shield and capital structure has a

strong negative and significant relationship ($r=-0.729$, $p=0.000$). These findings agree with that of Abate (2012) who found a positive relation between dividend payout and debt ratio. These findings also agree with that of Mbulawa (2014) who found that a firm with high tax rate should use more debt rate therefore should have more income to shield from tax. Lastly, the results revealed that firm size and capital structure has a weak positive and significant relationship ($r=0.278$, $p=0.000$). These findings agree with that of Abate (2012) who found that size have significant positive influence on on capital structure choice of insurance companies.

4.8 Primary Data Regression Results

4.8.1 Regression Analysis Between Earnings and Capital Structure

The results presented in table 4.16 present the fitness of model used of the regression model in explaining the study phenomena. Earnings were found to be satisfactory variable in explaining capital structure. This is supported by coefficient of determination also known as the R square of 10.1%. This means that earnings explain 10.1% of the variations in the dependent variable which is capital structure.

Table 4.16: Model Fitness

Variables	Coefficients
R	0.317
R Square	0.101
Adjusted R Square	0.094
Std. Error of the Estimate	0.513

Table 4.17 provides the results on the analysis of the variance (ANOVA).

Table 4.17: Analysis of Variance

	Sum of Squares	df	Mean Square	F	Sig.
Regression	4.178	1	4.178	15.906	0.000
Residual	37.299	143	0.263		
Total	41.478	144			

The results indicate that the overall model was statistically significant. Further, the results imply that the independent variable is a good predictor of capital structure. This was supported by an F statistic of 15.906 and the reported p value (0.000) which was less than the conventional probability of 0.05 significance level.

Regression of coefficient results is presented in Table 4.18

Table 4.18: Regression of Coefficients

	B	Std. Error	t	Sig.
(Constant)	1.597	0.455	3.509	0.001
Earnings	0.468	0.117	3.988	0.000

Regression of coefficients showed that earnings and capital structure had a positive and significant relationship ($r=0.468$, $p=0.000$). These results were inconsistent with that of Köksal *et al.* (2013) who found a negative relationship between debt and earnings.

$$Y = 1.597 + 0.468X_1$$

From the regression equation when earnings change by 0.468% the capital structure changes by 1% showing there is a positive relation between the two variables. These results are consistent with those Fisseha (2010) who established a positive influence between capital structure and earnings. These results are also supported by Feidakis and Rovolis (2007) who established that profitable firms have access to debt markets.

Results in Table 4.19 indicated that there was a positive and a significant association between tax shield and capital structure ($r=0.577$, $p=0.000$). These findings agree with

that of Tesfaye and Minga (2013) who found that tax shield and capital structure are positively related.

4.8.2 Regression Analysis for Tax Shield and Capital Structure

The results presented in table 4.19 present the fitness of model used of the regression model in explaining the study phenomena.

Table 4.19: Model Fitness

Variables	Coefficients
R	0.577
R Square	0.333
Adjusted R Square	0.329
Std. Error of the Estimate	0.44133

Tax shield was found to be satisfactory variable in explaining capital structure. This is supported by coefficient of determination also known as the R square of 33.3%. This means that earnings explain 33.3% of the variations in the dependent variable which is capital structure.

Table 4.20: Analysis of Variance

	Sum of Squares	df	Mean Square	F	Sig.
Regression	13.82	1	13.82	70.959	0.000
Residual	27.657	143	0.195		
Total	41.478	144			

Table 4.19 provides the results on the analysis of the variance (ANOVA). The results indicate that the overall model was statistically significant. Further, the results imply that the independent variable is a good predictor of capital structure. This was supported by an F statistic of 70.959 and the reported p value (0.000) which was less than the conventional probability of 0.05 significance level.

Regression of coefficient results is presented in Table 4.21

Table 4.21: Regression of Coefficients

	B	Std. Error	t	sig
(Constant)	1.987	0.172	11.542	0.000
Tax shield	0.406	0.048	8.424	0.000

Regression of coefficients showed that tax shield and capital structure were related ($r=0.406$, $p=0.000$)
$$\mathbf{Y = 1.987 + 0.406X_2}$$

From the regression equation when tax shield changes by 0.406% the capital structure changes by 1% showing there is a positive relation between the two variables. These results are consistent with those of Köksal *et al.* (2013) where high debt tax shield will make firms chose higher debts.

4.8.3 Regression Analysis Between Dividend Payout and Capital Structure

The results presented in table 4.22 present the fitness of model used of the regression model in explaining the study phenomena. Dividend payout was found to be satisfactory variable in explaining capital structure. This is supported by coefficient of determination also known as the R square of 12.6%. This means that dividend payout explain 12.6% of the variations in the dependent variable which is capital structure.

Table 4.22: Model Fitness

Variables	Coefficients
R	0.354
R Square	0.126
Adjusted R Square	0.119
Std. Error of the Estimate	0.50537

Table 4.23 provides the results on the analysis of the variance (ANOVA). The results indicate that the overall model was statistically significant. Further, the results imply that the independent variable is a good predictor of capital structure. This was supported by

an F statistic of 20.405 and the reported p value (0.000) which was less than the conventional probability of 0.05 significance level.

Table 4.23: Analysis of Variance

	Sum of Squares	df	Mean Square	F	Sig.
Regression	5.211	1	5.211	20.405	0.000
Residual	36.266	143	0.255		
Total	41.478	144			

Regression of coefficient results is presented in Table 4.24

Table 4.24: Regression of Coefficients

	B	Std. Error	t	sig
(Constant)	2.035	0.306	6.648	0.000
Dividend payout	0.379	0.084	4.517	0.000

Regression of coefficients showed that dividend payout and capital structure were related ($r=0.379$, $p=0.000$). Abate (2012) who found a positive relation between dividend payout and debt ratio.

$$Y = 2.035 + 0.379X_3$$

From the regression equation when dividend payout changes by 0.379 % the capital structure changes by 1% showing there is a positive relation between the two variables. These results are consistent with those of Abate (2012) who found a positive relation between dividend payout and debt ratio.

4.8.4 Regression Analysis for Interest Cover and Capital Structure

The results presented in table 4.25 present the fitness of model used of the regression model in explaining the study phenomena. Interest cover was found to be satisfactory variable in explaining capital structure. This is supported by coefficient of determination also known as the R square of 17.5%. This means that interest cover explain 17.5% of the variations in the dependent variable which is capital structure.

Table 4.25: Model Fitness

Variables	Coefficients
R	0.418
R Square	0.175
Adjusted R Square	0.169
Std. Error of the Estimate	0.491

Table 4.26 provides the results on the analysis of the variance (ANOVA).

Table 4.26: Analysis of Variance

	Sum of Squares	df	Mean Square	F	Sig.
Regression	7.243	1	7.243	30.045	0.000
Residual	34.234	143	0.241		
Total	41.478	144			

The results indicate that the overall model was statistically significant. Further, the results imply that the independent variable is a good predictor of capital structure. This was supported by an F statistic of 30.045 and the reported p value (0.000) which was less than the conventional probability of 0.05 significance level.

Regression coefficient results is presented in Table 4.27

Table 4.27: Regression of Coefficients

	B	Std. Error	t	sig
(Constant)	1.950	0.268	7.264	0.000
Interest cover	-0.434	0.079	-5.481	0.000

$$Y = 1.950 - 0.434X_4$$

From the regression equation when interest changes by 0.434% the capital structure changes by 1% showing there is a positive relation between the two variables. These

results are inconsistent with those of Eriotis (2007) and Basu and Rajeev (2013) who found a negative relation between interest cover and debt ratio. And they stated that a lower interest coverage ratio indicates a higher debt ratio.

4.8.5 Regression Analysis Before Moderation

The results presented in table 4.28 present the fitness of model used of the regression model in explaining the study phenomena.

Table 4.28: Model Fitness

Variables	Coefficients
R	0.612
R Square	0.375
Adjusted R Square	0.357
Std. Error of the Estimate	0.4447

Firm size was found to be satisfactory variable in explaining capital structure. This is supported by coefficient of determination also known as the R square of 37.5% This means that firm size explain 37.5% of the variations in the dependent variable which is capital structure.

Table 4.29: ANOVA

	Sum of Squares	df	Mean Square	F	Sig.
Regression	2.87	4	2.87	33.378	0.000
Residual	34.22	140	0.086		
Total	37.09	144			

Table 4.29 provides the results on the analysis of the variance (ANOVA). The results indicate that the overall model was statistically significant. Further, the results imply that the independent variable is a good predictor of capital structure. This was supported by an F statistic of 33.378 and the reported p value (0.000) which was less than the conventional probability of 0.05 significance level.

Table 4.30: Regression Coefficients

	B	Std. Error	t	Sig.
(Constant)	0.942	0.437	2.154	0.033
Earnings	0.228	0.111	2.054	0.000
Tax Shield	0.303	0.059	5.175	0.000
Dividend Payouts	0.307	0.083	3.699	0.002
Interest Cover	-0.256	0.084	-3.0476	0.006

The results in table 4.30 showed that tax shield have a positive and significant relationship with capital structure ($\beta=0.228$, $p=0.000$). These findings also agree with that of Mbulawa (2014) who found that a firm with high tax rate should use more debt rate therefore should have more income to shield from tax. The results also revealed that earnings have a positive and significant relationship with capital structure ($\beta=0.303$, $p=0.00$). These findings agree with that of Muema (2013) who observes that higher earnings will correspond to lower debt ratio. These findings also agree with those of Jamal *et al.* (2013) who asserts that firms with volatile earnings are liable to use less debt.

These findings also agree with that of Mbulawa (2014) who found that a firm with high tax rate should use more debt rate therefore should have more income to shield from tax. The results also revealed that dividend payout have a positive and significant relationship with capital structure ($\beta = 0.307$, $p=0.002$). These findings agree with that of Abate (2012) who found a positive relation between dividend payout and debt ratio. The results also revealed that interest coverage have a negative and significant relationship with capital structure ($\beta = -0.256$, $p=0.006$). These findings agree with that of Eriotis (2007) who concluded that higher interest coverage ratio implies lower debt.

$$Y = -0.33 + 0.101X_5$$

4.8.6 Regression Analysis After Moderation

The results presented in table 4.31 present the fitness of model used of the regression model in explaining the study phenomena.

