

**THE EFFECT OF CAPITAL STRUCTURE ON VALUE OF FIRMS LISTED ON THE  
NAIROBI SECURITIES EXCHANGE**

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## **DECLARATION**

This research paper is my original work that has not been presented for a degree in any other University, for any other award and where other research studies have been referred to, they have been fully acknowledged.

Signature ----- Date-----

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This project has been submitted for examination with my approval as the university supervisor.

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## **DEDICATION**

To my parents Mr and Mrs Tonui, for your belief in my ability to achieve this fete.

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## LIST OF ABBREVIATIONS

<b>BV</b>	Book Value
<b>CMA</b>	Capital Markets Authority
<b>EBIT</b>	Earnings before Interest & Tax
<b>EPS</b>	Earnings per Share
<b>KAM</b>	Kenya Association of Manufacturers
<b>KRA</b>	Kenya Revenue Authority
<b>LTD</b>	Long-term Debt
<b>NSE</b>	Nairobi Securities Exchange
<b>P/E</b>	Earnings per Share
<b>ROA</b>	Return on Assets
<b>ROE</b>	Return on Equity
<b>ROI</b>	Return on Investment
<b>STD</b>	Short-term Debt
<b>TA</b>	Total Assets
<b>TD</b>	Total Debt

## ABSTRACT

The foundation of this research was to establish the connection between capital structure and the influence it carries on the value of firms that are listed at the Nairobi Securities Exchange. While many factors can influence a performance, capital structure was fundamental. This study has been supported by three key theories that reveal the motives for various capital structure decisions that firms make. The first one was the trade-off theory, which posits that there is ideal degree of structure of capital in which a firm's esteem is augmented. The second one was the theory of pecking order which notes that there is an uneven data issue amongst directors and financial specialists. The last one was the agency theory. Here, managers are inclined to extend the size of their organizations, regardless of the possibility that that conduct implies undertaking poor activities or decreasing firm esteem. In this research, the value of the firm was anticipated to be influenced by four independent variables: structure of capital, the size of the firm, age of the firm and asset tangibility. The study employed descriptive form of design as it sought to understand the impact of structure of capital on the value of listed firms in Kenya. The focus was on 40 non-financial firms at the NSE and secondary quantitative data was used. This was obtained by abstraction method from financial statements for the 40 companies covered as they are published by NSE. This data covered the period from 1<sup>st</sup> January 2013 to 31<sup>st</sup> December 2017. In this research, descriptive examination was used to carry out analysis of data. The study also used inferential statistics such as regression analysis to analyse the data. This being a continuous secondary data, the diagnostic tests on the data were few given the reliability and the nature of data. The research indicated that short-term debt to equity had a big role in enhancing performance of companies listed in securities exchange. The study recommended that a business friendly environment is a prerequisite for increased firm performance. From this study, it can be argued that performance of a listed business was also affected by exchange rate and inflation. As such, the government needs to put into consideration the growth of the economy as a measure to tame inflation. Also other companies should be encouraged to list. Stock Markets and Capital Markets Authorities need to foster awareness of merits of businesses getting listed as opposed to borrowing.

# CHAPTER ONE: INTRODUCTION

## 1.1 Background of the Study

Capital structure and the effects it bears on the firm value has been broadly researched in corporate finance field since the work done in 1958 by Modigliani and Miller. Nonetheless, there is big contradiction on what informs the capital structure decision and, ultimately, how this decision influences firm value (Weston and Brigham, 1981). A corporate strategy stand on the decision would yield a nitty-gritty comprehension of capital structures and their impacts (Barton and Gordon, 1987)

Similarly, Andrews (1971) guaranteed that capital structure choices are made considering administrative points of view on the estimation of the firm as far as inward and outward business factors. This is referred to as "Strategy–Capital Structure" relationship. The idea infers that corporate capital structures and vital conduct can all be more precisely comprehended through an all-encompassing methodology that unites corporate key points of view and surviving money related research. Following the "Strategy– Capital structure" contention, the present examination together inspected the between connections among capital structure, free income, broadening and firm execution.

There are several companies listed on the Nairobi Securities Exchange (NSE), which range from manufacturing to service firms. This mixture of firms provides a varying array of capital structure arrangements, which can be investigated on whether and how they affect the overall corporate performance. While firm managers make their own decisions with respect to the optimal combination of equity and debt, this decision should impact on the overall performance of a firm as prior studies in other markets

have found out (Kodongo, Mokoaleli-Mokoteli & Maina, 2014). In some, this is not usually the case.

### **1.1.1 Capital Structure**

Modigliani and Miller (1958) describe capital structure as the mix or blend of capital mobilized by companies. The mix or blend impacts on the general cost of capital. Ordinarily, capital structure will be the blend of value and obligation. The extent of this value and obligation to the aggregate capital is chosen by the organization as indicated by the monetary position and capacity to raise such capital. The choice with respect to the capital structure is critical because it influences the income per offer or abundance of the investors. The choice of optimal capital structure is a critical choice that firms must undertake to ensure its profitability and survivability (Fumani & Moghadam, 2015).

Structure of Capital's decision is important due to the need for revenue maximization to different communities of an organization. Decision on debt-equity combination is critical to any firm. From the general standpoint, firms can choose amongst various capital structure alternatives. For instance, large or less portion of debt or equity can be issued. Firms usually endeavour to get the appropriate combination of various funds that maximize their general value and performance (Kausar, Nazir & Butt, 2014).

Capital structure theories explain how capital structure decision impacts and interacts with business performance. The association of firm's structure of capital and its performance has been underscored by various theories (Khan, 2012). Trade-off theory contends that organizations use the debt to its maximum volume and occurs by trading-off costs and benefits of debt. Accordingly, this usually awaits a positive

correspondence amidst the level of debt and performance of an organization up until the ideal amalgamation of capital structure.

### **1.1.2 Firm Value**

The idea of firm value is a questionable issue in finance. According to Murphy et al. (1996), research on firm value radiates from association hypothesis and key administration. Measures of performance are either monetary or authoritative. As Chakravarty (1986) noted, budgetary execution, for example, benefit expansion, expanding benefit on resources, and amplifying investors' advantages are at the centre of the company's adequacy. Hoffer and Sandberg (1987) noted that the measures of operational performance. For instance, the development in deals as well as development in the overall industry, gives broader meaning to execution as they focus on elements that in the end triggers money related executions.

The convenience of execution measures can be influenced by target of a company that could impact firm's decision on execution measures as well as the advancement of the securities market. For instance, if the system for share trading is created in a way that is not exceptional and dynamic, execution measures of the market won't give a decent outcome. Common execution measure intermediaries are Equity Return and the Assets Return. According to Ang, Cole and Line (2000), these bookkeeping measures speaking to the budgetary proportions from accounting report and wage proclamations have been utilized by numerous analysts.

There are different measures of performance such as market performance. Examples are earnings per share (P/E) which showcases estimation of value to book, and Tobin's Q. This model blends accounting and market values which has been used to measure

firm value in other studies (Zhou, 2001). Shahid (2003) contend that the ROA is the valuable measure for testing firm performance. These measures are usually utilized as intermediary measures for firm value.

### **1.1.3 Capital Structure and Firm Value**

Many factors can impact a business's performance but capital structure is fundamental. As such, value maximizing capital structure exist beyond which increments in liquidation costs exceeds minimal assessment cushioning advantages related to additional substitution of obligation for value. Firms will augment their execution and limit their cost of financing cost through value maximizing equity-debt combination. Capital structure can be associated with the exchange off between liquidation expenses and the pickup from liquidation to the two investors and administrators (Harris & Raviv, 1991). Consequently, firms can have more obligations in their structure of capital than is reasonable because it picks benefits for the two investors and administrators.

Belittling the indebtedness costs of improvement or liquidation or the balanced excitement of the two executives and financial specialists, may come about into firms having more commitment in their structure of capital than they should. A study by Krishnan and Moyer (1997) revealed that structure of capital had a negative effect on ROE. Further, Gleason, et al. (2000) examine built up that the association's capital structure negatively impacts on firms' value. Consequently, significant proportion of obligation in capital structure diminish the firm's execution.

Sembenelli and Schiantarelli (1999) examined the impacts of company's obligation development structure on gainfulness for the United Kingdom and Italy. They

established a positive relationship subsisting between beginning obligation development and mid-term execution. Smith and Barclay (1995) confirm that huge firms as well as the firms with meagre development rates want to issue extended haul obligation. Mauer and Stohs (1996) posits that both larger and less dangerous companies overly make more prominent utilization of extended haul obligation. In addition, they established that obligation development is negatively identified with corporate assessment, the association's hazard and acquiring shocks.

#### **1.1.4 Businesses Listed on the Nairobi Securities Exchange**

NSE trades financial assets and is regulated under the Capital Markets Authority (CMA) through several legislative frameworks. The CMA regulates the licensing, mergers and acquisitions, corporate governance, rating agencies, investment schemes, venture capital, asset-based securities, foreign investor relations and listings (NSE, 2014a). The rules regarding capital structure are not explicitly provided for in the CMA guidelines and this is left to company policies to effect.

The Nairobi Securities Exchange currently has 64 firms listed in 11 sectors (NSE, 2014b). These sectors are banking, agriculture, telecommunications and technology, commercial & services, automobiles & accessories, energy & petroleum, insurance investment, construction & allied, manufacturing & allied and growth enterprise market segment. In this particular study, the banking and insurance divisions will not be examined due to the capital structure regulations.

## **1.2 Research Problem**

Up to today, there isn't conclusion on the tie between firm value and structure of capital of companies despite many decades of studies in this field (Fosu, 2013). Capital structure has been a central issue of a plethora of studies across the world. Bevan and

Danbolt (2002) argued that companies that generate low profits tend to rely more on debt financing than the profitable companies. Further, it has also been noted that high debt to equity ratio is observable in firms with high growth rates.

By and by, managers of listed firms in Kenya who can recognize the ideal capital structure are remunerated for limiting a company's cost of finance hence amplifying firm revenues. On the off chance that an association's capital mix affects the performance of the firm, it is projected that company's capital structure could influence the company's wellbeing and its probability of default. So, the issue with respect to the firm value and capital structure at the NSE are essential for scholars and professionals.

The empirical literature is yet to settle the debate on the impacts that structure of capital has on the value of firms especially in less developed countries (Zeitun & Tian, 2007). Studies in this area have mostly analysed the relationship in large manufacturing firms (Park and Jang, 2013). These relationships might not hold true for service organisations. Given that the Nairobi Securities Exchange is a mix of both manufacturing and service firms, an examination of this relationship for the firms is still important.

In Kenya, a study by Kodongo, Mokoaleli-Mokoteli and Maina (2014) examined whether leverage affects financial performance and revealed that the investment plan of using borrowed money had no effect on the value of listed firms. Ater (2017) studied whether capital structure influences the value of firms and revealed a positive relationship. Mutinda and Wamugo's (2017) study on capital cost and value of firm indicated that structure of capital had a productive effect on cost of capital. Muigai (2016) also investigated how structure of capital affects financial distress of



organisations and revealed that leverage had a fatalistic effect on financial distress. While most of these investigations undertake to understand the structure of capital effects, some of them do not examine its effect on firm value while those that do find conflicting results. This points to a deficit in literature, which this present study will seek to fill. This research attempts to respond to: what's the effect of structure of capital on value of firm in Kenya?

### **1.3 Research Objective**

To assess the impact of capital structure on the value of firms that are listed on the Nairobi Securities Exchange.

### **1.4 Value of the Study**

It is hoped that the study will provoke policy makers to give more attention to the capital structure given its contribution to the firm value of firms. Examples of interested policy makers include the National Treasury, the CMA, NSE, KRA and Kenya Association of Manufacturers (KAM).

Managers struggle with right mix of equity and debt and feel that getting that mix is important to the overall health of an organisation. This study will help listed companies in Kenya in appreciating the value of structure of capital and the nexus between firm value and structure of capital of companies.

The study will be instrumental to the field of finance as scholars can use this study as a basis for future research on how capital value is key in enhancing firm value. As such, it will contribute immensely to the knowledge body of structure of capital – performance relationship.

## **CHAPTER TWO: LITERATURE REVIEW**

### **2.1 Introduction**

The section focusses on the theoretical review where three theories of structure of capital are discussed. Then, a section on empirical review follows, where several studies across the world try to expound on the tie between the structure of capital and value of firms.

### **2.2 Theoretical Review**

There are three major theories that are usually discussed in relation to capital structure decisions. The three theories are also briefly discussed in this section. These theories reveal the motives for various capital structure decisions that firms make.