Table 4.31: Model Fitness

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.788a	0.622	0.608	0.46766

The results revealed that R squared improved from 37.5 to 62.2 after moderation with firm size. This means that firm size moderates the relationship between firm characteristics and capital structure.

Table 4.32: ANOVA

	Sum of Squares	df	Mean Square	F	Sig.
Regression	40.967	4	10.242	46.83	.000 ^b
Residual	24.932	140	0.219		
Total	65.899	144			

The results revealed that the F statistic improved from 33.378 to 46.83 after moderation with firm size. This means that firm size moderates the relationship between firm characteristics and capital structure.

Table 4.33: Regression of Coefficient

	B	Std. Error	t	Sig.
(Constant)	3.025	0.172	17.567	0
Earnings_Size	0.084	0.026	3.308	0.001
Tax_Shield_Size	0.105	0.018	5.904	0.000
Dividend_Payout_Size	0.205	0.026	7.885	0.005
Interest_Cover_Size	-0.116	0.026	-4.462	0.002

The results revealed that firm size significantly moderates the relationship between earnings and capital structure ($\beta=0.084$, $p=0.001$). In addition, results revealed that firm size significantly moderates the relationship between tax shield and capital structure ($\beta=0.105$, $p=0.000$). The results also revealed that firm size significantly moderates the relationship between dividend payout and capital structure ($\beta=0.205$, $p=0.005$). The results also revealed that firm size significantly moderates the relationship between interest cover and capital structure ($\beta=0.205$, $p=0.005$).

4.9 Results from Secondary Data

4.9.1 Descriptive Statistics

Descriptive results were presented in Table 4.34 below.

Table 4.34: Descriptive Statistics

	CAPITAL_STRUCTURE	EARNINGS_AFTER_TAX	SHIELD	DIVIDEND_PAYOUT_RATIO	INTEREST_COVERAGE	FIRM_SIZE
Mean	0.845536	65261.91	6998.745	0.175375	6.125481	11.65909
Median	0.831812	61715.85	6355.356	0.170000	4.746384	12.00054
Maximum	1.756551	139883.8	23773.20	0.300000	31.82046	12.59754
Minimum	0.124304	1762.600	486.7650	0.050000	0.548266	9.751618
Std. Dev.	0.304868	37846.05	5385.773	0.074274	4.776058	0.841135
Skewness	0.243648	0.257559	0.776660	0.023440	1.711769	-0.794731
Kurtosis	3.083359	1.979211	2.878557	1.804944	6.422696	2.205069
Jarque-Bera	4.073442	21.78929	40.45917	23.83929	390.5909	52.63844
Probability	0.130456	0.000019	0.000000	0.000007	0.000000	0.000000
Sum	338.2142	26104764	2799498.	70.15000	2450.192	4663.635
Sum Sq. Dev.	37.08483	5.71E+11	1.16E+10	2.201144	9101.482	282.2960

The mean of the capital structure for the 80 firms running between 2011 and 2015 is 0.845536 with standard deviation of 0.304868. Its minimum and maximum were 0.124304 and 1.756551 respectively. The results further showed that the jarque – bera value of 4.073442 and p – value of 0.130456 demonstrated that the data for capital structure was normally distributed. In addition the mean of earnings was 65261.91 with standard deviation of 37846.05. Its minimum and maximum were 1762.600 and 139883.8 respectively. The results further showed that the jarque – bera value of 21.78929 and p – value of 0.000019 demonstrated that the data for earning was not

normally distributed. The results further showed that the mean for tax shield was 6998.745 with standard deviation of 5385.773. Its minimum and maximum were 486.7650 and 5385.773 respectively. The results further showed that the jarque – bera value of 40.45917 and p – value of 0.00000 demonstrated that the data for tax shield was not normally distributed. In addition the results showed that the mean for dividend payout was 0.175375 with standard deviation of 0.074274. Its minimum and maximum were 0.050000 and 0.300000 respectively. The results further showed that the jarque – bera value of 23.83929 and p – value of 0.000007 demonstrated that the data for dividend payout was not normally distributed. The mean of the interest cover for the 80 firms running between 2011 and 2015 is 6.125481with standard deviation of 4.776058. Its minimum and maximum were 0.548266 and 31.82046 respectively. The results further showed that the jarque – bera value of 390.5909 and p – value of 0.0000 demonstrated that the data for interest cover was not normally distributed. Lastly the mean of firm size was 11.65909 with a standard deviation of 0.841135. Its minimum and maximum were 9.751618 and 12.59754 respectively. The results further showed that the jarque – bera value of 52.638 and p – value of 0.000 demonstrated that the data for firm size was not normally distributed.

4.10 Trend Analysis

4.10.1 Capital Structure

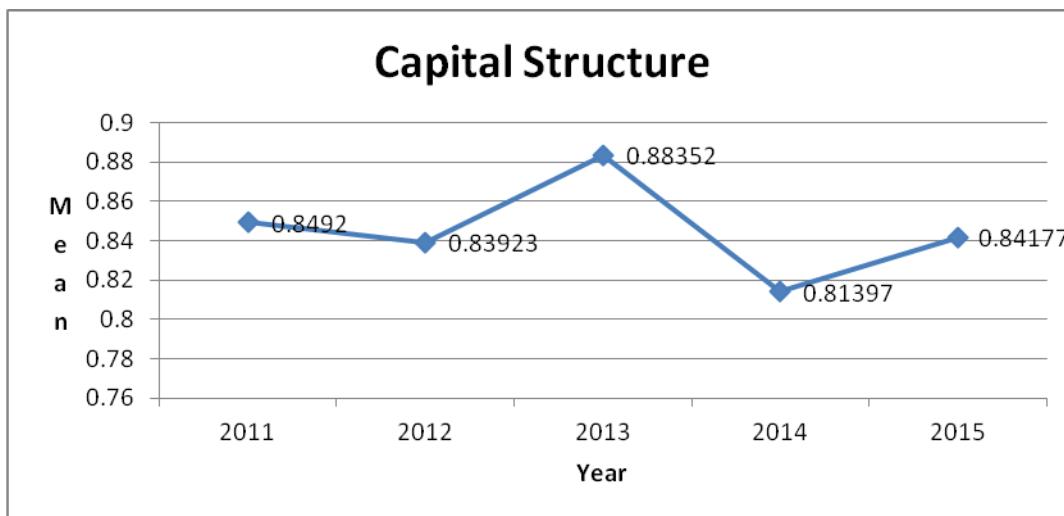


Figure 4.1: Trend Analysis for Capital Structure

The results revealed that the mean of capital structure in the year 2011 was 84.92%, in the year 2012 the mean was 83.923%, in the year 2013 the mean was 88.352%, in the year 2014 the mean was 81.397% while in the year 2015 the mean was 84.177%.

4.10.2 Earnings

The results revealed that the earnings in the year 2011 was 66095076.25, the earnings were 64933.96875 in the year 2012, in the year 2013 the earnings were 61070703.75, in the year 2014 the earnings were 71744828.75 while in the year 2015 the earnings were 62464972.5

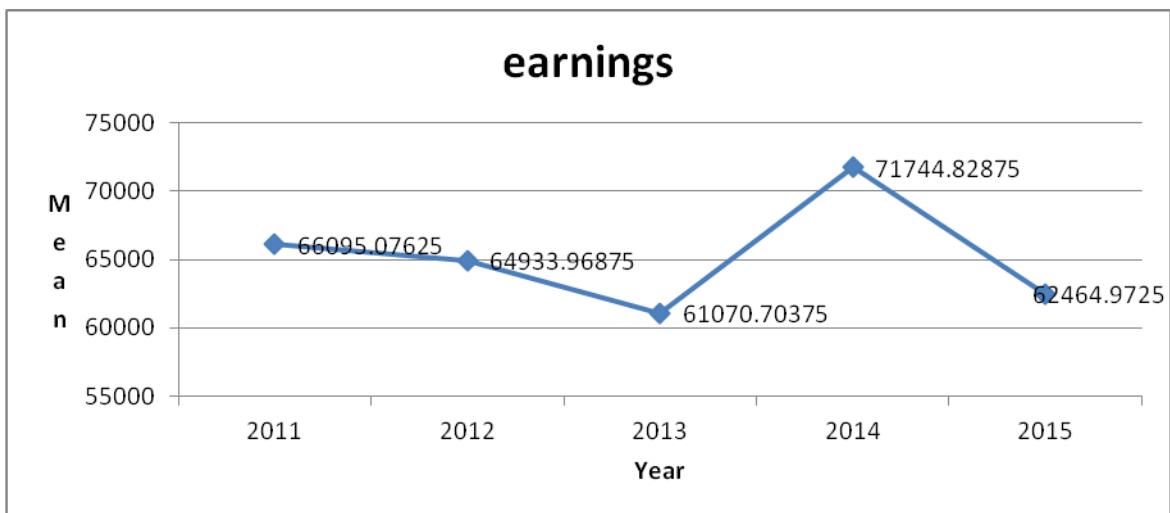


Figure 4.2: Trend Analysis for Earnings

4.10.3 Tax Shield

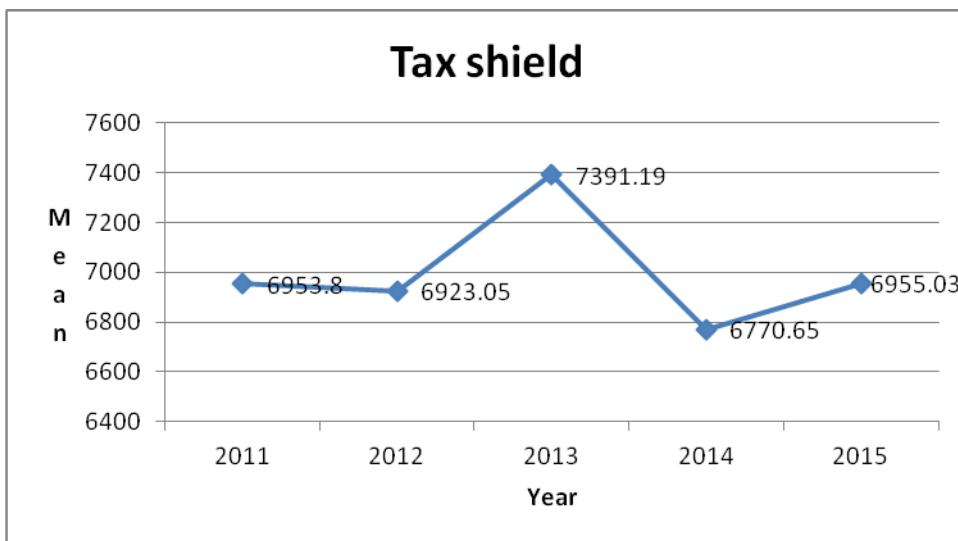


Figure 4.3: Trend Analysis for Tax Shield

The results revealed that the tax shield in the year 2011 was 6953.8, in the year 2012 the tax shield was 6923.05, in the year 2013 the tax shield was 7391.19, in the year 2014 the tax shield was 6770.65 while in the year 2015 the earnings were 6955.03.