#### **2.2.1 Theory of Trade-Off**

It posits that there's ideal degree of structure of capital in which a firm's esteem is augmented. At that ideal point, the minor advantages of obligation level with the peripheral expenses of obligation and firm execution is expanded (Jang et al., 2008). Contrasted and value financing, obligation is less expensive since it is impose deductible. Nonetheless, an intemperate utilization of obligation is unsafe because of the higher probability of insolvency. Subsequently, the exchange off hypothesis contends that organizations set an ideal target obligation proportion controlled by the exchange off between the advantages (assess findings) and expenses of obligation (liquidation costs) (Jang et al., 2008).

Various exact investigations have endeavoured to establish the determinants of the structure of capital utilizing the exchange off system, including those by Tang and Jang (2007). According to a survey by Bradley et al. (1984) on this theory, there is proof of exchanges. Under the exchange off system, Rajan and Zingales (1995) discovered a

negative connection amongst use and execution. This theory is important in this study as it helps explain that there's some magnitude of structure of capital that is optimal for firms and beyond which value is eroded.

### **2.2.2 Theory of Pecking Order**

It was posited by Myers & Majluf in 1984. The authors noted that there's an uneven data issue amongst directors and financial specialists. Speculators might want to rebate a company's new securities when they are issued. In this manner, managers can suspect value rebates ahead of time. As an outcome, keeping in mind the end goal to abstain from twisting venture choices directors incline toward inner money related assets, for example, held profit, to outside budgetary sources, for example, obligation and value. Myers (1984) recommended that the expenses of issuing hazardous obligation or value overpower the powers that decide ideal use in the exchange off model. This is alluded called pecking-order theory. The theory alludes to the possibility that to limit topsy-turvy data and other financing costs, firms need fund speculations withheld income, at that point with safe obligation, at that point with unsafe obligation, lastly with value.

In this contention, Myers (1984) characterized "safe debt" as recently issued obligation that is free of the default risk. As per straightforward pecking request hypothesis, obligation normally develops when ventures surpass held profit and falls when speculations are not as much as held income. Along these lines, if gainfulness and speculation costs are determined, the basic form of the theory projects that use is bring down for more productive firms when venture is settled (Jang and Park, 2011). Thus, given gainfulness, firms with more ventures have higher usage of debt. However, in a more mind boggling perspective by Myers (1984), firms are worried about future and additionally financing costs.

Adjusting present and future costs, it is workable for firms with huge potential speculations to keep up an okay obligation limit to maintain a strategic distance from either prior future ventures or financing them with unsafe new securities. In this way, controlling for different impacts, firms with bigger potential speculations have less present use. In light of the awry data hypothesis Ross (1977) proposed the flagging impact. As indicated by Ross (1977), advertise members decipher large amounts of obligation as a flag of high caliber and future money streams for the firm. This suggests low quality firms can't deal with bigger obligation levels because of the higher probability of insolvency (Barclay et al., 1995). Therefore, the flagging impact limits firms' entrance to value markets since issuing new value is perceived as a negative flag to showcase members. This theory is important as it explains that different stakeholders in an organisation have different views on what is priority as far as capital structure is concerned.

### **2.2.3 Agency Theory**

Among the models of Meckling and Jensen (1976) and Jensen (1986), contention seems apparent amongst managers and investors. The managers' interests are not lined up with the investors interests as the former tend to squander free-cash-flow. As Jensen (1986) contended, the more prominent the optional sum accessible to a manager, the more noteworthy the probability that the manager will utilize it for perquisites. Therefore, this implies managers are inclined to extend the size of their organizations, regardless of the possibility that that conduct implies undertaking poor activities or decreasing firm esteem. This is alluded to as an over-investment problem.

To alleviate over-investment issues, a manager's capacity to advance their interests are obliged by accessibility of loose flows of cash. This requirement could be arrested

significantly through debt financing. Therefore, agency problems may be ideally comprehended through a capital structure choice, for example, expanding debt leverage (Jensen, 1986). This model expects a positive connection amongst use and firm execution.

### **2.3 Determinants of Firm Value**

There are several factors that also influence firm value other than structure of capital. These variables include size, age, growth, asset structure, risk, and liquidity. Researches investigating the effect of business's size on its performance have discovered a positive connection (Zeitun and Tian (2007)). Therefore, firm size is considered an important factor in the present study as firms vary in size. Hence, it is included as a variable of control.

It's expected that the firm size will have a positive out-turn on value of firms. Size usually gauged as the total assets natural logarithm (Zeitun &Tian, 2007; Ebaid, 2009). This is the same measure that will be adopted in the present study. It is anticipated, therefore, that business's size has positive effect on its performance.

Age of firm is another factor usually considered when investigating the influence of structure of capital on the firm's value. Usually, scholars measure the firm's age using the natural logarithm of years since the firm was incorporated. This measure was used defined so by Abu-Tapanieh and Muritala (2012) in their study. For the present study, the study will measure age by getting the natural log. of the gap between 2017 and the firms' year of incorporation in Kenya.

Another important factor that affects firm value is the tangibility of assets. According to a study by Muritala (2012), asset tangibility has an effect of positive nature on the firm's well-being. These results were confirmed by Ahmed et al (2011) and several other scholars. Usually, this is assessed as the fixed assets ratio to total assets used by a firm. This is the same measure that will be adopted in the present study.

#### **2.4 Empirical Review**

Abor (2005) studied the relationship between profitability and capital structure in firms. Findings showed a positive link between profitability (measured as return on equity) and capital structure (measured by short-term debt) of firms. It was recommended that the debt tended to be cheaper and, thus, with a justly minimal rate on interest on short-term debt will result to increased profit. From this outcome, it was revealed that profitability rises with increased sales and size. Though results disclosed that debt of long-term nature had a defeatist effect on business profitability, which ROE measured, the outcome found out a massive positive link between debt total to assets total ratio and wellbeing.

Zeitun & Tian (2007) also researched on the structure of capital-firm performance connection. Their research revealed that structure of capital had a major and negative effect on wellbeing of firms, which was determined by assets return. This negative outcome concludes that businesses that have more STD/TA also experience low performance. Debt of short-term showed a refinance risk to organizations for it showed a defeatist influence on ROA.