4.10.4 Dividend Payout

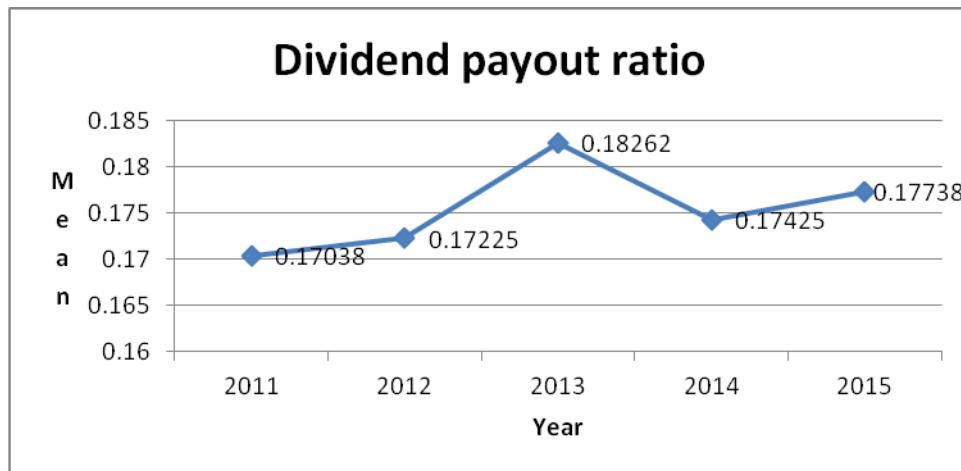


Figure 4.4: Trend Analysis for Dividend Pay Out

The results indicated that the dividend payout ratio in the year 2011 was 0.17038. The results further the dividend payout ratio in the year 2012 was 0.17225. The dividend payout ratio in the year 2013 was 0.18262. The dividend payout ratio in the year 2014 was 0.17425 while in the year 2015 the dividend payout ratio was 0.17738.

4.10.5 Interest Coverage

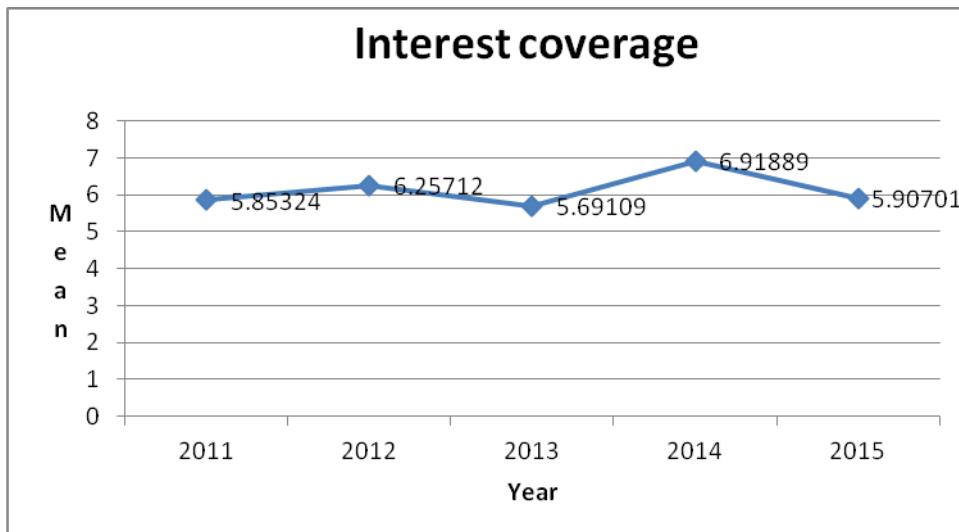


Figure 4.5: Trend Analysis for Interest Coverage

The results revealed that in the year 2011 the interest coverage was 5.85, in the year 2012 the interest coverage was 6.26, in the year 2013 the interest coverage was 5.69, in the year 2014 the interest coverage was 6.92 while in the year 2015 the interest coverage was 5.907.

4.10.6 Firm Size

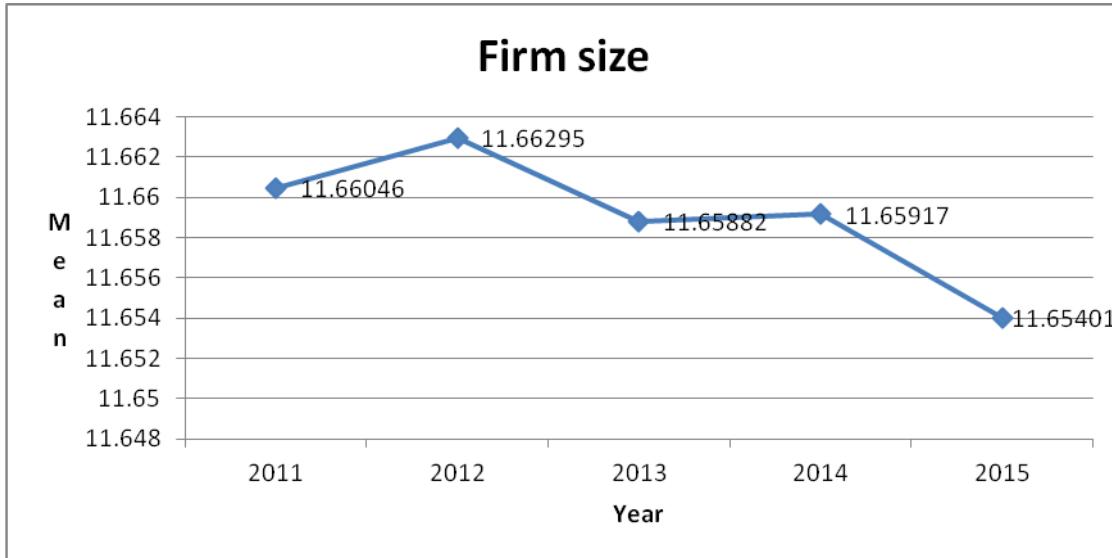


Figure 4.6: Trend Analysis for Firm Size

The results revealed that in the year 2011 the firm size was 11.660, in the year 2012 the firm size was 11.663, in the year 2013 the firm size was 11.6588, in the year 2014 the firm size was 11.6591 while in the year 2015 the firm size was 11.65401.

4.11 Diagnostic Tests

4.11.1 Normality Test

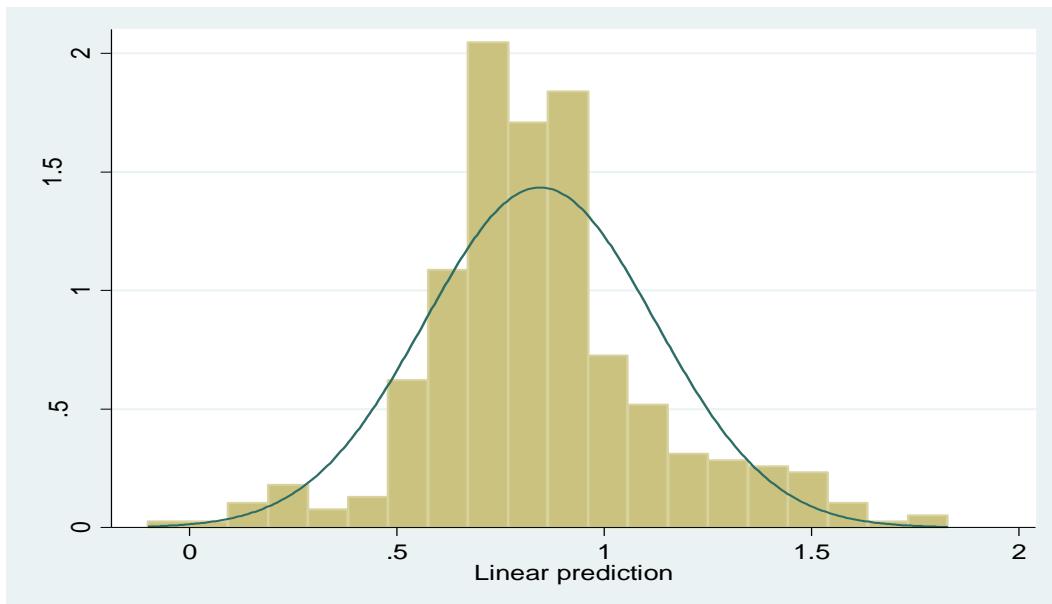


Figure 4.7: Normality Test

The test for normality was examined using the graphical method approach as shown in the Figure 4.12. The results in the figure indicate that the residuals are normally distributed.

4.11.2 Multicollinearity

According to William, Burke, Beckman, Morgan, Daly and Litz (2013) multicollinearity refers to the presence of correlations between the predictor variables. In severe cases of perfect correlations between predictor variables, multicollinearity can imply that a unique least squares solution to a regression analysis cannot be computed (Field, 2009). Multicollinearity inflates the standard errors and confidence intervals leading to unstable estimates of the coefficients for individual predictors (Belsley, Kuh & Welsch, 1980).

Multicollinearity was assessed in this study using the variance inflation factors (VIF). According to Field (2009) VIF values in excess of 10 is an indication of the presence of Multicollinearity.