In his study, Pratheepkanth (2011) established a negative correlation between structure of capital and net profit. It was not just negative but the researcher also established

weak correlation between variables of structure of capital and Investment Return. Moreover, the tie between variables of structure of capital and ROA was negative and weak correlation. From the finding, it's deduced that there was defeatist and weak connection amongst variables of structure of capital and wellbeing of organization. In addition, there was negative link amongst financial wellbeing and structure of capital.

Thomas (2012) established a negative tie of capital structure, which was measured as short-term debt as well as total debt, with the return on assets profitability measure. Whereas debt of long term nature had considerable and positive connection with profitability, it was discovered that a positive relationship of size of banks in rural areas and risk level with financial performance with deference to the constant variables. Furthermore, the study showed that using leverage made up of larger fraction of debt of short-term nature unfavourably affected profitability of banks in rural areas.

Additionally, outcomes of the study by Muritala (2012) showed negative link between debt and performance. The return on equity with age and size were also factored in as critical predictors of the performance of organization. Proof from the outcome revealed a negative tie between ROA and asset tangibility.

On the other hand, Ahmad (2012) discovered that debt total and debt of short term nature had huge impact on firms' performance, which was assessed by ROE. Whereas the connection between each debt portion and equity return was found to be substantial, the research also revealed that the non-lagged values for capital structure had significant effects on firm performance.

In a study by Soumadi & Hayajneh (2012), financial leverage was discovered to have negative impact on firm value. The adverse link showed that the desire of firm to finance its many activities by expanding borrowing, which can ultimately result to bankruptcy risks and lead into a decline in tax shields. Consequently, this constricts the performance of a firm. The study found similarity in performance between high and low levered firms.

Shubita & Alsawalhah (2012) discovered a strong but negative connection between profitability of an organization and debt. The study revealed that a rise in the proportion of debt goes in tandem with a dip in profitability of firm. In the same respect, the research indicated that the greater the level of debt, then the lower is an organization's profitability. Furthermore, the research revealed that there's a positive link between profitability and the control variables, meaning that with a rise in constant variables there'll also be a rise in a firm's profitability.

In their research, Ferati & Ejupi (2012) showed that rates of return and debt were inversely proportional, indicating that the bigger the level of debt, the lesser is the profitability amount. The debt of short-term nature revealed negative sign and significance level of two percent, an indication that debt of short-term type was a vital variable. It indicated that there's minimal debt participation and suggested that ECP was a regular norm amongst most thriving organisations. The involvement of equity in capital formation had positive tie with profitability; it was substantial at two percent mark. From this outcome, it's revealed that rates of return had positive link with debt of short term nature and equity, in which it had reverse tie to debt of long term nature.



Umar (2012) in a research in Pakistan investigated the influence of the structure of capital on how organizations perform. Their output indicated a negative link between variables of structure of capital and the organizational financial wellbeing. Furthermore, liability total had a substantial adverse relation with the firm's financial health. Firm size and firm performance had a positive tie and summed up that firm's wellbeing flourished by surging firm assets. The study also showed that there was an adverse relationship between performance of firm and structure of capital. Research outcome further showed that there's a huge adverse link between the variables of structure of capital and the firm's financial health of the firm. Structure of capital's variables also had an adverse tie with businesses' net profit margin.

In Kenya, a study by Maina, et al (2014) investigated the link between profitability, structure of capital, and value of firm. The study used a panel data of listed companies at the NSE for a period beginning 2002 to 2011. Using panel techniques and Tobin's Q for firm's value determination, the investigation revealed that leverage had no influence on value of listed businesses. This was a surprising finding and inconsistent with several studies. Thus, there is still more reason to examine this relationship using other techniques.

Ater (2017) examined the tie between company value and structure of capital for businesses listed in Kenya. The study used a sample of 36 organizations listed at the NSE and considered a period beginning 2011 to 2015. The output revealed a positive link between firm's value and structure of capital measured as debt-to-equity ratio. This study model did not control for the effects of other factors in the model hence the results may not be reliable thus a need for further studies.

Mutinda and Wamugo (2017) investigated the tie between cost of capital and structure of capital for listed firms. The study focused on a sample of 41 listed businesses. The data covered a period beginning 2010 to 2014. Using a panel regression technique, the study showed that structure of capital had a positive influence on cost of capital. This study did not examine whether capital structure influenced firm value hence leaves room for investigation of this relationship.

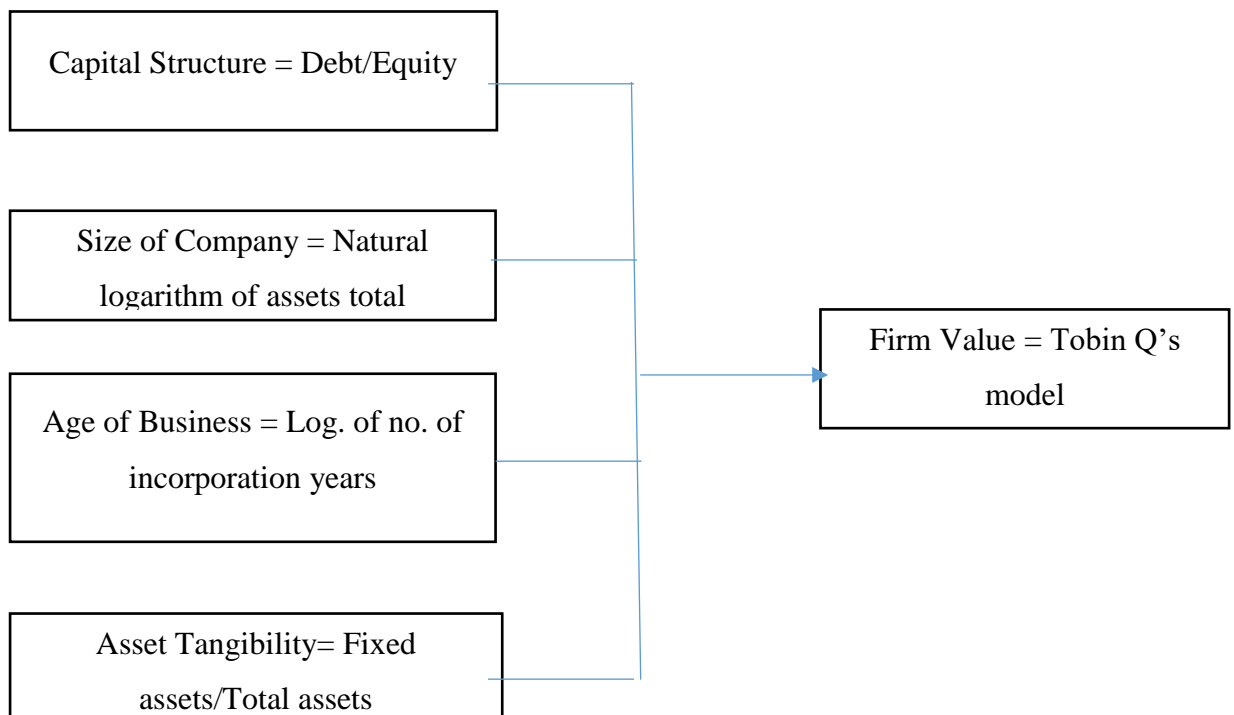
Muigai (2016) also dwelt on the effect of structure of capital on firm's financial distress. The study used a sample of 41 non-financial firms listed at the NSE. The data covered from 2004 to 2013. The study revealed an adverse tie between leverage and financial distress. While the study focused on examining capital structure effects, the effect on firm value was not at the centre of the study hence provides sufficient reason to further examine this relationship.