Table 4.35: Multicollinearity results using VIF

Variable	VIF	1/VIF
Firm Size	3.66	0.27344
Tax Shield	3.42	0.2926
Earnings	3.24	0.30847
Interest cover	2.27	0.43976
Dividend payout	1.02	0.98226
Mean	2.72	

The results in Table 4.35 present variance inflation factors results and were established to be 2.72 which is less than 10 and thus according to Field (2009) indicates that there is no Multicollinearity.

4.11.3 Heteroscedasticity test

The error process may be Homoscedastic within cross-sectional units, but its variance may differ across units: a condition known as group wise Heteroscedasticity. The hettest command calculates Breuch Pagan for group wise Heteroscedasticity in the residuals. The null hypothesis specifies that $\sigma_i^2 = \sigma^2$ for $i = 1 \dots Ng$, where Ng is the number of cross-sectional units.

Table 4.36: Heteroscedasticity Results

**Modified Wald test for group wise heteroscedasticity
in fixed effect regression model**

H0: $\sigma_i^2 = \sigma^2$ for all i

chi2 (80) = 3907.02

Prob>chi2 = 0.0000

0.0632

The results in Table 4.36 indicate that the null hypothesis of Homoscedastic error terms is not rejected as supported by a p-value of 0.0632.

4.11.4 Autocorrelation Test

Because serial correlation in models biases the standard errors and causes the results to be less efficient, the study adopted the Breusch-Godfrey test for autocorrelation which identifies serial correlation in the idiosyncratic error term in a model.

Table 4.37: Test of Autocorrelation

Wooldridge test for autocorrelation in panel data

H0: no first-order autocorrelation

F(1, 79) = 0.226

Prob> F = 0.6360

From the Table 4.37 the null hypothesis of no serial correlation is not rejected given that the p-value is significant (p-value = 0.6360).

4.12 Hausman Test

In order to determine whether the fixed or random effects model is appropriate Hausman test was used. The Hausman test fundamentally tested whether the unique errors (u_i) are correlated with the regressors.

The results in table below illustrate the results of the Hausman test.

Table 4.38: Hausman Results

	Coefficients			
	(b) - (B) fixed	(b-B) random	sqrt(diag(V b-V_B)) Dif S.E.	
Earnings	1.11E-06	1.30E-06	-1.87E-07	.
Tax Shield	6.33E-05	6.07E-05	2.61E-06	5.37E-07
Dividend Payout	1.86E-06	1.61E-06	2.46E-07	.
Interest coverage	-0.0173114	-0.020178	0.0028667	0.0009469
Firm Size	-0.8264485	-0.298626	-0.5278226	0.0636262

b = consistent under Ho and Ha; obtained from xtreg
 B = inconsistent under Ha, efficient under Ho; obtained from xtreg
 Test: Ho: difference in coefficients not systematic
 $\text{chi2}(2) = (b-B)'[(V_b-V_B)^{-1}](b-B)$
 $= 91.64$
 Prob>chi2 = 0.0000
 (V_b-V_B is not positive definite)

A resultant p value of 0.000 was smaller than the conventional p value of 0.05 leading to the rejection of the null hypothesis that the unique errors (u_i) are not correlated with the regressors and thus the fixed effects model is more appropriate.

4.13 Correlation Analysis (Secondary Data)

Table 4.39 revealed the correlation results.

Table 4.39: Correlation Analysis

	Capital		Tax	Dividend	Interest	
	Structure	Earnings	shield	Payout	Coverage	Firmsize
Capital						
Structure		1.00				
Earnings	0.1961*		1.00			
Taxshield	0.7292*	0.5715*		1.00		
Dividend						
Payout	0.1177*	0.7314*	0.4184*		1.00	
Interest						
coverage	-0.6377*	0.02	-0.5808*	0.03		1.00
Firmsize	0.2782*	0.7297*	0.7515*	0.5777*	-0.3878*	

*=sig at 0.05

The results in table 4.39 revealed that earnings and capital structure has a weak positive association. These findings agree with that of Muema (2013) who observes that higher earnings will correspond to lower debt ratio. These findings also agree with that of Jamal *et al.*(2013) who asserts that firms with volatile earnings are liable to use less debt and supports the bankruptcy costs theory. In addition, the results revealed that tax shield and capital structure has a strong positive association. These findings agree with that of Abate (2012) who found a positive relation between dividend payout and debt ratio. These findings also agree with that of Mbulawa (2014) who found that a firm with high tax rate should use more debt rate therefore should have more income to shield from tax. The results also revealed that dividend payout and capital structure has a weak positive association. These findings agree with that of Abate (2012) who found a positive relation between dividend payout and debt ratio. The results also revealed that interest coverage and capital structure has a strong negative association. These findings agree

with that of Eriotis (2007) who concluded that higher interest coverage ratio implies lower debt. The results revealed that firm size and capital structure has a weak positive association.

4.14. Secondary Data Regression Results

4.14.1 Regression Results Before Moderation

Table 4.40: Regression Analysis

Capital Structure	Coef.	Std. Err	T	P> t 	[95% conf.Interval]	
Tax shield	6.8E-05	3.13E-06	21.71	0.000	6.2E-05	7.4E-05
earnings	1.02E-06	4.06E-07	2.51	0.012	2.21E-07	1.82E-06
Dividend payout	0.17432	0.10226	1.7	0.089	-0.0269	0.37552
Interest cover	-0.0127	0.00325	-3.91	0.000	-0.0191	-0.0063
_cons	0.35016	0.03854	9.09	0.000	0.27433	0.42599
R Squared=78.70						
F(4,316)= 291.84						
P= 0.000						

$$\text{Capital Structure} = 0.35016 + 1.02E-06X_1 + 6.8E-05X_2 + 0.17432X_3 - 0.0127X_4$$

Where;

X₁= Earnings

X₂= Tax Shield

X₃= Dividend Payout

X₄=Interest Coverage

The results in table 4.40 showed that tax shield have a positive and significant relationship with capital structure ($\beta = 6.8E-05$, $p=0.000$). These findings also agree with that of Mbulawa (2014) who found that a firm with high tax rate should use more debt rate hence have more income to shield from tax. The results also revealed that earnings had a positive and significant relationship with capital structure ($\beta = 1.02E-06$, $p=0.012$). These findings agree with that of Muema (2013) who observes that higher earnings will correspond to lower debt ratio. These findings also agree with those of Jamal *et al.* (2013) who asserts that firms with volatile earnings are liable to use less debt .

These findings also agree with that of Mbulawa (2014) who found that a firm with high tax rate should use more debt rate therefore should have more income to shield from tax. The results also revealed that dividend payout have a positive and significant relationship with capital structure ($\beta = 0.17432$, $p=0.089$).These findings agree with that of Abate (2012) who found a positive relation between dividend payout and debt ratio. The results also revealed that interest coverage have a negative and significant relationship with capital structure ($\beta = -0.0127$, $p=0.000$). These findings agree with that of Eriotis (2007) who concluded that higher interest coverage ratio implies lower debt.

The R squared before control was 78.70% while the overall regression model was significant ($P=0.000$). The F statistics before interaction was 291.84.

4.14.2 Regression Results after Moderation

Table 4.41: Regression Analysis after Moderation

	Coef.	Std. Err.	t	P>t	[95% Conf.	Interval]
Tax shield_M	5.90E-08	2.44E-08	2.42	0.016	1.10E-08	1.07E-07
Earnings_M	0.37934	0.03972	9.55	0.000	0.30119	0.45748
Dividend payout_M	5.36E-06	2.71E-07	19.8	0.000	4.83E-06	5.89E-06
Interest cover_M	-0.0012	0.00029	-3.98	0.000	-0.0017	-0.0006
_cons	0.01833	0.01281	1.43	0.153	-0.0069	0.04353
R Squared=79.89						
F= 298.9						
P= 0.000						

Capital Structure = 0.01833+5.90E-08X₁.M+0.37934X₂.M+5.36E-06X₃.M-0.0012X₄.M

Where;

X₁= Earnings

X₂= Tax Shield

X₃= Dividend Payout

X₄=Interest Coverage

M=Firm Size Moderator

The results also revealed that firm size moderates the relationship between firm characteristics and capital structure (p=0.000).

The R squared after moderation was 79.89% while the overall regression model was significant (P=0.000). The F statistics before moderation was 378.25.

Thus the specific model was;

Table 4.42: Table of Comparison

	Before Moderation	After Moderation
R squared	78.70%	79.89%
P - Value	0.000	0.000
F - Statistics	291.84	298.9

4.15 Hypotheses Testing

The hypotheses were tested using multiple linear regressions Table 4.41.

4.15.1 Hypothesis Testing for Earnings

The hypothesis was tested by using multiple linear regression table 4.41. The acceptance/rejection criteria was that, if the p value is greater than 0.05, the H_0 is not rejected but if it's less than 0.05, the H_0 fails to be accepted. The null hypothesis was that there is no significant relationship between earnings and capital structure of private manufacturing firms in Kenya. Results in Table 4.43 show that the p-value was 0.000 $p < 0.05$. This indicated that the null hypothesis was rejected hence there is a significant relationship between earnings and capital structure of private manufacturing firms in Kenya. These findings agree with that of Muema (2013) who observes that higher earnings will correspond to lower debt ratio. These findings also agree with that of Jamal *et al.*(2013) who asserts that firms with volatile earnings are liable to use less debt and supports the bankruptcy costs theory.These findings were inconsistent with that of Köksal *et al.* (2013) who found a negative relationship between debt and earnings.

4.15.2 Hypothesis Testing for Tax Shield

The hypothesis was tested by using multiple linear regression. The acceptance/rejection criteria was that, if the p value is greater than 0.05, the H_02 is not rejected but if it's less than 0.05, the H_02 fails to be accepted. The null hypothesis was that there is no significant relationship between tax shield and capital structure of private manufacturing firms in Kenya. Results in Table 4.43 show that the p-value was $0.000 < 0.05$. This indicated that the null hypothesis was rejected hence there is a significant relationship between tax shield and capital structure of private manufacturing firms in Kenya. These findings also agree with that of Mbulawa (2014) who found that a firm with high tax rate should use more debt rate therefore should have more income to shield from tax.