Kulati (2014) examined the relationship that exists between structure of capital and the firm value for listed businesses in Kenya. The study used a sample of 38 companies that are listed at the NSE using data from 2009 to 2013. The study indicated capital structure had a positive influence on value of firm. However, while this study modelled capital structure using two separate variables, the regression analysis did not provide an explanation on what 'capital structure' meant as it seems the analytical model was not followed in the analysis. This renders the results of the study unreliable as far as concluding the effect of structure of capital on firm value.

## 2.5 Conceptual Framework

The value of the firm is anticipated to be influenced by four independent variables. More specifically, it is probable that structure of capital will have adverse impact on firm value as several other scholars have opined. The study also expects a positive relation between the size of the firm and firm value with bigger firms having higher firm values. It is also expected that age will have a positive effect on firm value. Further, asset tangibility is expected to have a positive influence on the value of firms. The following is the conceptual model adopted in this study.

**Figure 2.1 Conceptual Model**



**Source:** Nassar (2016)

## 2.6 Summary of the Literature Review

This chapter provides a review of the literature on the subject matter. The three theories explain the motivation for varying levels of capital structure in firms. The empirical studies reveal that the results for the effect of capital structure on firms is mixed hence

more gaps remain for future studies. This study seeks to bridge this gap as explained in the conceptual framework using other control factors that determine firm value. Table 2.1 provides a summary of research gaps:

**Table 2 1: Summary of research gaps**

<b>Author</b>	<b>Research objective</b>	<b>Research Gap</b>
Ater (2017)	Effect of capital structure on value of firms	This study model did not control for the effects of other factors in the model
Mutinda and Wamugo (2017)	Relationship between capital structure and cost of capital for listed firms	This study did not examine whether capital structure influenced firm value
Muigai (2016)	The effect of capital structure on the financial distress of firms	The effect on firm value was not at the centre of the study
Kulati (2014)	Relationship that exists between capital structure and the firm value	Capital structure was not expressly defined in the final model hence the regression results are unreliable
Kodongo, Mokoaleli-Mokoteli and Maina (2014)	Relationship between capital structure, profitability and firm value	Found no effect on firm performance hence inconsistent with many other studies

## **CHAPTER THREE: RESEARCH METHODOLOGY**

### **3.1 Introduction**

This methodology section focuses on the processes involved in achieving the objectives of the study. It begins with presenting the research design succeeded by a discussion of the population of the research. Then, a sample size is explained including the criteria for selection. The data collection procedure, which also includes the sources of data are then explained. Finally, the data analysis procedure is discussed where the model formulation is also explained.

### **3.2 Research Design**

The study adopted a descriptive form of design. Descriptive research was a research design that sought to describe a phenomenon as it is and mostly appropriate in basic research (Kothari, 2008). Since this research sought to understand the impact structure of capital has on the value of listed firms in Kenya, the descriptive design was best suited.

### **3.3 Population**

According to Ngechu (2004), population is a group of elements being investigated. The elements can be people or institutions. In this study, the elements were institutions. This study focused on listed firms at the NSE. Therefore, the population of interest were all the 64 listed companies at the NSE as at December 2017 (see appendix 1).

### **3.4 Sample Size**

The population of 64 listed companies was composed of both financial and non-financial firms. Since financial companies have different reporting requirements and different capital structure regulations, they were left out of the final sample. Thus, the study focussed on the 40 non-financial firms at the NSE. These were companies that

are still active traders the NSE and the data were stratified by time periods for periods between 1<sup>st</sup> January 2013 and 31<sup>st</sup> December 2017.

### **3.5 Data Collection**

This research used secondary quantitative data. These were obtained by abstraction method from financial statements for the 40 companies covered as they are published by NSE. This data covered the period from 1<sup>st</sup> January 2013 to 31<sup>st</sup> December 2017.

### **3.6 Data Analysis**

This section discussed the diagnostics tests that were done during data analysis, the analytical model that will be employed, as well as the tests of significance.

#### **3.6.1 Diagnostic Tests**

Descriptive examination was used to carry out analysis of data where SPSS Version 23 will be used for data analysis. The study also used inferential statistics such as regression analysis to analyse the data. This being a continuous secondary data, the diagnostic tests on the data were few given the reliability and the nature of data. Of significance, was the test for normality, which is a measure assumption of linear regressions. The study also tested for normality of data using skewness and kurtosis measures. This was done before the data is run.

#### **3.6.2 Analytical Model**

To investigate this relationship, the study formulated a regression equation.

$$\text{Performance} = \alpha + \beta_1 \text{STD}/E_{I,t} + \beta_2 \text{LTD}/E_{I,t} + \beta_3 \text{TD}/E_{I,t} + \beta_4 \text{SIZE}_{I,t} + \beta_5 \text{AGE}_{I,t} + \beta_6 \text{TANG}_{I,t} + \varepsilon_{i,t}$$

### **3.6.3 Test of Significance**

To assess the strength of the design and the impacts of the structure of capital of Kenya's stock market-listed firms, the researcher conducted a Variance Analysis and an F Test. The study will test significance at the 5% level.