4.15.3 Hypothesis Testing for Dividend Payout

The hypothesis was tested by using multiple linear regressions as shown in table 4.41. The acceptance/rejection criteria was that, if the p value is greater than 0.05, the H_03 is not rejected but if it's less than 0.05, the H_03 fails to be accepted. The null hypothesis was that there is no significant relationship between dividend payout and capital structure of private manufacturing firms in Kenya. Results in Table 4.43 show that the p-value was $0.000 < 0.05$. This indicated that the null hypothesis was rejected hence there is a significant relationship between dividend payout and capital structure of private manufacturing firms in Kenya. These findings agree with that of Abate (2012) who found a positive relation between dividend payout and debt ratio.

4.15.4 Hypothesis Testing for Interest Coverage

The hypothesis was tested by using multiple linear regression table 4.41. The acceptance/rejection criteria was that, if the p value is greater than 0.05, the H_0_4 is not rejected but if it's less than 0.05, the H_0_4 fails to be accepted. The null hypothesis was that there is no significant relationship between interest coverage and capital structure of private manufacturing firms in Kenya. Results in Table 4.43 show that the p-value was $0.001 < 0.05$. This indicated that the null hypothesis was rejected hence there is a significant relationship between interest coverage and capital structure of private manufacturing firms in Kenya. These findings agree with that of Eriotis (2007) who concluded that higher interest coverage ratio implies lower debt.

4.15.5 Hypothesis Testing for the Firm Size

The hypothesis was tested by using multiple linear regression table 4.41. The acceptance/rejection criteria was that, if the p value is greater than 0.05, the H_0_5 is not rejected but if it's less than 0.05, the H_0_5 fails to be accepted. The null hypothesis was that there is no significant moderating effect between firm size and capital structure of private manufacturing firms in Kenya. Results in Table 4.43 show that the p-value was $0.001 < 0.05$. These findings agree with that of Abate (2012) who found that size have significant positive influence on on capital structure choice of insurance companies.

Table 4.43: Summary of Hypothesis

Hypothesis	P - Value	Results
H_{01} : Earnings have no significant influence on capital structure of private manufacturing firms in Kenya	0.000	Positive and significant (Reject H_{01})
H_{02} : Tax Shield has no significant influence on capital structure of private manufacturing firms in Kenya.	0.000	Positive and significant (Reject H_{02})
H_{03} : Dividend payout has no significant influence on capital structure of private manufacturing firms in Kenya.	0.004	Positive and significant (Reject H_{03})
H_{04} : Interest cover has no significant influence on capital structure of private manufacturing firms in Kenya.	0.000	Positive and significant (Reject H_{04})
H_{05} : Firm Size has no significant moderating effect on capital structure of private manufacturing firms in Kenya.	0.000	Positive and significant (Reject H_{05})

4.16 Discussion of Results

The results study found that tax shield have a positive and significant relationship with capital structure. Hypothesis results also indicated that there was a significant relationship between tax shield and capital structure of private manufacturing firms in Kenya. These findings also agree with that of Mbulawa (2014) who found that a firm with high tax rate should use more debt rate therefore should have more income to shield from tax.

The study also found that earnings have a positive and significant relationship with capital structure. There is a significant relationship between earnings and capital structure of private manufacturing firms in Kenya. These findings agree with that of Muema (2013) who observes that higher earnings will correspond to lower debt ratio. These findings also agree with those of Jamal *et al.* (2013) who asserts that firms with volatile earnings are liable to use less debt .

The results also indicated that dividend payout have a positive and significant relationship with capital structure. The hypothesis results also showed that there is a significant relationship between dividend payout and capital structure of private manufacturing firms in Kenya. These findings agree with that of Abate (2012) who found a positive relation between dividend payout and debt ratio. The results also revealed that interest coverage have a negative and significant relationship with capital structure. The hypothesis results revealed that there is a significant relationship between dividend payout and capital structure of private manufacturing firms in Kenya. These findings agree with that of Eriotis (2007) who concluded that higher interest coverage ratio implies lower debt.

The findings further indicated that firm size moderates the relationship between firm characteristics and capital structure. The hypothesis results further revealed that statistically firm size moderates the relationship between firm characteristics and capital structure of private manufacturing firms in Kenya. These findings agree with that of Abate (2012) who found that size have significant positive influence on on capital structure choice of insurance companies.

CHAPTER FIVE

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

5.1 Introduction

This chapter provides a summary of the findings from the analysis, the conclusions and the recommendations. This was done in line with the objectives of the study.

5.2 Summary of Findings

5.2.1 Earnings on the Capital Structure

The first objective of the study was to establish the influence of earnings on the capital structure of private manufacturing firms in Kenya. Majority of the respondents stated that firm's high earnings cause an increase in debt, firm can use earnings to fund investments, with high earnings the firm will consider taking less debt, firms with volatile earnings are liable to use less debt. Further the results revealed that most respondents noted that firms choose internal funds generated from earnings because internal funds are cheaper and not subjected to outside influence, firms prefer raising capital from retained earnings then from debt and then equity, by taking more debt the activities of managers are controlled, firm prefers internal finance first before considering external finance.

From trend analysis results, the earnings of private manufacturing firms in Kenya had been decreasing over the years. The regression results indicated that there was a positive and significant relationship between earnings and capital structure of private manufacturing firms in Kenya. The hypothesis results further revealed there was a statistical significant relationship between earnings and capital structure of private manufacturing firms in Kenya.

5.2.2 Tax Shield on the Capital Structure

The second objective of the study was to determine the influence of tax shield on the capital structure of private manufacturing firms in Kenya. Results revealed that majority of the respondents stated that the firm will take more debt when debt tax shields are high. The results also revealed that the firm prefers debt to gain from debt tax shields. Results also revealed that the firm's debt tax shields guarantees high debt. Further the results revealed that Increase in debt tax shields will make the firm increase in use of debt. The results also revealed that the higher debt tax shield the higher tax advantage from debt interest to the firm. In addition, the results revealed that with high tax rate, the firm uses more debt and has more income to shield from tax.

The regression results revealed that tax shield have a positive and significant effect on the capital structure of private manufacturing firms in Kenya. The hypothesis results further revealed there was a statistical significant relationship between tax shield and capital structure of private manufacturing firms in Kenya.

5.2.3 Dividend Payout on Capital Structure

The third objective of the study was to establish the influence of dividend payout on capital structure of Private Manufacturing Firms in Kenya. Majority of the respondents stated that; high dividend payout debt is high, low dividend payout leads to low debt, low dividend causes increase in equity and hence low debt, low dividend payout ratio implies increase in the equity base for debt capital and low chance of going into liquidation. Further the results revealed firm's high dividend indicates internal stability and ability to secure more debt in the future, firm's high dividend signals future growth in debt as well as equity, high dividend payout means that debt is high

The results indicated a positive relationship between dividend payout and capital structure. The regression results revealed that dividend payout have a positive and significant effect on capital structure of Private Manufacturing Firms in Kenya. The

hypothesis results further revealed there was a statistical significant relationship between dividend payout and capital structure of private manufacturing firms in Kenya.

5.2.4 Interest Cover on the Capital Structure

The fourth objective of the study was to determine the influence of interest cover on the capital structure of private manufacturing firms in Kenya. Results revealed that agreed that high interest cover indicates less debt. The results also revealed that increase in interest cover shows reduction in debt. Results also revealed that high interest implies the high debt in future. Further the results revealed that high interest payments means there is high debt. Results indicated revealed that increase in interest cover shows reduction in debt, high interest coverage ratio implied high debt in future, high interest payments meant there was high debt lower interest indicating lower debt. The results also revealed that low interest cover indicates high debt.

The regression results revealed that interest cover have a negative and significant effect on the capital structure of private manufacturing firms in Kenya. The hypothesis results further revealed there was a statistical significant relationship between dividend payout and capital structure of private manufacturing firms in Kenya.

5.2.5 Firm Size on the Capital Structure

The fifth objective of the study was to determine the moderating influence of firm size on the capital structure of private manufacturing firms in Kenya. Results revealed that large diversified firm accommodates more debt. The results also revealed that large firms have cash flow to support more debt. Results also revealed that the firm is able to accommodate more debt its size. Further the results revealed that large firms provide symmetric information which supports more debt. The results also revealed that the firm repays its debts due to its large size. In addition the results revealed that agreed that the firm achieves growth through debt. The results also revealed that firm size have a positive and significant relationship with capital structure

Results showed that some of the respondents disagreed that large diversified firms accommodates more debt and further they disagreed that large firms have cash flow to support more debt. Results also reveal that some respondents disagreed that the firm achieves growth through debt.

The regression results revealed that firm size have a positive and significant effect on the capital structure of private manufacturing firms in Kenya. The regression results further showed that firm size moderates the relationship between firm characteristics and capital structure of private manufacturing firms in Kenya. The hypothesis results further revealed that statistically firm size moderates the relationship between firm characteristics and capital structure of private manufacturing firms in Kenya.

5.3 Conclusions of the Study

Based on the research findings the study concluded that earnings, tax shield, dividend payout, and firm size have a positive and significant effect on capital structure. However interest coverage had a negative influence

5.3.1 Earnings on the Capital Structure

Primary results revealed that the firm's high earnings cause an increase in debt. The results also revealed that the firm can use earnings to fund investments. These findings mean that profitable firms can use earnings to fund investments and hence less need for an external debt. The results further revealed that with high earnings the firm will consider taking less debt. Firms with volatile earnings are liable to use less debt. These findings support pecking order theory and argue that firms choose internal funds generated from earnings because internal funds are cheaper and not subjected to outside influence.

Results from primary data revealed that a greater percentage of the respondents disagreed with the statement that the firms' high earnings cause an increase in debt which means that firms would prefer to use internal funds before seeking out external

funds debt included. Correlation results from primary data revealed that earnings and capital structure has a weak positive and significant relationship. The correlation results from secondary data revealed that earnings and capital structure has a weak positive association. The regression results presented the fitness of model used in explaining the study phenomena. Earnings were found to be satisfactory variable in explaining capital structure. In addition, firms raise capital first from earnings then debt. Most firms also prefer internal finance first before considering external finance. As regards trend analysis earnings showed an upward trend over the study period.