## CHAPTER FOUR: DATA ANALYSIS AND RESULTS

### 4.1 Introduction

This chapter is allocated into two main segments. The first one presents results of Tests for Statistical Assumptions. The second section provides results of an analysis of the different variables employed in the study were done. Through descriptive and inferential statistical operations, the chapter further presents and explains the results as a manifestation of the variables under study. Mean scores have been used to indicate the rating of the extent to which the various aspects of the variables manifested across the organizations.

### 4.2 Diagnostic Tests

Statistical techniques employing correlation, regression, t-test analysis and assessment of variance are anchored on the supposition that the data adheres to a normal distribution. The statistical errors identified in the analysis were checked by performing diagnostic tests. The study used Shapiro-Wilk test, Q-Q plot, Multicollinearity, Homogeneity of Variance and Pre-regression Analysis to test the statistical errors. This is to determine if the data set was well modelled.

#### 4.2.1 Tests of Normality

In the study, the normality was tested using the Shapiro-Wilk Test. The Test of Shapiro-Wilk is appropriate or most powerful test of normality (Razali & Wah, 2011). It is a more consistent test for inaugurating Kurtosis values of normality. In case it is lower than 0.05, the data meaningfully deviate from normal dispersal. Results for the normality test are presented in Table 4.7.

**Table 4.1 Shapiro-Wilk Test**

<b>Variables</b>	<b>Shapiro-Wilk</b>		
	Statistic	Df	Sig



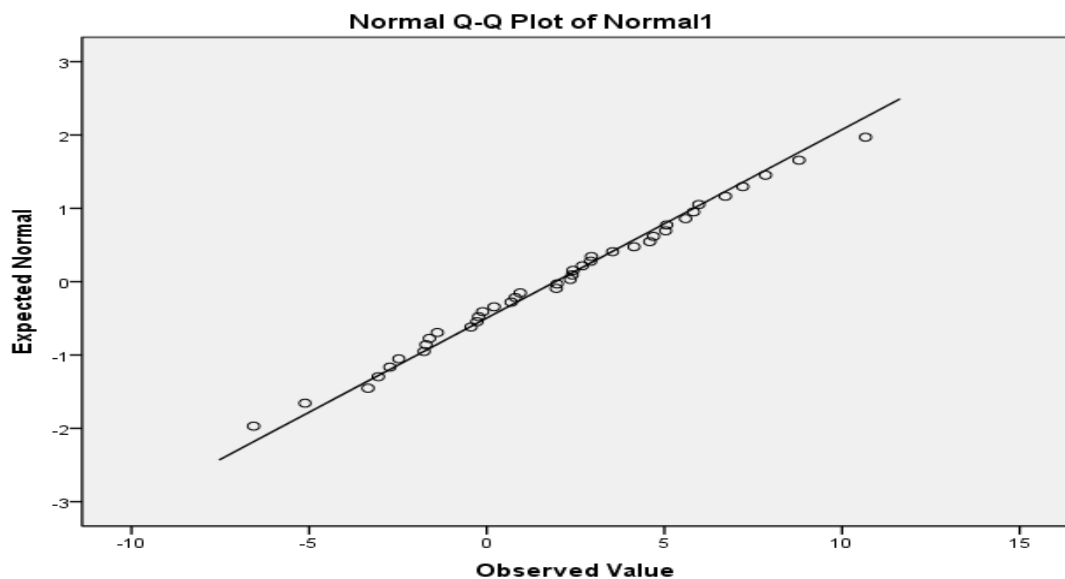
STD/E	.986	1.352	0.000
LTD/E	.865	1.283	0.000
TD/E	.985	1.361	0.000
SIZE	.954	1.242	0.000
AGE	.853	1.243	0.000
TANG	.978	1.241	0.000

**Source:** Research Data (2018)

The results from Table 4.1 shows that the firm level strategy, capabilities, organizational culture and the dependent variable of firm performance were normally distributed. Shapiro-Wilk Test results were (0.000, 0.00, 0.000) which were more than 0.05 approving the data was normal.

Outcome of normal Q-Q Plot is utilised to determine the distribution of data in a graph. The data points will be close to the line to indicate that it is valid and has a normal distribution. If the data dots appear to be away from the line, then the data is not distributed normally and vice versa. Output of performance of Q-Q plot is shown below in figure 4.1.

**Fig. 4.1: Plot of Q-Q**



**Source:** Research Data (2018)

Results from figure 4.1 shows that the rings all lie close to the diagonal line; this is a clear indication that data come from a normal distribution. The data in this Q-Q plot also is normally distributed. There's a slight random twist about the line; this does not exclude these data from being normal.

#### **4.2.2 Tests of Independence**

When error terms are independent, there is a clear indication of data observed is independent. To establish independence of data, the study used Durbin-Watson test. Scores of 2.5 show independent annotations (Garson, 2012).

**Table 4.2 Durbin Watson Test**

<b>Variables</b>	<b>Durbin Watson</b>
STD/E	1.775
LTD/E	2.043
TD/E	2.111
SIZE	2.385
AGE	2.044
TANG	2.211

**Source:** Research Data (2018)

The DW statistics were close to the recommended value of 2.0: STD/E (1.775), LTD/E (2.045), TD/E (2.111), SIZE (2.385), AGE (2.044) and TANG (2.211). Thus, it can be established that no auto-correlation was there and there was independence among the residuals, meaning the variables in the research had independency.

#### **4.3 Descriptive Statistics**

This part provides a brief of the data obtained for each of the variables in this study. The descriptive statistics employed were; mean, median, highest and lowest values and the standard deviation.

**Table 4.3 Descriptive Statistics**

<b>Variables</b>	<b>Minimum</b>	<b>Maximum</b>	<b>Mean</b>	<b>Standard Dev.</b>
STD/E	-5.321	11.243	0.245	1.431
LTD/E	0.034	18.453	5.543	5.237
TD/E	0.041	62.325	7.325	8.231
SIZE	0.000	20.548	0.648	1.436
AGE	0.021	48.762	1.541	4.065
TANG	0.000	28.455	0.743	1.423

**Source:** SPSS V22 Data Analysis Output

The study shows that short-term debt to equity had a minimum value of -5.321. The maximum value was 11.243. On the other hand, the mean score was 0.245 and a standard deviation of 1.431. An average score of 0.245 and a standard deviation of 1.431 indicate that there is a huge disparity in data distribution since the standard deviation is much higher than the mean.

Long-term debt to equity of the firms under study had the lowest value of 0.034 and highest value of 18.453 while the average value was 5.543 with a standard deviation of 5.237. Long-term debt to equity of the firms indicated a deviation from the standard deviation. There is a disparity in distribution of data between the mean a standard deviation.

The study further indicates that total debt to equity had a minimum score of 0.041, a maximum score of 62.325, mean of 7.325 and a standard deviation of 8.231. Total debt to equity of the firms indicated a deviation from the standard deviation. There is a disparity in distribution of data between the mean and standard deviation.

The results further indicate that Natural logarithm of total assets had a minimum value of 0.000, a maximum score of 20.548, a mean of 0.648 and a Standard deviation of 1.436. Natural logarithm of total assets of companies indicated a deviation from the

standard deviation. There is a disparity in distribution of data between the mean a standard deviation.

Age (log of number of years since the firm is founded) had a low value of 0.021, high value of 48.762, mean of 1.541 and standard deviation of 4.065. Age (log of number of years since the company is incorporated) indicated a deviation from the standard deviation. There is a disparity in distribution of data between the mean a standard deviation.

Assets Tangibility (Fixed Assets/ Total Assets) of the firms sampled had a minimum value of 0.000 and a maximum value of 28.455. On the other hand, the mean value was 0.743 while the standard deviation was 1.423.

#### 4.4 Correlation Analysis

The summary of the relations among the variables of the study is accessible in table 4.4.

**Table 4.4 Correlation Coefficients**

		STD/ E	STD/ E	STD/ E	STD/ E	STD/ E	STD/ E
STD/E	Pear. Correlation	1					
	Sig. (two-tailed)						
LTD/ E	Pear. Correlation	.811*	1				
	Sig. (two-tailed)	0.016					
TD/E	Pear. Correlation	.772*	.975	1			
	Sig. (Two-tailed)	0.07	.091				
SIZE	Pear. Correlation	.984	.008	.049	1		
	Sig. (two-tailed)	0.03	.033	.021			
AGE	Pearson Correlation	.984**	.008	.034	.076	1	
	Sig. (2-tailed)	0.019	.033	.025	.042		
TANG	Pearson Correlation	.984**	.008	.031	.089	.028	1
	Sig. (2-tailed)	.08	.033	.034	.034	.009	

Correlation Analysis was carried out between the predictor variables and the predicted variable. A weak positive correlation was noted between debt of short-term nature to equity, Long-term debt to equity, Total debt to equity, Natural logarithm of total assets, Age (log of number of years since the business is registered) and Tangibility of Assets (Fixed Assets divided by Total Assets) as indicated by correlation coefficient of 0.016, 0.07, 0.03 and 0.0198. However, only Assets Tangibility (Fixed Assets/ Total Assets) had a statistically substantial correlation as demonstrated by a p value of 0.08. The rest of the predictor variables had a non-statistically significant correlation as demonstrated by p values which are greater than 0.05.

#### 4.5 Regression Analysis

This was done using the SPSS version 22 at 95% confidence level. Regression analysis was done per sector before the overall regression was developed. The summary of the findings were as per Table 4.5

**Table 4.5 Summary**

Model	R	R-squared	Adjusted R-squared	R-squared change	F Change	df 1	Df2	Sig. F change	Durbin Watson
1	.302 <sup>a</sup>	.092	.083	.092	10.38	4	410	.000	
2	.438 <sup>b</sup>	.209	.200	.117	60.69	1	409	.000	1.521

**Source:** Research Data (2018)

Based on the Model Summary Table 4.5 where the predictors: debt of short-term nature to equity, debt of long-term nature to equity, debt total to equity, Natural Log. of total assets, Age (log. of years since the business was founded) and Tangibility of Assets (Fixed Assets/ Total Assets) were added  $P < .05$ , the results disclosed that these explanatory variables contributed to the whole significant relationship with the response variable, firm value.

**Table 4.6 Results of regression**

Table 4.6 shows that the link between the dependent variables and independent variables is:

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	3.521	.342		7.342	.035
STD/E	.521	.152	.546	4.344	.032
LTD/E	.531	.742	.342	2.585	.034
TD/E	.138	.324	.341	1.212	.025
SIZE	.402	.432	.354	2.312	.033
AGE	.148	.441	.282	1.031	.038
TANG	.504	.685	.257	2.412	.043

a. Dependent Variable: Value of firms on the Nairobi Securities Exchange

The following regression result was obtained:

$$\text{Performance} = \alpha + .521\text{STD/E} + .531\text{LTD/E} + .138\text{TD/E} + .402\text{SIZE} + .148\text{AGE} + .504\text{TANG}$$

#### **4.6 Interpretation of the Findings**

A regression coefficient of 0.521 was obtained for the first independent variable (debt of short-term nature to equity). The results point that an increase in Short-term debt to equity results to performance of firms listed at stock exchange. These findings were in line with Tahmoorespour et.al (2015) that Short-term debts to equity have a significance relationship to increase in stock returns.

A regression coefficient of 0.531 deduced from Long-term debt to equity indicated that a unit increase in Long-term debt resulted to performance and increase in value of firms listed at stock exchange. While computing significance levels of the variables, a p value of 0.034 was obtained. The results are not significance since the P value is above 0.05.

The study further shows Total debt to equity influences performance of firms negatively as evidenced by regression coefficient of 0.1893. This shows that a unit rise in total debt to equity negatively affects stock returns. This can be further confirmed by p value of 0.38 which is more than 0.05 connoting statically insignificance. Regression of the stock returns against the fourth independent variable, Natural logarithm of total assets yielded a regression coefficient of 0.148. The results indicate that Natural logarithm of total assets has a positive influence on stock returns. Stocks with higher Natural logarithm of total assets would result in higher stock returns.

## **CHAPTER FIVE: SUMMARY, CONCLUSIONS AND RECOMMENDATIONS**

### **5.1 Introduction**

The section begins by presenting the data analysis summary for the research. The conclusions arrived at from the data analysis will also be presented in this section. Further recommendations for further study will also be outlined before the limitations of the study are highlighted.

### **5.2 Summary of the Findings**

From the study, short-term debt to equity indicated statistically insignificant to value of the firm. Although statistically there is no relationship, short-term debt to equity has a big role in enhancing performance of companies listed in stock exchange.