5.3.2 Tax Shield on the Capital Structure

Debt tax shields guarantees high debt. In this case most firms will take more debt when debt tax shields are high. In addition the study concluded that the higher the debt tax shields the higher tax advantage from debt interest to the firm. In addition, the correlation results revealed that tax shield and capital structure has a strong positive and significant relationship. A firm with high tax rate should use more debt to shield from tax. In addition, the correlation secondary results revealed that tax shield and capital structure has a strong positive association. These findings also agree that a firm with high tax rate should use more debt therefore should have more income to shield from tax. Tax shield was found to be satisfactory variable in explaining capital structure. As regards trend analysis tax shield showed an upward trend over the study period. Results from primary data revealed that a greater percentage of the respondents disagreed with the statement that the higher the debt tax shield the higher the tax advantage the debt interest from the firm.

5.3.3 Dividend Payout on Capital Structure

The study concluded that low dividend payout ratio implies increase in the equity base for debt capital and low chance of going into liquidation. In this case with high dividend payout debt is high. In addition firm's high dividend indicates internal stability and ability to secure more debt in the future. The correlation results from primary data also

revealed that dividend payout and capital structure has a weak positive and significant association. These correlation results found a positive relation between dividend payout and debt ratio. The results also revealed that dividend payout and capital structure has a weak positive association. Dividend payout was found to be satisfactory variable in explaining capital structure. As regards trend analysis dividend payout showed an upward trend over the study period. Results from primary data revealed that a greater percentage of the respondents disagreed with the statement that with high dividend payout means that debt is high

5.3.4 Interest Cover on the Capital Structure

High interest cover indicates less debt. In addition interest payments means there is high debt. A lower interest coverage ratio indicates a higher debt ratio and high interest payments means there is high debt. Lastly, the correlation results from secondary data also revealed that interest coverage and capital structure has a weak positive association. These findings agree that higher interest coverage ratio implies lower debt. Interest cover was found to be satisfactory variable in explaining capital structure. As regards trend analysis interest cover showed an upward trend over the study period. Results from primary data revealed that a greater percentage of the respondents disagreed with the statements that high interest coverage ratio implied high debt in future, that high interest payments means there is high debt and that lower interest indicated lower debt.

5.3.5 Firm Size on the Capital Structure

It was also observed that large diversified firms also accommodate more debt. This is because large firms have cash flow to support more debt. Large firms provide symmetric information which supports more debt. Lastly, the results revealed that firm size and capital structure has a weak positive and significant relationship. The study concluded that high earnings cause increase in debt. The R squared before control was lower

showing that firm size had a significant controlling effect. As regards trend analysis firm size showed an upward trend over the study period. Results from primary data revealed that a greater percentage of the respondents disagreed with the statements large diversified firms accommodates more debt, that large firms have cash flow to support more debt and that the firm achieves growth through debt.

5.4 Recommendations of the Study

The study recommended that firms should have high earnings so as to cause an increase in debt. The study also recommends that firms should raise capital first from earnings then debt and firms also should prefer internal finance first before considering external finance. Profitable firms can use earnings to fund investments and hence less need for an external debt.

The study also recommended that use of corporate bonds entails the enjoyment of the interest tax shield. In other words the use of debt improves the shareholder's wealth. It is recommended that private manufacturing firms should engage strategic investors. Such investors should provide loans to the manufacturing firms for example such strategic investor can advance long term loans to the manufacturing firms.

The study also recommends that in order for a company to increase its dividend payout ratio, it must decrease its leverage since it affects dividend payout ratio negatively. This study established that liquidity and profitability play a key role in determining dividend payout for manufacturing firms. This study therefore recommends that manufacturing firms observe their policies dealing with these variables in order to ensure that their dividend payout ratio is kept stable because of the key information that it passes to both investors and the general public. This will ensure stability of the firms which in turn promotes a vibrant market.

A poor Interest coverage ratio indicates that the company does not have funds to repay debt obligations that means the company has excess debt and debt is the part of capital

employed. So as to improve the interest coverage ratio one needs to decrease the debt or increase the productivity. Therefore, decreasing the debt will certainly alter the capital structure. Chief Finance officers of manufacturing firms should take into account the industry norms when developing their financial policies. Capital structure of comparable companies in the industry should be considered because it might reflect the unique risks inherent in that industry.

From policy perspective, the Government of Kenya through the Ministry of Industrialization should create an authority to oversee the development and success of manufacturing sector so as to be in line with the economic pillar of Vision 2030. Kenya Association of Manufacturers (KAM) and policy makers should advocate for qualified personnel to be employed as chief finance officers in the member firms. This will ensure that chief finance officers are members of the Institute of Certified Public Accountants of Kenya (ICPAK) and are regulate by ICPAK to attain a number of continuous professional development credit hours per year.

5.5 Areas of Further Research

Related studies should be conducted for members of the Kenya Association of Manufacturers who are engaged in consultancy and support services but not manufacturing; a similar study can be carried out on country wide non manufacturing firms. Further a separate study can be conducted on each segment as provided for in the members' directory of 2015. In addition, a similar study could be conducted but focus on the public manufacturing firms in Kenya.

Since the R squared was not 100% it seems there are other firm characteristics that were not addressed by the study. The study also recommends that a study seeking to establish influence of other variables on capital structure of private manufacturing firms. These other variables may encompass free cash flows, ownership structure, risk, financial distress, liquidity, growth opportunities. Other important external variables such as

inflation, GDP, interest rate, corporate governance, legal framework and country's financial system should be added besides the firm specific factors' on capital structure.

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APPENDICES

Appendix I: LETTER OF AUTHORIZATION

Date.....

Managing Director

Name of the Manufacturing firm.....

P.O. Box

Dear Sir,

RE: RESEARCH DATA ON “INFLUENCE OF FIRM CHARACTERISTICS ON CAPITAL STRUCTURE OF PRIVATE MANUFACTURING FIRMS IN KENYA”

I am a student pursuing a Doctorate Degree in Business Administration- Finance Option at Jomo Kenyatta University of Agriculture and Technology. I am required to undertake a research thesis as partial fulfillment for the award of this degree in the College of Human Resource Development (COHRED). My research topic is stated above and kindly request for your assistance in making my research a success.

The purpose of this letter is to request you to grant permission to collect relevant data from your organization from selected respondents among your management staff. The information collected will be treated with utmost confidentiality and will be used solely for the purpose of this research only.

I wish your firm fruitful business.

Yours Sincerely

Malenya Anjetsa Abraham

Reg No. HD433-C009-1550-2014

Appendix II: QUESTIONNAIRE

Kindly respond to each question by putting a tick (✓)

SECTION - A

Background Information

1. When did your company commence its operations?

1-10 Years ago ()

11-20 Years ago ()

21-30 Years ago ()

31- 40 Years ago ()

41-50 Years ago ()

2. Kindly indicate the number of years your firm has been a member of KAM

1-5 Years ()

6-10 Years ()

11-15 Years ()

16-20 Years ()

21-25 Years ()

Over 25 Years ()

3. Under what classification is your firm placed by Kenya Association of

Manufacturers (KAM)?

13. Building, Mining & Construction ()
14. Chemical & Allied Sector ()
15. Energy, Electrical & Electronics ()
16. Fresh Produce ()
17. Food & Beverages ()
18. Leather & Footwear ()
19. Metal & Allied Sector ()
20. Paper & Board Sector ()
21. Pharmaceutical & Medical Equipment ()
22. Plastics & Rubber ()
23. Textile & Apparels ()
24. Timber, Wood & Furniture ()
-

4. What form of business organization is your firm?

- Quoted Company ()
- Other limited company ()
- Partnership ()
- Sole Proprietorship ()
- Other, please specify

5. How many workers are currently employed by your company employed?

Between 1 and 10 workers ()

Between 11 and 50 workers ()

Between 51 and 100 workers ()

Between 101 and 250 workers ()

Between 251 and 500 workers ()

Over 500 workers ()

SECTION B EARNINGS

This section has statements regarding the influence of earnings on capital structure of private manufacturing firms in Kenya. Kindly respond with the response that matches your opinion. Please tick as appropriate in the boxes using a tick (✓).

No	Statement	Strongly Disagree	Disagree	Neither agree nor disagree	Agree	Strongly Agree
		1	2	3	4	5
1.	The firm's high earnings cause increase in debt					
2.	The firm can use earnings to fund investments					
3.	With high earnings the firm will consider taking less debt					
4.	Increased earnings support high debt.					
5.	The firm considers internal funds cheaper					
6.	The firm raises capital first from earnings then debt					
7.	The firms' profitability leads to use of less debt.					

8.	With high profitability the firm usually repay loans					
9.	By taking more debt the activities of managers are controlled					
10.	The firm prefers internal finance first before considering external finance					

SECTION C: TAX SHIELD

<p>This section has statements regarding the influence of taxation on capital structure of manufacturing firms in Kenya. Kindly respond with the response that matches your opinion. Please tick as appropriate in the boxes using a tick (✓).</p>						
No	Statement	Strongly Disagree	Disagree	Neither agree nor disagree	Agree	Strongly Agree
		1	2	3	4	5
11.	The firm will take more debt when debt tax shields are high					
12.	The firm prefers debt to gain from debt tax shields					
13.	The firms debt tax shields guarantees high debt					

14.	Increase in debt tax shields will make the firm increase use of debt.					
15.	The higher debt tax shield the higher tax advantage from debt interest to the firm					
16.	With high tax rate the firm uses more debt and has more income to shield from tax					

SECTION D: DIVIDEND PAYOUT

<p>This section has statements regarding the influence of dividend payout on capital structure of private manufacturing firms in Kenya. Kindly respond with the response that matches your opinion. Please tick as appropriate in the boxes using a tick (✓).</p>						
No	Statement	Strongly Disagree	Disagree	Neither agree nor disagree	Agree	Strongly Agree
		1	2	3	4	5
17.	With high dividend payout debt is high					
18.	Low dividend payout leads to low debt					
19.	Low dividend causes increase in equity and hence low debt					
20.	The firm's high dividend indicates internal stability and ability to secure more debt in the future					
21.	The firm's high dividend signals future growth in debt as well as equity					

SECTION E: INTEREST COVER

This section has statements regarding the influence of interest cover on capital structure of private manufacturing firms in Kenya. Kindly respond with the response that matches your opinion. Please tick as appropriate in the boxes using a tick (✓).

No	Statement	Strongly Disagree	Disagree	Neither agree nor disagree	Agree	Strongly Agree
		1	2	3	4	5
22.	High interest cover indicates less debt					
23.	Increase in interest cover shows reduction in debt					
24.	High interest coverage ratio implies the high debt in future					
25.	High interest payments means there is high debt					
26.	Low interest cover indicates high debt .					

SECTION F: FIRM SIZE

<p>This section has statements regarding the influence of firm size on capital structure of private manufacturing firms in Kenya. Kindly respond with the response that matches your opinion. Please tick as appropriate in the boxes using a tick (✓).</p>						
No	Statement	Strongly Disagree	Disagree	Neither agree nor disagree	Agree	Strongly Agree
		1	2	3	4	5
27	Large diversified firm accommodates more debt					
28.	Large firms have cash flow to support more debt					
29.	The firm is able accommodate more debt its size					
30.	Large firms provide symmetric information which supports more debt.					
31.	The firm repays its debts due to its large size.					
32.	The firm achieves growth through debt					

SECTION G: CAPITAL STRUCTURE

<p>This section has statements on capital structure of private manufacturing firms in Kenya. Kindly respond with the response that matches your opinion. Please tick as appropriate in the boxes using a tick (✓)</p>						
No	Statement	Strongly Disagree	Disagree	Neither agree nor disagree	Agree	Strongly Agree
		1	2	3	4	5
33.	Costs of acquisition of debt in the firm are low					
34.	The Board of Directors prefers use of debt in financing.					
35.	The organization is accessible to financial institutions willing to advance debt					
36.	The firm's use of debt capital lowers cost of capital					
37.	High interest obligation makes the management fear use of debt					

Thank you for taking your time to respond to this research questionnaire

Appendix III: Document Review/Record Survey Sheet/Secondary Data Collection Template

The record survey sheet filled in by the researcher. All information required in the matrix will come from the annual reports of the manufacturing firms for the period 2011 to 2015.

Year / variable	Total Assets	Total debt	Earnings before interest and tax	Dividends paid	Dividend ratio	Interest	Corporation rate of tax	Tax shield	Earnings after tax	Interest cover	Capital structure	Firm size
2011												
2012												
2013												
2014												
2015												

Appendix IV: MANUFACTURING FIRMS

BUILDING MININGNG AND CONSTRUCTION INDUSTRY

1. ARM Cement Ltd
2. Bamburi Cement Ltd
3. Boyama Building Materials
4. Central Glass Industries
5. East Africa Portland Cement
6. Flamingo Tiles (Kenya Ltd)
7. Glenn Investment Ltd
8. International Energy Technik Ltd
9. Kenbro Industries Ltd
10. Kenya Builders and Concrete Ltd
11. Manson Hart Kenya Ltd
12. Orbit Enterprises Ltd
13. Reliable Concrete Works Ltd
14. Saj Ceramics Ltd
15. Savanna Cement
16. Space and Style ltd
17. Tile and Carpet Centre
18. Virji Vishram Patel and Sons
19. Vallem Construction Ltd

CHEMICAL AND ALLIED SECTOR

1. Anffi Kenya Ltd
2. Basco Products (K) Ltd
3. Bayer East Africa Ltd
4. Beiersdorf East Afriaca Ltd
5. Blue Ring Products Ltd
6. BOC Kenya Ltd
7. Buyline Industries Ltd
8. Canon Chemicals Ltd
9. Carbacid (K) Ltd
10. Chemicals and Solvent
11. Chrysal Africa Ltd
12. Continental Products Ltd
13. Cooper K-Brands Ltd
14. Crown Gases Ltd
15. Crown Paints (Kenya) Ltd
16. Darfords Industries Ltd
17. Decase Chemicals Industries Ltd
18. Deluxe Inks Ltd
19. Desbro Kenya Ltd
20. Doric Industries Ltd
21. Elex Products Ltd
22. Galaxy Paints and Coating co. Ltd
23. Grand Paints Ltd
24. Haco Tiger Brands (EA) Ltd
25. Henkel Kenya Ltd

- | | |
|--|---|
| 26. Henkel Polymer | 53. Soilexprosolve ltd |
| 27. Hi- Tech Ink And Coatings | 54. Strategic Industries Ltd |
| 28. Inter Consumer Products | 55. Super Brite Ltd |
| 29. Johnson Diversey East Africa
Ltd | 56. Superform Ltd |
| 30. Kamili Packers Ltd | 57. Syngenta East Africa Ltd |
| 31. Kel Chemicals Ltd | 58. Synresins Ltd |
| 32. Kenya Nat Ink & Chemicals Ltd | 59. Tri- Clover Industries Ltd |
| 33. Kip Melamine Co. Ltd | 60. Tropical Brand (Africa) Ltd |
| 34. Kridha Ltd | 61. Twiga Chemicals Industries Ltd |
| 35. Leatherlife (EPZ) Ltd | 62. Unilever East Africa Ltd |
| 36. L'Oreal East Africa Ltd | 63. Vita Foam Products Ltd |
| 37. Maroo Polymers Ltd | 64. Waridi Creations Ltd |
| 38. Match Masters Ltd | 65. West Minister Paints and Resins
Ltd |
| 39. Mea Ltd |
ENERGY, ELECTRICALS AND
ELECTRONICS SECTOR |
| 40. Metoxide Africa Ltd | 1. Amedo Centre Kenya Ltd |
| 41. Murphy Chemicals Ltd | 2. Asano International Ltd |
| 42. Odex Chemicals Ltd | 3. Assa Abloy East Africa Ltd |
| 43. Orbit Chemicals Ltd | 4. Aucma Digital Technology |
| 44. Osho Chemicals Ltd | 5. Avery East Africa Ltd |
| 45. Polychem East Africa | 6. Bauman Engineering Ltd |
| 46. Procter And Gamble | 7. Centurion Systems Ltd |
| 47. PZ Cussons EA Ltd | 8. Digitech East Africa Ltd |
| 48. Reckitt Benckiser (EA) Ltd | 9. East African Cables Ltd |
| 49. Rok Industries Ltd | 10. Farm Refrigeration And
Electrical Systems Ltd |
| 50. Rutuba Bio Agri & Organic
Fertilizers Co. Ltd | 11. Holman Brothers (E.A) Ltd |
| 51. Sadolin Paints (EA) Ltd | |
| 52. Saweco paints ltd | |

12. Ibera Africa Power (E.A) Ltd
13. International Energy Technik Ltd
14. Kenwest Cables Ltd
15. Libya Oil Kenya Ltd
16. Manufacturers And Supplies (K) Ltd
17. Metlex International Ltd
18. Marshall fowler engineers ltd
19. Nationwide Chemicals Industries Ltd
20. Optimum Lubricants Ltd
21. Ouru Power Ltd
22. Power Technics Ltd
23. Powered Lubricants
24. Roka Industries
25. Scales And Software (K) Ltd
26. Socabelec (E.A) Ltd
27. Sollatek Electronics (K) Ltd
28. Solmpex Africa Ltd
29. Synergy Lubricants Solutions
30. Ubbink East Africa
31. Vivo Energy Kenya Ltd

FRESH PRODUCE

1. Acqiza development co ltd
2. Avoken ltd
3. From eden
4. Kankam exporters ltd

5. Mahee flowers
6. Maridadi flowers
7. Rainforest farmland Kenya ltd
8. Sunland roses ltd

FOOD AND BEVERAGES

1. Africa Spirits ltd
2. Agriner agricultural development
3. Agripro –pak ltd
4. Al mahra industries
5. Al phine foods ltd
6. Alpine coolers ltd
7. Aquamist ltd
8. Bakers corner ltd
9. Belat enterprises
10. Belfast millers ltd
11. Beverage services Kenya ltd
12. Bidco Africa ltd
13. Bio food products ltd
14. Buwty ltd
15. The breakfast cereal co ltd
16. British American tobacco Kenya ltd
17. Broadway bakery ltd
18. Brookside dairy ltd
19. C. Dormans ltd
20. C. Czarnikow sugar east Africa ltd

21. Cadbury Kenya ltd
 22. Candy Kenya ltd
 23. Capwell industries ltd
 24. Cewtrofood industries ltd
 25. Chrag Kenya ltd
 26. Cocacola east and central Africa ltd
 27. Coffeagriworks ltd
 28. Deeper industries
 29. Europack industries ltd
 30. Excel chemicals ltd
 31. Farmers choice ltd
 32. Glaciersproducts
 33. Global fresh ltd
 34. Gonas best ltd
 35. Green forest food td
 36. Heritage foods Kenya ltd
 37. Highland canners ltd
 38. Insta products (ep z) ltd
 39. Jambo biscuits (k) ltd
 40. Jetlak foods ltd
 41. Kamili packers ltd
 42. Ka oil refineries
 43. Kenafric bakery
 44. Kanafric industries ltd
 45. Kewblest ltd
 46. Kenchic ltd
 47. Kaetaste products
 48. Kenya breweries ltd
 49. Kenya sweet ltd
 50. Kenya wine agencies
 51. Kesian Kenya ltd
 52. Koba waters ltd
 53. Kuguru food complex
 54. Kwality candles and sweets
 55. London distillers (k) ltd
 56. Manji food industries
 57. Mastermind tobacco (k) ltd
 58. Mayfeedskenyaltd
 59. Melvinmashinrnational
 60. Minibakeries Nairobi
 61. Maritini Kenya ltd
 62. Njengo ltd
 63. Nairobi bottlers ltd
 64. New Kenya co-operative creameries ltd
 65. Nestle food Kenya ltd
 66. Norda industries ltd
 67. Nutro manufacturers EPZ ltd
 68. palmhouse Diaries LTD
 69. Patco industries ltd
 70. Pernod Richard Kenya ltd
 71. Pearl industries ltd
 72. Pembe flour mills ltd
 73. Premier flour mills ltd & premier food ltd
 74. Pristine international ltd
 75. Proctor &allan (E.A) ltd