Equally, the company size, which is measured by natural logarithm assets total was found to have a strong influence on the firm's stock price. With a regression coefficient of 0.644 for long-term debt to equity, there is a connection on Nairobi Securities Exchange-listed companies' performance. The mix of debt and equity has a long-term implication on firms' survival. Different firms apply different mix of capital structure that suits them. Firms should employ capital structure effectively to meet its short term and long term obligations. This will ensure that earnings are improved and risk is minimized most of the time.

The regression analysis on 5 years' data from 1<sup>st</sup> January 2013 to 31<sup>st</sup> December 2017 revealed there is insignificant positive correlation between structure of capital and the company's Earnings per Share. The study is in agreement with Ubesie (2016) study on Nigerian listed 93 conglomerates between 2011 and 2015, but contradicts a research by



Ramachandran & Madhumathy (2016) on the impact of structure of capital on the Indian textile Industry.

### **5.3 Conclusion**

The results indicate that save for the telecommunication sector, stock returns are not significantly influenced by the capital structure for Nairobi Securities Exchange-listed businesses and management and investors such firms should not be concerned with the firms' capital structure for purposes of obtaining higher returns on the stocks held. Further, profitability only influences stock returns significantly in the investment sector and in the telecommunication and investment sector and management and investors in these sectors should be concerned with changes in profitability as the same would influence the stock returns. Stock liquidity should also be a variable of concern for managers and investors in the agricultural sector as this had a significant positive association with the stock returns.

The regulatory agencies such as Capital Markets Authority should invest in researching major motives of investors in the Nairobi Securities Exchange. The necessity stems from the fact that the expected fundamental causes of changes in stock returns are not valid for the Kenyan context. The assertion is evidenced by the fact that the model adopted in this study only accounts for 4.4% of the variation in stock returns. Similar researchers such as Ndung'u (2014) and Muiva (2014) also found that the fundamental variables expected to influence returns of stock for the companies listed on the Nairobi Securities Exchange only accounted for 24.7% and 0.3% respectively of the variations in the stock returns.

#### **5.4 Recommendations for Policy and Practice**

Inflation and exchange rate also affect the listed company's value. Therefore, the government should consider economic growth as a means to control the inflation.

Also other companies should be encouraged to list. The Capital Market Authorities and the Exchanges should increase education of the business community in the advantages of listing over borrowing. In Kenya a large proportion of businesses are small and medium enterprises but very few of these are listed on the NSE. The NSE and Capital markets Authority should ensure that the financial year ends of companies listed at the NSE are same for comparison purposes especially for stock prices. Also the definition of items included in financial statements of the listed companies should be same.

#### **5.5 Limitations of the Study**

The study aimed at establishing the effect of capital structure on value of firms listed on the Nairobi securities exchange. Time constraint was also a limitation on both the researcher and respondents. The researcher being a fulltime employee in a firm with very tight schedules did not have enough time to attend to the project work. To overcome this, the researcher hired the services of qualified research assistants. The population of 64 listed companies is composed of both financial and non-financial firms. Since financial companies have different reporting requirements and different capital structure regulations, they were left out of the final sample. Thus, the study focused on the 40 non-financial firms at the NSE.

#### **5.6 Recommendation for Further Study**

A business friendly environment, favourable business policies and investor friendly environment is a prerequisite for increased firm performance. Therefore, the government should provide a favorable business environment to enhance firm performance.

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## APPENDICES

### Appendix I: Companies Listed at the NSE as at 31 December 2017

#### Sector 1: Agricultural

1. Eaagads Ltd
2. Kapchorua Tea Co. Ltd
3. Kakuzi
4. Limuru Tea Co. Ltd
5. Rea Vipingo Plantations Ltd
6. Sasini Ltd
7. Williamson Tea Kenya Ltd

#### Sector 2: Commercial and Services

8. Express Ltd
9. Kenya Airways Ltd
10. Nation Media Group
11. Standard Group Ltd
12. TPS Eastern Africa (Serena) Ltd
13. Scangroup Ltd
14. Uchumi Supermarket Ltd
15. Hutchings Biemer Ltd
16. Longhorn Kenya Ltd
17. Atlas Development and Support Services

#### Sector 3: Telecommunication and Technology

18. Safaricom

#### Sector 4: Automobiles and Accessories

19. Car and General (K) Ltd

- 20. Sameer Africa Ltd
- 21. Marshalls (E.A.) Ltd

**Sector 5: Banking**

- 22. Barclays Bank Ltd
- 23. CFC Stanbic Holdings Ltd
- 24. I&M Holdings Ltd
- 25. Diamond Trust Bank Kenya Ltd
- 26. Housing Finance Co Ltd
- 27. Kenya Commercial Bank Ltd
- 28. National Bank of Kenya Ltd
- 29. NIC Bank Ltd
- 30. Standard Chartered Bank Ltd
- 31. Equity Bank Ltd
- 32. The Co-operative Bank of Kenya Ltd

**Sector 6: Insurance**

- 33. Jubilee Holdings Ltd
- 34. Pan Africa Insurance Holdings Ltd
- 35. Kenya Re-Insurance Corporation Ltd
- 36. Liberty Kenya Holdings Ltd
- 37. British-American Investments Company ( Kenya) Ltd
- 38. CIC Insurance Group Ltd

**Sector 7: Investment**

- 39. Olympia Capital Holdings Ltd
- 40. Centum Investment Co Ltd
- 41. Trans-Century Ltd

- 42. Home Afrika Ltd
- 43. Kurwitu Ventures
- 44. Nairobi Securities Exchange

**Sector 8: Manufacturing and Allied**

- 45. B.O.C Kenya Ltd
- 46. British American Tobacco Kenya Ltd
- 47. Carbacid Investments Ltd
- 48. East African Breweries Ltd
- 49. Mumias Sugar Co. Ltd
- 50. Unga Group Ltd
- 51. Eveready East Africa Ltd
- 52. Kenya Orchards Ltd
- 53. A.Baumann CO Ltd
- 54. Flame Tree Group Holdings Ltd

**Sector 9: Construction and Allied**

- 55. Athi River Mining
- 56. Bamburi Cement Ltd
- 57. Crown Berger Ltd
- 58. E.A.Cables Ltd
- 59. E.A.Portland Cement Ltd

**Sector 10: Energy and Petroleum**

- 60. KenolKobil Ltd
- 61. Total Kenya Ltd
- 62. KenGen Ltd
- 63. Kenya Power & Lighting Co Ltd



64. Umeme Ltd

**Source: Nairobi Securities Exchange as at December 2017.**