- 76. Prom Asidorkenya ltd
- 77. Rafiki millers ltd
- 78. Razco ltd
- 79. Re-sun spices ltd
- 80. Salimwazarani Kenya ltd
- 81. Sameer agriculture and livestock Kenya ltd
- 82. SBC Kenya ltd
- 83. SIGMA supplies ltd
- 84. Spice world ltd
- 85. Sunny processors
- 86. Tru foods ltd
- 87. Trust feeds ltd
- 88. Trust flavor mills ltd
- 89. Umoja flour mills
- 90. Unga group ltd
- 91. United distillers and vintners
- 92. Value pak foods
- 93. Vinepak foods
- 94. Wanji food industries
- 95. Wrigley company (E.A) LTD

LEATHEER AND FOOTWEAR

- 1. Alpharama Ltd
- 2. ArthiRiver Tanneries Ltd
- 3. Bata Shoe Company (Kenya)Ltd
- 4. Budget Shoes Ltd
- 5. C & P shoe industries
- 6. Leather industries Kenya ltd

- 7. Sandstorm Africa ltd
- 8. Zingo investment

METAL AND ALLIED SECTOR

- 1. Agro Irrigation and pump
- 2. Allied east Africa ltd
- 3. Alloy steel casting ltd
- 4. Apex steel ltd
- 5. Arvind engineering
- 6. Asl ltd stee division
- 7. Asp company ltd
- 8. Ashut engineers ltd
- 9. Arthi river steel plant ltd
- 10. Blue nile wires ltd
- 11. Boothi extractions ltd
- 12. City ingineering works ltd
- 13. Crystal industries ltd
- 14. Davis & shirtliff ltd
- 15. Devkistee mills
- 16. Dushi enterprises
- 17. East Africa Spectre ltd
- 18. East Africa foundry works
- 19. East Africa Glass Wear Mart ltd
- 20. Easy Coach East Africa Ltd
- 21. Elite tolls ltd
- 22. Fine Engineerring

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| <p>23. Friendship container
manufacturing ltd</p> <p>24. General aluminum fabricators ltd</p> <p>25. Harveer bas body builders ltd</p> <p>26. Hobra manufacturing ltd</p> <p>27. Insteel ltd</p> <p>28. Iron art ltd</p> <p>29. Kaluworks ltd</p> <p>30. Ken metal industries</p> <p>31. Mabati rolling mills</p> <p>32. Load trailers</p> <p>33. Kenya coach industries</p> <p>34. Kenya grange vehicle industries
ltd</p> <p>35. King bird (k) ltd</p> <p>36. King finnkenya</p> <p>37. Mann manufacturing co. ltd</p> <p>38. Master fabricaters ltd</p> <p>39. Megh cushion industries ltd</p> <p>40. Motorbike Africa ltd</p> <p>41. Mutsimoto company ltd</p> <p>42. Pipe manufacturers ltd</p> <p>43. R.T (east africa) ltd</p> <p>44. Scania east Africa ltd</p> <p>45. Sohansons ltd</p> <p>46. Songyi motorcycles international
ltd</p> <p>47. Soroya motor spares</p> <p>48. Theevan enterprises ltd</p> | <p>49. Toyota Kenya ltd</p> <p>50. Toyota tshusho east Africa ltd</p> |
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- PAPER AND BOARD**
1. Associated paper and stationery ltd
 2. Autoliyoltd
 3. Bag and envelop converters
 4. Bag and envelop manufacturers (k) ltd
 5. Belsize industries ltd
 6. Brand printers ltd
 7. Carton manufacturers ltd
 8. Cempack solutions ltd
 9. Chandaria industries ltd
 10. Colour labels ltd
 11. Colour packaging ltd
 12. Adpak international ltd
 13. Allpack industries ltd
 14. P.L Patel press Kenya
 15. Dodhia packaging ltd
 16. Dune packaging ltd
 17. East africa packaging industries
 18. Economic industries ltd
 19. Elite offset ltd
 20. Ellams products
 21. English press ltd
 22. Essential manufacturing
 23. Euro packaging ltd

- 24. Flora printers ltd
 - 25. Fortune printers and stationeries ltd
 - 26. Fransiscan Kolbe press
 - 27. General printers ltd
 - 28. Graphics and allied ltd
 - 29. Icon printers ltd
 - 30. International papers & and board suppliers ltd
 - 31. Juja pulp and paper ltd
 - 32. Kartasi industries
 - 33. Kenafric diaries manufacturers ltd
 - 34. Kenya litho ltd
 - 35. Kenya paper mill
 - 36. Kenya stationery ltd
 - 37. Kim – fay east africa
 - 38. Kql graphics ltd
 - 39. L.a.b international Kenya ltd
 - 40. Label converters ltd
 - 41. Manipal international printing press ltd
 - 42. Mfiultra print ltd
 - 43. Modern lithographic (k) ltd
 - 44. Mufundi paper ltd
 - 45. Palmy enterprises
 - 46. Paper house of Kenya ltd
 - 47. Paperbags ltd
 - 48. Pressmaster ltd
 - 49. Printpakkmultipackaging
 - 50. Printwell industries
 - 51. Punchline ltd
 - 52. Rayco printing works
 - 53. Regal press Kenya
 - 54. Sintel security print solutions
 - 55. Stallion stationery manufacturers ltd
 - 56. Startpack industries ltd
 - 57. Tetra pak ltd
 - 58. The rodwell press ltd
 - 59. Twiga stationery and printers ltd
 - 60. United bags manufacturers ltd
 - 61. Vakharia international papermills ltd
- PHARMACEUTICAL AND MEDICAL EQUIPMENT SECTOR**
- 1. African cotton industries
 - 2. Alfa medical manufacturers ltd
 - 3. Autosterile ltd
 - 4. Benmed pharmaceuticals ltd
 - 5. Beta health care international ltd
 - 6. Biodeal laboratories ltd
 - 7. Biopharma ltd
 - 8. Cosmos ltd
 - 9. Dawa ltd
 - 10. Elyschemicall industries ltd

- 11. Glaxosmithklinekenya ltd
- 12. Global merchants ltd
- 13. Labaratory and allied ltd
- 14. Manhar brothers(k)ltd
- 15. Medivet products ltd
- 16. Novelty manufactures ltd
- 17. Osschemie (k)ltd
- 18. Pharmaccessafrica ltd
- 19. Pharmaceutical manufacturing co(k)ltd
- 20. Questa care ltd
- 21. Regal pharmaceuticals ltd
- 22. Scales and soft ware's (k)ltd
- 23. Skylight chemicals ltd
- 24. Lain pharmaceutical ltd
- 3. Bluesky industries ltd
- 4. Betetrad (k) ltd
- 5. Bobmil industries ltd
- 6. Brush manufactures ltd
- 7. Cables and plastics ltd
- 8. Canaaneast company ltd
- 9. Complast industries ltd
- 10. Coninyindutries ltd
- 11. Cocorico investment ltd
- 12. Darshan plastics ltd
- 13. Dynaplas ltd
- 14. Elgiread (kenya) ltd
- 15. Elgon kenya ltd
- 16. Eslonplatic of kenya ltd
- 17. Five styar industries ltd
- 18. Flarkenya ltd
- 19. Foam mattress
- 20. General platics ltd
- 21. Hi.plast ltd
- 22. Jamlamindusrtries ltd
- 23. Jumbo chem
- 24. Kenpolymanufactures ltd

PLASTICS & RUBBER SECTOR

- 1. Acme containers ltd
- 2. Afro plastics (k) ltd

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| 25. Kentainers ltd | 47. Tech pak industries ltd |
| 26. Kinpashenterprices ltd | 48. Thermopak ltd |
| 27 .l.gharris&co ltd | 49. Top pak ltd |
| 28. Lakhir plastics ltd | 50. Treadsetters types ltd |
| 29. Laneebplatic industries ltd | 51. Uniplastics ltd |
| 30. Malplat industries | 52. Vectus Kenya Ltd |
| 31. Metroplat Indutries Ltd | 53. Wonder Pac Indutries Ltd |
| 32. Nairobi plastic ltd | |
| 33. Ombi rubber roller ltd | TEXTILE & APPARELLS |
| 34. Platicselectricons | 1 All Tex Epz Ltd |
| 35. Plastic and rubber industries ltd | 2 Alph Knits Ltd |
| 36. Polyflex industry ltd | 3 Force Equipment Ltd |
| 37. Polythene indutries ltd | 4 Global Apparels Kenya Ltd |
| 38. Princewareafrica (k)ltd | 5 Kema (EA) Ltd |
| 39. Prosel ltd | 6 Kenwear Garments Manufacturers |
| 40. Rubber product ltd | 7 Kenya Tents Ltd |
| 41. Safepak ltd | 8 Kenya Trading (EPZ) Ltd |
| 42. Sanpakafrica ltd | 9 Kikoy Co Ltd |
| 43. Signode packaging systems ltd | 10 Nidco Textiles |
| 44. Singh retread ltd | 11 Newwide Garment (K) Ltd |
| 45. Pringboxkenya ltd | 12 Royal Garment Indutriies Ltd |
| 46. Super manufactures ltd | |

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| 13 Spin Knit Ltd | 3 Kenya Wood Ltd |
| 14 Spinners & Spinners Ltd | 4 Newline Ltd |
| 15 Sunflag Textiles And Knitwear Miles Ltd | 5 Ned Inerior Dewrators Ltd |
| 16 Tarpo Industries Ltd | 6Panesar's Kenya Ltd |
| 17 Thika Cloth Mills Ltd | 7 PG Bison (K) Ltd |
| 18 T- Spinning and Weaving Ltd | 8 Rosewood Funiture Manufacturers Ltd |
| 19 Vatas Manufacturers Ltd | 9 Shah Timber Mart Ltd |
| 20 Future Garment (EPZ) Ltd | 10 Shamco Industries Ltd |
| TIMBER, WOOD & | 11 Tim Sales Ltd |
| FURNITURE | 12 Woodmakers Ltd |
| 1 Fine Wood Works Ltd | 13 Wood Tex Kenya Ltd |
| 2 Furniture International Ltd | |